ARISTOTLE

THE CATEGORIES
ON INTERPRETATION
PRIOR ANALYTICS
# Preface

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PREFACE

With an eye to the English reader, who knows, perhaps, little of logic and less in that case of Aristotle’s, I have tried in translating these texts to bring out the philosopher’s meaning as clearly as was in my power. How far I have succeeded in doing so, provided I interpret it rightly, the reader alone can determine. I cannot, in consequence, pretend that I literally translate the Greek, where it seemed that a literal translation would fail to achieve this main purpose. Some scholars may possibly object that at times I paraphrase Aristotle. I can in that case only plead that a more or less intelligible paraphrase does convey something to the reader, unlike strict adherence to the letter. Moreover, a literal translation might often repel English readers and read like some alien jargon, as well as in all probability demanding rather copious notes, which are foreign from the scope of this series.

The Greek text here printed is Bekker’s, except for some slight deviations that are noted at the foot of the page.

The short introduction that follows was submitted to the Provost of Oriel. I have to thank my friend and former tutor, Lt.-Col. A. S. L. Farquharson, for help and advice on certain points in regard to the meaning of the texts.

H. P. C.

Cambridge, 1934
i. be neon δ
_paddy my oao? (Pee-ees ἅΣ ἁς Qetecd, cy εὐ ει kkes)
be hey 'rie fdas . Ξ fy τὰν. τ Ὁ Ore Wah oy Mia we od Se i κ'
=f ha αἰ t-te Seer: i | yetan Od —as sit jo Μ '5A yf πε) κ'
yan iwon Ὁ. a τι ee i all
Δεῖ stores »
ARISTOTLE
THE CATEGORIES
INTRODUCTION

What is the subject of the Categories? In ordinary usage κατηγορία, rendered in English as 'category,' meant nothing more than 'a predicate.' This meaning it seems highly probable that it retains in this text. The ten categories, then, are ten predicates. What sort of predicates, however, and predicates also of what? Let us first raise another point here. If we ask how Aristotle came by them, the critics are not in agreement. The following seems, on the whole, the most plausible view of the matter.

'Aristotle,' says Theodor Gomperz, 'imagines a man standing before him, say in the Lyceum, and passes in successive review the questions which may be put and answered about him. All the predicates which can be attached to that subject fall under one or other of the ten heads, from the supreme question: What is the object here perceived? down to such a subordinate question, dealing with mere externalities, as: What has he on? What equipment or accoutrements, e.g. shoes or weapons? Other questions are concerned with his qualities and his size (white, instructed in grammar, so many feet tall); under the head of relation (Related to what) come answers in which a term such as Greater or Less, Handsomer or Uglier, implies a reference to an object or objects of comparison. The "When" is explained by a
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Yesterday or To-morrow, the Doing and Suffering by the sentences: "He is cutting or burning," "He is being cut or burnt." The enumeration is intended to comprise the maximum of predicates which can be assigned to any thing or being. A maximum, be it observed; for it can hardly be by chance that the full number is found in only two passages of the work, while the two which are at once the most special and the least important, those relating to Having, or possession, and to Lying, or attitude, are in every other case passed over without mention. And indeed, what sense could there be in speaking of the possessions of a stone or a piece of iron, or of the attitude of a sphere or a cube? We further observe that several others of the categories are often lumped together under the one name of "Affections," while others are collectively designated "Motions." Grote took a similar view. 'Now what is remarkable,' he wrote, 'about the ninth and tenth Categories is, that individual persons or animals are the only Subjects respecting whom they are ever predicated, and are at the same time Subjects respecting whom they are constantly (or at least frequently) predicated. An individual person is habitually clothed in some particular way in all or part of his body; he (and perhaps his horse also) are the only Subjects that are ever so clothed. Moreover animals are the only Subjects, and among them man is the principal Subject, whose changes of posture are frequent, various, determined by internal impulses, and at the same time interesting to others to know. Hence we may infer that when Aristotle

*Greek Thinkers (Eng. tr.), vol. iv. p. 39. 'A maximum,' too, for a man, for a man might have no clothing on!
ARISTOTLE

lays down the Ten Categories, as Summa Genera for all predications which can be made about any given Subject, the Subject which he has wholly, or at least principally, in his mind is an individual Man. We understand, then, how it is that he declares Habere and Jacere to be so plain as to need no further explanation. What is a man's posture? What is his clothing or equipment? are questions understood by every one.'

If the views thus expressed are correct (and they seem to admit of no doubt) in regard to the source of the doctrine, we can draw, I think, certain conclusions respecting the nature of the categories, as they appear in this text, as distinct from other texts of Aristotle, and, at least, in their primary significance. They constitute the most general predicates assignable to one single subject. That subject can only be either an individual man or an animal. Of any other subject whatever not all of them are possible predicates. They constitute, therefore, 'a maximum,' as Theodor Gomperz well puts it. To certain other namable entities a number may, doubtless, belong; and, moreover, on a secondary view, at least one may belong to all others. We may thus describe everything existing as a substance or quantity or quality or refer it to one of the others.

This latter point brings us, I think, to a common explanation of the doctrine. Dr. Ross, for example, considers that 'the categories are a list of the widest predicates which are predicable essentially of the various namable entities, i.e., which tell us what kinds of entity at bottom they are.'

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*Aristotle (ed. 2, 1880), p. 79.

*Aristotle, p. 93.
this statement correctly, this means that the ultimate answer to the question what is red is 'a quality,' the ultimate answer to the question what space is or time is 'a quantity.' On that view each namable entity falls under only one category, having one only for predicate. And surely one category only can tell us what a thing is 'at bottom.' Now, a careful inspection of the text shows, I think, that this view is correct. Aristotle, in particular, of quantity enumerates several examples, such as time, space, speech, lines, solids, numbers. And if you were to ask what these are, then the ultimate answer to the question is 'quantities discrete or continuous.' Moreover, he expressly reminds us that only some things, strictly speaking, belong to the category of quantity. This implies that all namable things can be classed under one or another. And the fact that he admits the possibility of a thing's falling under two categories scarcely affects the main point. And this view is consistent with our statement that one of the categories, at least, will belong to each namable entity.

These contentions, I think, will hold good. Not, however, of the classification in its earliest form and significance. For nothing, indeed, in that case appears clearer, at least to my mind, than that all of the ten were envisaged as the predicates of one single subject. This is not to deny that the doctrine has additional aspects or meanings and that it might come to be made to serve purposes other than the primal and, possibly, far more important.

So, again, we may properly argue that one subject of our text is the meanings of 'uncombined,' 'isolated words' (or of terms as opposed to propositions) and the things signified by those terms. Thus the
doctrine of the categories may serve as a classification of such meanings. It is only again in regard to the primary sense of that doctrine that I do not quite follow Dr. Ross. 'It would seem,' so he says very briefly, 'that in its earliest form the doctrine was a classification of the meanings of, i.e. of the things meant by, "uncombined words," in other words an inventory of the main aspects of reality, so far at least as language takes account of them.' This seems to me only to be true of the doctrine 'in its earliest form,' if 'reality' is taken as meaning an individual man or an animal.

Then the terms of the text make it evident, as Gomperz has rightly observed, that the doctrine had a definite bearing, in the uses to which it was put, on the theory and practice of disputation—a matter of small interest now. Otherwise we should not find it dealing with the subject of dialectical questions.

That the subject of all the ten categories is an individual man or an animal may be possibly due in some measure not only to actual observation of men in the market-place of Athens but also to Aristotle's holding that the real is the concrete individual. And what better instance could he take with a view to illustrating his lectures than a Plato, a Callias, a Socrates, or (being possessed of some humour) some member of his logical classes?

This view presupposes, of course, that the doctrine derives from Aristotle. Some scholars deny this or doubt it, supposing he found it ready-made and took it over complete from the Academy. Certain points may lend colour to this theory, among them the fact

*Aristotle, p. 93.*
we have noticed, that some of the categories only appear to possess real importance or even come in for much notice. Any positive evidence in its favour it is difficult, however, to adduce. And the writings of Plato himself do not seem to lend any support to it.*

One objection to regarding the categories as predicates calls for brief notice. It is true, the first category is substance and so-called 'first substance' individual, and what is individual can never be, properly speaking, a predicate. But, if we ask what Plato is, then the answer we shall give in the long run as being the broadest about him is that he is 'a primary substance,' a concrete and individual man. So in that sense 'first substance' is a predicate.

The text, On Interpretation, does not require much comment here. It was seemingly so called since language was regarded as interpreting thought. If we say that the Categories for subject has 'isolated,' 'uncombined terms,' then this text has propositions, their theory, analysis and so on for subject and is specially concerned with developing the possible oppositions between them. The distinction between 'true' and 'false' also naturally finds a place here. Propositions are called 'true' and 'false,' a distinction without any meaning as applied to mere 'uncombined terms.' Aristotle assumes here that truth is a kind of correspondence with reality. Concepts are 'likenesses' of things. Propositions combine or separate them. They are true, when the things represented are similarly combined or separated; they are false in the contrary cases. Apart from

* Failing positive evidence to the contrary, I take the traditional view that the first nine chapters of this text are the genuine work of Aristotle.
what Aristotle says or implies of the concepts themselves, this is open to all the objections that are valid against Locke and others. The reader may compare this from Locke: 'Truth, then, seems to me, in the proper import of the word, to signify nothing but the joining or separating of Signs, as the Things signified by them do agree or disagree one with another. The joining or separating of signs here meant, is what by another name we call proposition. So that truth properly belongs only to propositions: whereas there are two sorts, viz. mental and verbal; as there are two sorts of signs commonly made use of, viz. ideas and words.'

* An Essay concerning Human Understanding, Bk. iv. c. 5.
THE CATEGORIES

SUMMARY OF THE PRINCIPAL THEMES

Ch. 1. The meaning of univocal, equivocal and derivative terms.

Ch. 2. Expressions are simple or complex. 
Things are (1) asserted of a subject, (2) present in a subject, (3) both (1) and (2) or (4) neither (1) nor (2).

Ch. 3. Predicates of the predicate are predicable also of the subject.

Ch. 4. The categories stated in outline.

Ch. 5. Of Substance.
Primary and secondary substance defined. What is not primary substance is either asserted of or present in a primary substance. If primary substances did not exist, neither would anything else.
Of secondary substances species more truly substance than genus.
All species, not being genera, are substance in the same degree; so are all primary substances.
No secondary substance other than genus and species.
Primary substance related to secondary substance and all other predicates as secondary substance to all other predicates.
Neither primary nor secondary substances present in a subject.
Primary substance individual, secondary substance a qualification of the individual.
Substances have no contraries.
Substances never admit of degrees.
The characteristic peculiar to substance is that contrary qualities are predicatable of it.

Ch. 6. Of Quantity.
Quantity discrete or continuous.
The parts of some quantities have relative positions, while the parts of others have not.
Quantitative terms may be used of things other than quantity.
'Great,' 'small' and similar terms not quantitative but relative.
Quantities never admit of degrees.
The characteristic peculiar to quantity is that we predicate 'equal' and 'unequal' of it.

Ch. 7. Of Relation.
Preliminary definition.
Some relatives have contraries.
Some relatives admit of degrees.
Every relative has a correlative.
The relative must have its proper name; only so is the correlative evident. Necessity in certain cases for coining new names for the purpose.
Relatives usually come into being together.
Exceptions in the case of perception and knowledge.
Primary substance never relative, neither any part of such substance.
Corrected definition of relatives.
 Impossible to know that a thing is relative, unless its correlative is known.

Ch. 8. Of Quality.
Qualities defined.
Their kinds: (1) habits and dispositions, (2) capacities, (3) affective qualities and affections, (4) shape, figure and so on.
Most qualities have contraries.
If one of two contraries is a quality, so is the other.
Most qualities admit of degrees.
The characteristic peculiar to quality is that we predicate 'like' and 'unlike' in reference to it.

Ch. 9. Of the remaining categories.
Ch. 10. Of the four classes of opposites: (1) correlatives, (2) contraries, (3) positives and privatives, (4) affirmation and negation.

Ch. 11. Further discussion of contraries with special relation to good and evil.

Ch. 12. The five senses of 'prior.'
Ch. 13. The three senses of 'simultaneous.'
Ch. 14. The six kinds of motion.
Ch. 15. The various meanings of 'to have.'
ΑΡΙΣΤΟΤΕΛΟΥΣ
ΚΑΤΗΓΟΡΙΑΙ

1a 1. Ὅμώνυμα λέγεται ὃν ὄνομα μόνον κοινόν, ὁ
dὲ κατὰ τοῦνομα λόγος τῆς οὐσίας ἐτερος, οἰον
ζῷον ὁ τε ἀνθρωπος καὶ τὸ γεγραμμένον. τούτων
γὰρ ὄνομα μόνον κοινὸν, ὁ δὲ κατὰ τοῦνομα λόγος
τῆς οὐσίας ἐτερος· ἂν γὰρ τις ἀποδιδὼ τι ἐστιν
5 αὐτῶν ἐκατέρῳ τὸ ζῷῳ εἴναι, ιδιον ἐκατέρου λόγου
ἀποδώσει. συνώνυμα δὲ λέγεται ὃν τὸ τε ὄνομα
κοινὸν καὶ ὁ κατὰ τοῦνομα λόγος τῆς οὐσίας ὁ
αὐτός, οἰον ζῷον ὁ τε ἀνθρωπος καὶ ὁ βοῦς. ὁ
γὰρ ἀνθρωπος καὶ ὁ βοῦς κοινῷ ὀνόματι προσ-
αγορεύεται ζῷον, καὶ ὁ λόγος δὲ τῆς οὐσίας ὁ
10 αὐτός· ἓαν γὰρ ἀποδιδῷ τις τὸν ἑκατέρου λόγον,
tὶ ἐστὶν αὐτῶν ἐκατέρῳ τὸ ζῷῳ εἴναι, τὸν αὐτῶν
λόγον ἀποδώσει. παρώνυμα δὲ λέγεται ὅσα ἀπὸ
τινὸς διαφερόντα τῇ πτώσει τῆν κατὰ τοῦνομα

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a I retain the traditional renderings, 'univocal,' namely, and 'equivocal.' The ordinary reader, I suspect, will be little familiar with the former. He may, if he pleases, substitute such terms as 'ambiguous,' 'unambiguous.' 'Univocal' has the advantage of being a positive term.
b ζῷον in Greek had two meanings, that is to say, living
ARISTOTLE'S CATEGORIES

I. Things are equivocally named, when they have the name only in common, the definition (or statement of essence) corresponding with the name being different. For instance, while a man and a portrait can properly both be called 'animals,' these are equivocally named. For they have the name only in common, the definitions (or statements of essence) corresponding with the name being different. For if you are asked to define what the being an animal means in the case of the man and the portrait, you give in either case a definition appropriate to that case alone.

Things are univocally named, when not only they bear the same name but the name means the same in each case—has the same definition corresponding. Thus a man and an ox are called 'animals.' The name is the same in both cases; so also the statement of essence. For if you are asked what is meant by their both of them being called 'animals,' you give that particular name in both cases the same definition.

Things are 'derivatively' named that derive their own name from some other, that is given a new verbal creature, and, secondly, a figure or image in painting, embroidery, sculpture. We have no ambiguous noun. However, we use the word 'living' of portraits to mean 'true to life.'
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1a προσηγορίαν ἔχει, οἷον ἀπὸ τῆς γραμματικῆς οὔ
15 γραμματικὸς καὶ ἀπὸ τῆς ἀνδρείας ὁ ἀνδρεῖος.

II. Τῶν λεγομένων τὰ μὲν κατὰ συμπλοκὴν
λέγεται, τὰ δ᾽ ἀνευ συμπλοκῆς. τὰ μὲν οὖν κατὰ
συμπλοκὴν οἷον ἄνθρωπος τρέχει, ἄνθρωπος νικᾷ.
tὰ δ᾽ ἀνευ συμπλοκῆς οἷον ἄνθρωπος, βοῦς, τρέχει, νικᾷ.

20 Τῶν ὄντων τὰ μὲν καθ᾽ ὑποκειμένου τινὸς
λέγεται, ἐν ὑποκειμένῳ δὲ οὐδενὶ ἐστὶν, οἷον
ἄνθρωπος καθ᾽ ὑποκειμένου μὲν λέγεται τοῦ τινὸς
ἄνθρωπου, ἐν ὑποκειμένῳ δὲ οὐδενὶ ἐστὶν. τὰ δὲ
ἐν ὑποκειμένῳ μὲν ἐστὶ, καθ᾽ ὑποκειμένου δὲ
οὐδενὸς λέγεται (ἐν ὑποκειμένῳ δὲ λέγω, ὅ ἐν τινὶ
μὴ ὡς μέρος ὑπάρχων ἄδυνατον χωρίς εἶναι τοῦ
ἐν ὑπόκειμενος), οἷον ἡ τῆς γραμματικῆς ἐν ὑποκειμένῳ
μὲν ἐστὶ τῇ ψυχῇ, καθ᾽ ὑποκειμένου δὲ οὐδενὸς
λέγεται, καὶ τὸ τῇ λευκῇ ἐν ὑποκειμένῳ μὲν τῷ
σώματί ἐστιν (ἀπαν γὰρ χρῶμα ἐν σώματι), καθ᾽
ὑποκειμένου δὲ οὐδενὸς λέγεται: τὰ δὲ καθ᾽ ὑπο-

1b κειμένου τε λέγεται καὶ ἐν ὑποκειμένῳ ἐστὶν, οἷον
ἡ ἐπιστήμη ἐν ὑποκειμένῳ μὲν ἐστὶ τῇ ψυχῇ, καθ᾽
ὑποκειμένου δὲ λέγεται τῆς γραμματικῆς, τὰ δὲ
οὐτ᾽ ἐν ὑποκειμένῳ ἐστὶν οὔτε καθ᾽ ὑποκειμένου
τινὸς λέγεται, οἷον ὁ τῆς ἄνθρωπος καὶ ὁ τῆς ἰππος.
5 οὐδὲν γὰρ τῶν τοιούτων οὔτε ἐν ὑποκειμένῳ ἐστὶν
ουτὲ καθ᾽ ὑποκειμένου λέγεται. ἀπλῶς δὲ τὰ ἄτομα

1a 'Courageous man,' 'courage,' in Greek. But the
former obscures the real point by consisting of two words
in English. By 'a new verbal form' is intended a new
termination or inflexion.
form, as, for instance, 'grammariam from 'grammar,' from 'heroism,' 'hero,' and so on.a

II. We may or we may not combine what we call words, expressions and phrases. Combine them; you have propositions—for instance, 'man runs' or 'man wins'—while examples of uncombined forms are 'man,' 'ox,' 'runs' and 'wins' and the like.

But as for the things that are meant, when we thus speak of uncombined words, you can predicate some of a subject, but they never are present in one. You can predicate 'man,' for example, of this or that man as the subject, but man is not found in a subject. By 'in,' 'present,' 'found in a subject' I do not mean present or found as its parts are contained in a whole; I mean that it cannot exist as apart from the subject referred to. And then there is that class of things which are present or found in a subject, although they cannot be asserted of any known subject whatever. A piece of grammatical knowledge is there in the mind as a subject but cannot be predicated of any known subject whatever. Again, a particular whiteness is present or found in a body (all colour implies some such basis as what we intend by 'a body') but cannot itself be asserted of any known subject whatever. We find there are some things, moreover, not only affirmed of a subject but present also in a subject. Thus knowledge, for instance, while present in this or that mind as a subject, is also asserted of grammar. There is, finally, that class of things which can neither be found in a subject nor yet be asserted of one—this or that man or horse, for example. For nothing of that kind is in or is ever affirmed of a subject. More generally speaking, indeed, we can never affirm of a subject what is in its
καὶ ἐν ἄριθμῷ κατ᾽ οὐδενὸς ὑποκειμένου λέγεται, ἐν ύποκειμένῳ δὲ ἐνια οὐδὲν κωλύει εἶναι· ἥ γὰρ τις γραμματικὴ τῶν ἐν ύποκειμένῷ ἐστὶ.1

III. "Ὅταν ἑτερον καθ' ἑτερον καθήγορηται ὡς καθ᾽ ὑποκειμένου, οὐκαὶ κατὰ τοῦ καθήγορου τοῦ ύποκειμένου. οὐκοῦν καὶ κατὰ τοῦ ύποκειμένου ῥηθῆσαι, οἰον ἂνθρωπος κατὰ τοῦ τινὸς ἂνθρώπου καθήγορηται, το δε ζῷον κατὰ τοῦ ἂνθρώπου· οὐκοῦν καὶ κατὰ τοῦ τινὸς ἂνθρώπου καθήγορηται το ζῷον· ὁ γὰρ τις ἂνθρωπος καὶ ἂνθρωπός ἐστι καὶ ζῷον.

Τῶν ἑτερῶν γενῶν2 καὶ μή ὑπ᾽ ἄλληλα τεταγμένων ἑτερον τῷ εἰδει καὶ αἱ διαφοραὶ οὐ διείσθησαν· οὐ γὰρ διαφέρει ἡν ἑτερὴν ἡν τῷ δήποτοι εἶναι. το γὰρ ἂνθρωπος τῷ ζῷον καθήγορηται, ἡς οὐκαὶ τοῦ τινὸς ἂνθρώπου. οὐ πεζὸν καὶ τὸ δίπου καὶ τὸ πτηνὸν καὶ τοῦ ἂνθρώπου, διαφοραὶ δε οὐδεμία τούτων· οὐ γὰρ διαφέρει ἡν ἑτερήν ἡν τῷ δήποτοι εἶναι.

Τῶν δὲ γε ὑπ᾽ ἄλληλα γενῶν οὐδὲν κωλύει τὰς αὐτὰς διαφορὰς εἶναι· τὰ γὰρ ἑπάνω τῶν ὑπ᾽ ἄλληλα γενῶν καθήγορηται, ὥστε οὐκαὶ τοῦ καθήγορου μένου διαφοραί εἰσι, τοσαῦτα καὶ τοῦ ὑποκειμένου ἐσονται.

IV. Τῶν κατὰ μηδεμίαν συμπλοκὴν λεγομένων ἐκαστὸν ἦται οὐσίαν σημαίνει ἡ ποσὸν ἡ ποιῶν ἡ πρὸς τι ἡ ποιήσω ἡ κείσωθα ἡ ἔχεων ἡ ποιεῖν ἡ πρὸς τι.

1 Bekker reads τῶν εὐδεμενῶν μὲν ἐστι, καθ’ εὐδεμένου δε οὐδενὸς λέγεται. 2 τῶν ἑτερογενῶν B.

"Co-ordinate" is literally in Greek 'not arranged, the one under the other.' The differentia added to the genus constitutes what is known as the species. Supposing that
nature individual and also numerically one. Yet in some cases nothing prevents its being present or found in a subject. Thus a piece of grammatical knowledge is present, as we said, in a mind.

III. A word upon predicates here. When you predicate this thing or that of another thing as of a subject, the predicates then of the predicate will also hold good of the subject. We predicate 'man' of a man; so of 'man' do we predicate 'animal.' Therefore, of this or that man we can predicate 'animal' too. For a man is both 'animal' and 'man.'

When genera are co-ordinate and different, differentiae will differ in kind. Take the genera, animal and knowledge. 'Footed,' 'two-footed,' 'winged,' 'aquatic' are among the differentiae of animal. But none will be found to distinguish a particular species of knowledge. No species of knowledge will differ from another in being 'two-footed.'

Where the genera, however, are subordinate, nothing whatever prevents them from having the same differentiae. For we predicate the higher or larger of the smaller or subordinate class. The differentiae, then, of the predicate will also belong to the subject.

IV. Each uncombined word or expression means one of the following things:—what (or Substance), how large (that is, Quantity), what sort of thing (that is, Quality), related to what (or Relation), where (that is, Place), when (or Time), in what attitude (Posture, Position), how circumstanced (State or Condition), how active, what doing (or Action), how passive, 'building' is the genus and 'used for a dwelling' the difference, we then have the species called 'house.'
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Ὁ πάσχειν. ἔστι δὲ οὐσία μὲν ὡς τύπῳ εἰπεῖν οἶνον ἄνθρωπος, ἵππος· ποῦ δὲ οἶνον δύτην, γραμματικόν· πρὸς τι δὲ οἶνον διπλάσιον, ἡμισὺ, μεῖζον· ποῦ δὲ οἶνον ἄνω Λυκείῳ, ἐν ἀγοραῖο· ποῦ δὲ οἶνον τρίπηχυ, πέρυμνοι· ποῦ δὲ οἶνον ἄνακειται, κάθεται· ἵνα δὲ οἶνον ὑποδέδεται, ὑπισταῖ· ποιεῖν δὲ οἶνον τέμνει, καίει· πάσχειν δὲ οἶνον τέμνεται, καίεται.

"Εκαστὸν δὲ τῶν εἰρημένων αὐτὸ μὲν καθ' αὐτὸ
5 ἐν οὐδεμιᾷ καταφάσει λέγεται, τῇ δὲ πρὸς ἄλληλα
tοῦτων συμπλοκῆ κατάφασις η ἀπόφασις γίνεται.
ἀπασα γὰρ δοκεῖ καταφασις καὶ ἀπόφασις ὅτι
ἀλήθες ἢ ψεύδης εἰναι· τῶν δὲ κατὰ μηδεμίαν
συμπλοκην λεγομένων οὐδὲν οὔτε ἀληθὲς οὔτε
ψεύδος ἐστιν, οἶνον ἄνθρωπος, λευκόν, τρέχει, νικᾶ.

V. Οὐσία δὲ ἐστὶν ἡ κυριώτατά τα χαὶ πρώτως
καὶ μάλιστα λεγομένη, ἢ μὴτ καθ' ὑποκειμένου
tυνὸς λέγεται μήτ', ἐν ὑποκειμένῳ τυν ἐστιν, οἶνον
ὁ τὶς ἄνθρωπος ἡ ὁ τὶς ἵππος. δεύτερα δὲ οὐσίαι
λέγονται, ἐν οἷς εἰδεσιν αἱ πρώτως οὐσίαι λεγόμεναι
ὑπάρχουσι, ταύτα τε καὶ τὰ τῶν εἰδών τούτων
gένη, οἶνον ὁ τὶς ἄνθρωπος ἐν εἰδε μὲν ὑπάρχει
tῷ ἄνθρωπῳ, γένος δὲ τοῦ εἴδους ἐστὶ τῷ ζῷον·

1 η ἀποφάσει omitted after λέγεται.

I give here two versions of each category. The Greek
as a rule is more concrete than the customary English
translations. The reader may here be referred to Theodor
Comperz, Greek Thinkers (translated by G. G. Berry),
vol. iv. c. 4.

"Asserted of a subject" here refers to the relation
of universal to particular, "present in a subject" to that
of an attribute to its possessor" (W. D. Ross, Aristotle,
p. 29). The distinction is the same as that into essential and
what suffering (Affection). Examples, to speak but in outline, of Substance are 'man' and 'a horse,' of Quantity 'two cubits long,' 'three cubits in length' and the like, of Quality 'white' and 'grammatical.' Terms such as 'half,' 'double,' 'greater' are held to denote a Relation. 'In the market-place,' 'in the Lyceum' and similar phrases mean Place, while Time is intended by phrases like 'yesterday,' 'last year' and so on. 'Is lying' or 'sitting' means Posture, 'is shod' or 'is armed' means a State. 'Cuts' or 'burns,' again, indicates Action, 'is cut' or 'is burnt' an Affection.

Not one of these terms in itself will involve any positive statement. Affirmations, as also denials, can only arise when such terms are combined or united together. Each positive or negative statement must either be true or be false—that, at least, is allowed on all hands—but an uncombined word or expression (for instance, 'man,' 'white,' 'runs' or 'conquers') can neither be true nor be false.

V. Substance in the truest and strictest, the primary sense of that term, is that which is neither asserted of nor can be found in a subject. We take as examples of this a particular man or a horse. But we do speak of secondary substances—those within which, being species, the primary or first are included, and those within which, being genera, the species themselves are contained. For instance, a particular man we include in the species called 'man' and the species itself in its turn is included in the genus called accidental predicates. Aristotle undersubstance distinguishes, first of all, primary substance, that is to say, the individual (or this or that man, for example), and, secondly, secondary substances, that is, the species and genera in which the individuals are included
ἀνθρώπος καὶ τὸ ζῷον.

Φανερὸν δὲ ἐκ τῶν εἰρημένων ὅτι τῶν καθ᾽ ὑπο-
κειμένου λεγομένων ἀναγκαῖον καὶ τούνομα καὶ
tὸν λόγον κατηγορεῖσθαι τοῦ ὑποκειμένου, οἶον ὁ
ἀνθρωπὸς καθ᾽ ὑποκειμένου λέγεται τοῦ τινὸς
ἀνθρώπου, καὶ κατηγορεῖται γε τούνομα· τοῦ γὰρ
ἀνθρώπου τοῦ τινὸς ἀνθρώπου κατηγορῆσαις. καὶ
ὁ λόγος δὲ ὁ τοῦ ἀνθρώπου κατὰ τοῦ τινὸς ἀν-
θρώπου κατηγορηθῆσαι· ὁ γὰρ τοὺς ἀνθρώπους καὶ
ἀνθρωπός ἐστὶ καὶ ἴον. ὡςτε καὶ τούνομα καὶ
ὁ λόγος κατὰ τοῦ ὑποκειμένου κατηγορηθῆσαι·
Τῶν δὲ ἐν ὑποκειμένῳ διήνυσαμεν εἰςὶ μὲν τῶν
πλείστων οὔτε τοὔνομα οὔθ ὁ λόγος κατηγορεῖ-
tαι τοῦ ὑποκειμένου· ἐπ᾽ ἐνίων δὲ τούνομα μὲν
οὐδὲν κωλύει κατηγορεῖσθαι ποτὲ τοῦ ὑποκει-
μένου, τὸν δὲ λόγον ἀδύνατον, οἶον τὸ λευκὸν ἐν
ὑποκειμένῳ διὰ τοῦ σώματος κατηγορεῖται τοῦ ὑπο-
κειμένου (λευκὸν γὰρ σώμα λέγεται), ὁ δὲ λόγος
ὁ τοῦ λευκοῦ οὐδέποτε κατὰ σώματος κατηγορη-
θῆσαι.

Τὰ δὲ ἄλλα πάντα ἦτοι καθ᾽ ὑποκειμένων λέ-
γεται τῶν πρῶτων οὐσιῶν ἐν ὑποκειμένως
αὐτάς ἐστίν. τούτο δὲ φανερὸν ἐκ τῶν καθ᾽
ἐκαστὰ προχειριζομένων, οἶον τὸ ζῷον κατὰ τοῦ
ἀνθρώπου κατηγορεῖται· οὐκοῦν καὶ κατὰ τοῦ
τινὸς ἀνθρώπου κατηγορηθῆσαι τὸ ζῷον· εἰ γὰρ
ἱ ἑκάτερος τῶν τινῶν ἀνθρώπων, οὐδὲ κατὰ

* Understand by 'the name' here τὸ λευκὸν, and not
the Greek substantive λευκότης; both of them
signified 'whiteness.' So also we use 'white' in English as an
CATEGORIES, v

'animal.' These, then, are secondary substances, that is to say, man and animal—otherwise, species and genus.

From what we have said it is plain that the name and definition of the predicates can both be affirmed of the subject. For instance, we predicate 'man' of an individual man as the subject. The name of the species called 'man' is asserted of each individual; you predicate 'man' of a man. The definition or meaning of 'man' will apply to a man, in like manner, for a man is both man and an animal. The name and definition of the species will thus both apply to the subject.

When we come, on the contrary, to things which are present or found in a subject, we find that their names and definitions we cannot, at least in most cases, affirm or predicate of that subject. Indeed, the definition itself will in no case whatever apply. But in some cases nothing prevents us from using the name of the subject. Suppose we take 'white' as an instance. Now 'white' is, no doubt, in a body and thus is affirmed of a body, for a body, of course, is called 'white.' The definition, however, of 'white' —of the colour, that is, we call 'white'—can never be predicated of any such body whatever.

Everything else but first substance is either affirmed of first substance or present in such as its subject. This is evident from particular instances taken by way of examples. We predicate 'animal' of 'man.' So we predicate 'animal' also of any particular man. Were there no individuals existing of whom it could thus be affirmed, it could adjective, commonly speaking, but also at times as a noun, when it means 'a white paint' or 'white colour.'
"ΑΡΙΣΤΟΤΗΛΕ"  

2 b  


Τῶν δὲ δευτέρων ὅσιῶν μᾶλλον ὅσια τὸ ἐνδος τοῦ γένους. ἐγγικον γὰρ τὴς πρώτῃ ὅσιας ἐστίν. ἐὰν γὰρ ἀποδιδῷ τις τὴν πρώτην ὅσιαν τι ἐστιν, γνωριμώτερον καὶ οἰκειότερον ἀποδώσει τὸ ἐνδος 10 ἀποδιδοὺς ἕπερ τὸ γένος, οἶον τὸν τυίν ἄνθρωπον ἀποδιδοὺς γνωριμώτερον ἀπὸ ἀποδοῖη ἄνθρωπον ἢ ἐφιοῦ ἀποδιδοὺς. τὸ μὲν γὰρ ἰδιον μᾶλλον τοῦ τυίν ἄνθρωπον, τὸ δὲ κοινότερον. καὶ τὸ τὶ δάνδρον ἀποδιδοὺς γνωριμώτερον ἀποδώσει δένδρον ἀπο- 15 διδοὺς ἢ φυτῶν.  

"Ετι αἱ πρώται ὅσιαι διὰ τὸ τοὺς ἄλλους ἀπασω ὑποκείσθαι καὶ πάντα τὰ ἄλλα κατὰ τούτων κατηγορεῖσθαι ἢ ἐν αὐταῖς εἶναι διὰ τοῦτο μάλιστα ὅσιαι λέγονται. ὡστε γε αἱ πρώται ὅσιαι πρὸς τὰ ἄλλα πάντα ἔχουσιν, οὐτω καὶ τὸ ἐνδος πρὸς τὸ γένος ἐξεῖν, ὑποκειται γὰρ τὸ ἐνδος τῷ γένει.  

τὰ μὲν γὰρ γένη κατὰ τῶν ἐνδῶν κατηγορεῖται, τὰ δὲ εἰδή κατὰ τῶν γενῶν οὐκ ἀντιστρέφει. ὡστε καὶ ἐκ τούτων τὸ ἐνδος τοῦ γένους μᾶλλον ὅσια.
not be affirmed of the species. Colour, again, is in body; so also in this or that body. For were there no bodies existing wherein it could also exist, it could not be in body at all. In fine, then, all things whatsoever, save what we call primary substances, are predicates of primary substances or present in such as their subjects. And were there no primary substance, nought else could so much as exist.

Of secondary substances species is better called substance than genus: it is nearer to primary substance, while genus is more removed from it. Suppose someone asks you 'what is it?' regarding a primary substance. Your answer is both more instructive and also more apt to the subject, provided you mention its species than if you should mention its genus. Take this or that man, for example. You would give a more instructive account, if you stated the species or 'man,' than you would, if you called him 'an animal.' The former belongs the more to him, the latter is somewhat too wide. Or, again, take an individual tree. By mentioning the species or 'tree' you will give a more instructive account than by giving the genus or 'plant.'

Moreover, the primary substances most of all merit that name, since they underlie all other things, which in turn will be either their predicates or present in such as their subjects. But exactly as primary substances stand to all else that exists, so also stands species to genus. Species is related to genus as subject is related to predicate. We predicate genus of species; but never, indeed, can we predicate species of genus conversely. On this further ground we may hold that of secondary substances species is more truly substance than genus.
Ἀύτῶν δὲ τῶν εἰδῶν ὡσα μὴ ἐστι γένη, οὐδὲν μᾶλλον ἐτερον ὦσια ἐστὶν: οὐδὲν γὰρ οἰκείοτερον ἀποδώσεις κατὰ τοῦ τυχὸς ἄνθρωπον τὸν ἄνθρωπον ἀποδιδοὺς η ἐκ τοῦ τυχὸς ἕππου τὸν ἕππου. ὡσαύτως δὲ καὶ τῶν πρώτων ὦσιῶν οὐδὲν μᾶλλον ἐτερον ὦσια ἐστὶν: οὐδὲν γὰρ μᾶλλον ὡς τοι ἄνθρωπος ὦσια ἐκ τοῖς βοῦς.

Εἰκότως δὲ μετὰ τὰς πρώτας ὦσιας μόνα τῶν ἀλλῶν τὰ εἶδη καὶ τὰ γένη δεύτερα ὦσια ἐλέγονται: μόνα γὰρ δηλοὶ τὴν πρῶτην ὦσιαν τῶν κατηγορομένων. τὸν γὰρ τῶν ἄνθρωπον ἐὰν ἀποδιδόῃς τις τι ἐστι, τὸ μὲν εἰδὸς ἡ τὸ γένος ἀποδίδοις οἰκείως ἀποδώσεις καὶ γνωρίματον ποιήσῃ ἄνθρωπον ἡ ἐκ τοῦ ἄλλου ἀποδιδός: τῶν δὲ ἄλλων ὡς εἰκότως τῶν ἀλλῶν τὰ ταῦτα μόνα ὦσιαι λέγονται.

"Ετι αἱ πρώται ὦσιαι διὰ τὸ τοῖς ἀλλοις ἀπασω ὑποκείσθαι κυριώτατα ὦσιαι λέγονται. ώς δὲ γε αἱ πρώται ὦσιαι πρὸς τὰ ἄλλα πάντα ἔχονσιν, οὕτω τὰ εἶδη καὶ τὰ γένη τῶν πρώτων ὦσιῶν πρὸς τὰ λοιπὰ πάντα ἔχει: κατὰ τούτων γὰρ πάντα τὰ λοιπὰ κατηγορεῖται. τὸν γὰρ τῶν ἄνθρωπον ἐρεῖς γραμματικοὶ: οὐκοῦν καὶ ἄνθρωπον καὶ ἐκ τοῦ ἄλλου γραμματικὸν ἐρεῖς. ὡσαύτως δὲ καὶ ἐπὶ τῶν ἀλλῶν.

Κοινὸν δὲ κατὰ πάσης ὦσίας τὸ μὴ ἐν ὑποκείμενῳ εἶναι. ἡ μὲν γὰρ πρώτῃ ὦσιᾷ οὕτε ἐν
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If we turn to the species themselves, none, unless it is also a genus, is more of a substance than another. No apter description is ‘man’ of a concrete or individual man than is ‘horse’ of a concrete horse. So also of primary substances—none is more a substance than others. For this or that man, for example, could not well be more truly substance than, let us say, this or that ox.

Apart, then, from primary substances, species and genus alone of the things that will then remain over are rightly called secondary substance, for they of all possible predicates alone define primary substance. For only by species or genus can this or that man be defined in a fit or appropriate way; and we make our definition preciser by stating the species or ‘man’ than by stating the genus or ‘animal.’ Anything else we might state, as, for instance, ‘he runs’ or ‘is white,’ would be foreign from the purpose in hand. So species and genera only are rightly designated as substance, first substances only excepted.

‘Substance,’ again, strictly speaking, applies to first substances only, because they not only underlie but provide all things else with their subjects. Exactly as primary substance is related to all else whatever, so also are genus and species, in which is included that substance, related to all attributes not included in genus and species. For these are the subjects of such. You may call a man ‘learned in grammar.’ And, therefore, his species and genus, that is to say, man and animal, you may also call ‘learned in grammar.’ And this will be so in all cases.

That it never is present in a subject holds good of all substance whatever. For what we call primary
ΑΡΙΣΤΟΤΛΗ

3α ὑποκειμένῳ ἐστὶν οὔτε καθ᾽ ὑποκειμένου λέγεται·
tῶν δὲ δευτέρων οὐσιῶν φανερὸν μὲν καὶ οὔτως
10 ὁτι οὐκ εἰσὶν ἐν ὑποκειμένῳ. ὁ γὰρ ἄνθρωπος
καθ᾽ ὑποκειμένου μὲν τοῦ τινὸς ἄνθρωπον λέγεται,
ἐν ὑποκειμένῳ δὲ οὐκ ἐστιν· οὐ γὰρ ἐν τῷ τῶν
ἀνθρώπων ὁ ἄνθρωπος ἐστιν. ἤσαυτὸς δὲ καὶ τὸ
ζῷον καθ᾽ ὑποκειμένου μὲν λέγεται τοῦ τινὸς
ἀνθρώπου, οὐκ ἐστι δὲ τὸ ζῷον ἐν τῷ τῶν ἄν-
θρώπων. ἔτι δὲ τῶν ἐν ὑποκειμένῳ ἄντων τὸ μὲν
ὄνομα οὐδὲν κωλύει κατηγορεῖσθαι ποτε τοῦ ὑπο-
κειμένου, τὸν δὲ λόγον ἄδυνατον. τῶν δὲ
dευτέρων οὐσιῶν κατηγορεῖται καὶ ὁ λόγος κατὰ
tοῦ ὑποκειμένου καὶ τούνομα· τὸν γὰρ τοῦ ἄνθρωπον
lόγον κατὰ τοῦ τινὸς ἄνθρωπον κατηγορήσεις, καὶ τὸ
15 τοῦ ζῴου ὁσσαυτῶς. ἢστε οὐκ ἂν εἰη ἡ ὀνοσία
tῶν ἐν ὑποκειμένῳ.

Ὅτι οἶδον δὲ τούτο τῆς οὐσίας, ἀλλὰ καὶ ἡ
dιαφορὰ τῶν οὐσίων ἐς τίνα. τὸ γὰρ
πεζὸν καὶ τὸ δίπου καθ᾽ ὑποκειμένου μὲν λέγεται
tοῦ ἄνθρωπον, ἐν ὑποκειμένῳ δὲ οὐκ ἐστιν· οὐ γὰρ
ἐν τῷ ἄνθρωπῳ ἐστι τὸ δίπου ἢ τὸ πεζόν. καὶ
20 ὁ λόγος δὲ κατηγορεῖται ὁ τῆς διαφορᾶς, καθ᾽ οὗ
ἀν λέγηται ἡ διαφορά, οἷον εἰ τὸ πεζὸν κατὰ τοῦ
ἀνθρώπου λέγεται, καὶ ὁ λόγος ὁ τοῦ πεζοῦ κατ-
ηγορηθήσεται τοῦ ἄνθρωπον· πεζὸν γὰρ ἐστιν ὁ
ἀνθρώπος.

Μὴ ταραττέω δὲ ημᾶς τὰ μέρη τῶν οὐσίων ὡς
ἐν ὑποκειμένωι οὖν τὸις ὁλοις, μὴ ποτε ἀναγκασ-
25 θῶμεν οὐκ οὐσίας αὑτὰ φάσκειν εἶναι· οὐ γὰρ οὗτος
τὰ ἐν ὑποκειμένῳ ἐλέγετο τὰ ὡς μέρη ὑπάρχοντα
ἐν τινί.
substance can neither be present in a subject nor yet predicated of one. And as for the secondary substance, the following points, among others, will prove it is not in a subject. We predicate 'man' of a man; 'man,' however, is not in a subject. For manhood is not in a man. As the species, so also the genus. For 'animal' is also asserted of this or that man in particular but cannot be found present in him. Again, we may notice this point. When a thing can be found in a subject, then nothing prevents us from using its name of the subject in question; not so the definition, however. And yet of a secondary substance both name and definition hold good in the case of the subject as well. The definition of the species (or man) and that of the genus (or animal) are used of an individual man. Therefore, substance is not in a subject.

That they cannot be present in subjects is true not of substances only but holds of differentiae, too. Thus we can of the species called 'man' assert 'going on foot' and 'two-footed.' But these are not found present in it. For neither of these is in man. Where, again, you affirm the differentia, you also affirm its definition. Suppose of the species called 'man' you should predicate 'going on foot.' The definition also of that attribute then will apply to that species. For 'man' does, indeed, go on foot.

That the parts of the substances are present or found in the wholes as in subjects is a fact that need hardly disturb us or render us fearful of having to brand all such parts as no substances. Did we not qualify 'present in a subject' by 'not as the parts in a whole'? a

* See the definition, 1 a 24.
ἈΡΙΣΤΟΤΛΕ

3 a 'Ὑπάρχει δὲ ταῖς οὐσίαις καὶ ταῖς διαφοραῖς τὸ πάντα συνωνύμως ἀπ’ αὐτῶν λέγεσθαι. πάσαι γὰρ
35 αἱ ἀπ’ αὐτῶν κατηγορίαι ἦτοι κατὰ τῶν ἀτόμων κατηγοροῦνται ἣ κατὰ τῶν εἴδων. ἀπὸ μὲν γὰρ
tῆς πρώτης οὐσίας οὐδεμία ἐστὶ κατηγορία: κατ’
οὔδενος γὰρ ὑποκειμένου λέγεται τῶν ὁ δὲ δευτέρων
οὕσων τὸ μὲν εἶδος κατὰ τὸν ἀτόμον κατηγο-
ρεῖται, τὸ δὲ γένος καὶ κατὰ τοῦ εἴδους καὶ κατὰ
3 b τοῦ ἀτόμου. ὁσαύτως δὲ καὶ αἱ διαφοραὶ κατὰ
τῶν εἴδων καὶ κατὰ τῶν ἀτόμων κατηγοροῦνται.
καὶ τὸν λόγον δὲ ἐπιδέχονται αἱ πρῶται οὐσίαι
tὸν τῶν εἴδων καὶ τὸν τῶν γενῶν, καὶ τὸ εἶδος δὲ
tὸν τοῦ γένους: ὅσα γὰρ κατὰ τοῦ κατηγοροῦμενο
λέγεται, πάντα καὶ κατὰ τοῦ ὑποκειμένου ῥηθή-
σεται. ὁσαύτως δὲ καὶ τὸν τῶν διαφορῶν λόγον
ἐπιδέχεται τὰ εἴδη καὶ τὰ ἀτόμα. συνώνυμα δὲ
γε ἣν ὥν καὶ τούνομα κοινὸν καὶ ὁ λόγος ὁ αὐτός,
ὡστε πάντα τὰ ἀπὸ τῶν οὐσιῶν καὶ τὰ ἀπὸ τῶν
diaφορῶν συνωνύμως λέγεται.

10 Πάσα δὲ οὐσία δοκεῖ τόδε τί σημαίνειν. ἐπὶ
μὲν οὖν τῶν πρῶτων οὐσιῶν ἀναμφιβολῶν καὶ
ἀληθές ἐστιν ὅτι τόδε τί σημαίνει: ἀτόμον γὰρ καὶ
ἐν ἀριθμῷ τὸ δηλούμενον ἐστιν: ἐπὶ δὲ τῶν δευ-
tέρων οὐσιῶν φαίνεται μὲν ἕν ὁμοίως τῷ σχῆματι

15 τῆς προσηγορίας τόδε τί σημαίνει, ὅταν εἰς ἄνθρω-
πον ἡ ζώον, οὐ μὴν ἀληθές γε, ἀλλὰ μᾶλλον
τοῖς τι σημαίνει: οὐ γὰρ ἐν ἐστὶ τὸ ὑποκειμένο
ὡς τῇ πρώτῃ οὐσίᾳ, ἀλλὰ κατὰ πολλῶν ὁ
ἄνθρωπος λέγεται καὶ τὸ ζώον. οὐχ ἀπλῶς δὲ
ποιῶν τι σημαίνει, ὡς ὁ λέοντος. οὔτε γὰρ
20 ἀλλο σημαίνει τὸ λευκὸν ἄλλος ἡ ποιῶν. τὸ δὲ εἶδος
Differentia and substance alike have this characteristic in common, that, wherever we predicate them, we predicate them univocally. For such propositions have always individuals or species for subjects. The primary substance, no doubt, being never predicated of anything, never itself can be predicate of any proposition whatever. Not so with the secondary substance. The species is predicated of all individual examples, the genus of these and the species. And so with differentiae also. Of species and individuals we predicate these in like manner. Both definitions, moreover, or those of the genus and species, apply to the primary substance and that of the genus to the species. For all we affirm of the predicate will also be affirmed of the subject. The definition of each differentia applies in a similar manner to both individuals and species. But, as we have already noticed, univocal is used of such things as not only possess the same name but are also defined the same way. Hence it follows that in all propositions having substance or difference for predicate that predicate is quite unequivocal.

All substance appears individual. And this is indisputably true in the case of the primary substances. What each denotes is a unit. In that of the secondary substances language may make it appear so, as when we say 'animal,' 'man.' This, however, is not really so, for a quality rather is meant. Second substance is not one and single, as, no doubt, the primary is; not of one but of many, indeed, do we predicate 'animal,' 'man.' Species and genus, however, do not merely indicate quality, as 'white' merely indicates quality. Accidents, that is, like 'white,' mean a quality simply and merely. But species
καὶ τὸ γένος περὶ οὐσίαν τὸ ποιὸν ἀφορίζει τοιάν γάρ τινα οὐσίαν ονειαίει. ἐπὶ πλείων δὲ τῷ γάρ ἦ τῷ εἴδει τὸν ἀφορισμὸν ποιεῖται ὁ γάρ ζῷον εἰπὼν ἐπὶ πλείων περιλαμβάνει ἢ ὁ τὸν ἀνθρώπον.

25 Τούρχει δὲ ταῖς οὐσίαις καὶ τὸ μηδὲν αὐταῖς ἐναντίον εἶναι. τῇ γάρ πρώτη οὐσία τί ἢ εἰ δὲ ἐναντίον, οἰον τῷ τινι ἀνθρώπῳ ἢ τῷ τινι ζῷω; οὐδὲν γάρ ἐστιν ἐναντίον. οὐδὲ γε τῷ ἀνθρώπῳ ἢ τῷ ζῷω οὐδὲν ἐστιν ἐναντίον. οὐκ ἰδον δὲ τοῦτο τῆς οὐσίας, ἀλλὰ καὶ ἐπὶ ἀλλων πολλῶν, οἰον ἐπὶ του ποσοῦ τῷ γάρ διαηθεὶς ἢ τριπθεὶς

30 οὐδέν ἐστιν ἐναντίον, οὐδέ γε τοῖς δέκα, οὐδὲ τῶν τουτῶν οὐδενί, εἰ μή τις τὸ πολὺ τῷ ὀλίγῳ φαίνῃ ἐναντίον εἶναι ἢ το μέγα τῷ μικρῷ. τῶν δὲ ἀφωρισμένων ποσῶν οὐδὲν οὐδενί ἐναντίον ἐστιν.

Δοκεῖ δὲ ἡ οὐσία μὴ ἐπιδέχεσθαι τὸ μᾶλλον καὶ τὸ ἦττον. λέγω δὲ οὐχ ὅτι οὐσία οὐσίας οὐκ ἐστι μᾶλλον οὐσία καὶ ἦττον οὐσία (τοῦτο μὲν γάρ εἰρηται ὅτι ἐστιν), ἀλλ' ὅτι ἐκάστη οὐσία τοῦτον ὄπερ ἐστιν, οὐ λέγεται μᾶλλον καὶ ἦττον. οἰον εἰ ἐστιν αὐτὴ ἡ οὐσία ἀνθρώπως, οὐκ ἐστι μᾶλλον καὶ ἦττον ἀνθρώπος, οὐτε αὐτοῦ οὐτε ἐνεργεί-η ἐτέρου οὐ γάρ ἐστιν ἐτέρου ἐτέρου μᾶλλον ἀνθρώπος, οὐτε αὐτοῦ οὐτε ἐτέρου ἐτέρου μᾶλλον ἀνθρώπος, ἢ ἠττον ἰεντον λευκόν, καὶ καλὸν ἰεντον ἰεντον μᾶλλον καλὸν καὶ ἦττον λέγεται. καὶ αὐτὸ δὲ αὐτοῦ μᾶλλον καὶ ἦττον λέγεται, οἰον τὸ σώμα λευκὸν ὃν μᾶλλον λευκὸν εἶναι λέγεται νῦν ἢ πρότερον, καὶ θερμὸν ὃν μᾶλλον θερμὸν καὶ ἦττον λέγεται. ἢ δὲ γε οὐσία οὐδὲν μᾶλλον καὶ ἦττον

1 αὐτὴ π. B.
and genus determine a quality in reference to substance. They tell you *what sort* of a substance. In the case of the genus, however, such determining qualification will cover a much wider field than it does in the case of the species. Say 'animal'; you comprehend more than you would, if instead you said 'man.'

Substances never have contraries. How could first substances have them—this man, for example, that animal? Nothing is contrary to them. And species and genus have none. This particular characteristic belongs not to substance alone. For it holds of a good many things and, among them, for instance, of quantity. 'Two cubits long' has no contrary; neither has 'three cubits long'; nor has 'ten' nor yet anything like it, unless, indeed, someone should say 'large' and 'small,' 'much' and 'little' are contraries. Definite quantities, however, can certainly never have contraries.

No substance, it seems, has degrees or admits of a more and a less. I do not mean here that one substance may not be more truly called substance, less truly called substance, than others; indeed, we have said that it may. But I mean that no substance as such can admit of degrees in itself. For example, the same substance, man, cannot really be more or less man as compared with himself or another. This man is not *more* man than that, as one white thing is more or less white than another white object may be or, again, as one beautiful object has more or less beauty than others. The same quality in the same object may vary at times in degree. For example, a body, if white, is called whiter just now than it was or, if warm, is called more or less warm. But a substance is not more or less of whatever, *qua*
λέγεται: οὔδὲ γὰρ ἀνθρωπὸς μᾶλλον νῦν ἀνθρωπὸς ἢ πρότερον λέγεται, οὔδὲ γε τῶν ἄλλων οὔδεν, ὡσα ἐστίν οὐσίαι. ὡστε οὐκ ἂν ἐπιδεχοίτο ἡ οὔσια τὸ μᾶλλον καὶ ἤττον.

10 Μάλιστα δὲ ἴδιον τῆς οὐσίας δοκεῖ εἶναι τὸ ταύτων καὶ ἐν ἀριθμῷ ὃν τῶν ἐναντίων εἶναι δεκτικόν, οἷον ἔπι μὲν τῶν ἄλλων οὐκ ἂν ἔχοι τις τὸ τουοὺτο προενεγκεῖν, ὡσα μὴ εἰσὶν οὐσίαι, ὃ ἐν ἀριθμῷ ὃν τῶν ἐναντίων δεκτικῶν ἐστίν, οἷον τὸ χρῶμα, ὃ ἐστὶν ἐν καὶ ταύτων τῷ ἀριθμῶ, οὐκ ἐσται λευκὸν καὶ μέλαν, οὔδ’ ἡ αὐτὴ πράξις καὶ μία τῷ ἀριθμῷ οὐκ ἐσται φαύλη καὶ σπουδαία. ὡσαύτως δὲ καὶ ἐπὶ τῶν ἄλλων, ὡσα μὴ εἰσὶν οὐσίαι. ἦ ἔπι πούς έπὶ καὶ ταύτων ἀριθμῶ ὃν δεκτικόν τῶν ἐναντίων ἐστίν, οἷον τὸ τοιοῦτο προενεγκεῖν, ὅσα μή εἰσὶν εἶναι δεκτικά. ὡσαύτως δὲ καὶ ἐπὶ τῶν, ὅσα εἰσὶν οὐσίαι. ἡ δὲ γε οὐσία ἐν καὶ ταύτων ἀριθμῶ ὃν δεκτικόν τῶν ἐναντίων ἐστίν, οἷον τὸ τοιοῦτον, εἰ μὴ εἰσὶν ἐν καὶ ταύτων ἀριθμῶ ὃν δεκτικόν τῶν ἐναντίων ἐστίν, οἷον τὸ τοιοῦτον, εἰ μὴ εἰσὶν ἐν καὶ ταύτων ἀριθμῶ ὃν δεκτικόν τῶν ἐναντίων ἐστίν, οἷον τὸ τοιοῦτον, εἰ μὴ εἰσὶν εἶναι δεκτικά. ὡσαύτως δὲ καὶ ἐπὶ τῶν ἄλλων οὐδενὸς φαίνεται τὸ τουοὺτον, εἰ μὴ εἰσὶν εἶναι δεκτικά. ὡσαύτως δὲ καὶ ἐπὶ τῶν ἄλλων οὐδενὸς φαίνεται τὸ τουοὺτον, εἰ μὴ εἰσὶν εἶναι δεκτικά. ὡσαύτως δὲ καὶ ἐπὶ τῶν ἄλλων οὐδενὸς φαίνεται τὸ τουοὺτον, εἰ μὴ εἰσὶν εἶναι δεκτικά.
substance, it is. For a man is not more of a man than he was at some time in the past. And so of all substances else. Therefore, substance can have no degrees.

But what is most characteristic of substance appears to be this: that, although it remains, notwithstanding, numerically one and the same, it is capable of being the recipient of contrary qualifications. Of things that are other than substance we could hardly adduce an example possessed of this characteristic. For instance, a particular colour, numerically one and the same, can in no wise be both black and white, and an action, if one and the same, can in no wise be both good and bad. So of everything other than substance. But substance, remaining the same, yet admits of such contrary qualities. One and the same individual at one time is white, warm or good, at another time black, cold or bad. This is not so with anything else, though it might be maintained that assertions or opinions admitted of contraries. That is to say, the same statement may appear to be both true and false. ‘He sits’ may, for instance, be true. If he rises, it then becomes false. And so with opinions as well. One may be of opinion, and truly, that such or such person is sitting. And yet, when that person has risen, that opinion, if held still, is false. Even though we allow this exception, it would differ, in fact, from the rest in its manner of coming about. For whenever a substance admits of such contrary qualifications, it is by a change in itself. It is by a change in itself that a thing that was hot becomes cold (having passed from one state to another) or a thing that was white becomes black or a thing that was good becomes bad.
ἐκ φαύλου. ὡσαύτως δὲ καὶ ἐπὶ τῶν ἄλλων ἐκαστον αὐτῶν μεταβολήν δεχόμενον τῶν ἐναντίων δεκτικόν ἐστιν. ὁ δὲ λόγος καὶ ἡ δόξα αὐτὰ μὲν ἀκίνητα πάντη πάντως διαμένει, τοῦ δὲ πράγματος κινουμένου τὸ ἐναντίον περὶ αὐτὰ γίνεται. ὁ μὲν γὰρ λόγος διαμένει ὁ αὐτὸς τὸ καθὼς τοῦ διαμένει, τοῦ δὲ καὶ ἐπὶ τῆς ἑαυτῆς μεταβολῆς δέχεται. ὡσαύτως δὲ καὶ ἐπὶ τῆς δόξης. ὡστε τῷ τρόπῳ γε ᾧ τὸν ἀληθὲς τῶν ἐναντίων τὸ κατὰ τὴν ἑαυτῆς μεταβολὴν δεκτικὴν τῶν ἐναντίων εἶναι.

Εἰ δὴ τοις καὶ ταῦτα παραδέχομεν, τὸν λόγον καὶ τὴν δόξαν δεκτικὰ τῶν ἐναντίων εἶναι, οὐκ ἔστω ἀληθῆς τότῳ. ὁ γὰρ λόγος καὶ ἡ δόξα οὐ τῷ αὐτὰ δέχεσθαι τι τῶν ἐναντίων εἶναι δεκτικὰ λέγεται, ἀλλὰ τῷ περὶ ἐπερόν τι τὸ πάθος γεγενθαί. τῷ γὰρ τὸ πράγμα εἶναι ἡ μὴ εἶναι τοῦτω καὶ ὁ λόγος ἀληθὴς ἡ ψευδὴς εἶναι λέγεται. οὐ τῷ αὐτὸς δεκτικὸς εἶναι τῶν ἐναντίων. αὐτὸς γὰρ οὔθεν ὑπ' οὔθεν οὔτε ὁ λόγος κυμάτων οὔτε ἡ δόξα, ὡστε οὐκ ἂν εἰ ἐκ τῶν ἐναντίων μηδενὸς ἐν αὐτῶις γενόμενον πάθους. ἡ δὲ γε ὅτῳ οὐσία τῷ αὐτῇ τὰ ἐναντία δεχεσθαι, τοῦτω δεκτική τῶν ἐναντίων εἶναι λέγεται. νόσου γὰρ καὶ ψευδών δέχεται, καὶ λευκότητα καὶ μελανίαν καὶ ἐκαστον τῶν τοιούτων αὐτῇ δεχομένη τῶν ἐναντίων εἶναι δεκτική λέγεται. ὡστε ὅτι εἴ ὀυσίας εἰ ἦ το ταύτῃ καὶ ἐν ἀρίθμῳ δὲν δεκτικὸν εἶναι τῶν ἐναντίων κατὰ τὴν ἑαυτῆς μεταβολὴν. περὶ μὲν οὖν οὐσίας τοσαῦτα εἰρήσθω.

VI. Τοῦ δὲ ποσοῦ τὸ μὲν ἔστι διωρισμένον, τὸ
And so, too, in all other cases where substance admits of such qualities. The statement or opinion, however, remains in itself quite unaltered in any and every respect. If it takes on the contrary quality, being now true and now false, then the facts of the case will have changed. For the statement 'he sits' is unchanged; but according to existing conditions we call it now true and now false. As with statements, so, too, with opinions. In its manner, then, of coming about it is really peculiar to substance to admit of the contrary qualities—to wit, by a change in itself.

If a man, then, should make an exception in favour of opinions and statements, maintaining that these admit also of contrary qualifications, his view would, in truth, be unsound. If opinions and statements are said to admit of such qualifications, the fact is that not they themselves but that something else undergoes change. For it is by the facts of the case, by their being or not being so, that a statement is called true or false. It is not that the statement itself can admit of such contrary qualities. For nothing, in one word, can alter the nature of opinions and statements, and, seeing no change occurs in them, they cannot admit of such contraries. But substance admits of such contraries by having received them itself: it alternately takes to itself health, disease, whiteness, blackness, the like. By receiving them into itself is it said to admit of such contraries. So, to conclude, we may call this above all distinctive of substance, that, remaining still one and the same, it may yet through a change in itself receive contrary qualifications. Let so much on substance suffice.

VI. To quantity let us turn next. This is either
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δὲ συνεχὲς, καὶ τὸ μὲν ἐκ θέσιν ἐχόντων πρὸς ἀλληλα τῶν ἐν αὐτοῖς μορίων συνέστηκα, τὸ δὲ οὐκ ἐξ ἐχόντων θέσιν. ἔστι δὲ διωρισμένον μὲν οἶον ἄριθμὸς καὶ λόγος, συνεχὲς δὲ οἶον γραμμὴ.

28 ἔπιφανεία, σῶμα, ἐτὶ δὲ παρὰ ταῦτα χρόνος καὶ τόπος. τῶν μὲν γὰρ τοῦ ἄριθμοῦ μορίων οὐδεῖς ἐστὶ κοινὸς ὁρος, πρὸς δὲ συνάπτει τὰ μόρια αὐτοῦ, οἶον τὰ πέντε εἰ ἐστὶ τῶν δέκα μορίων, πρὸς οὐδένα κοινὸν ὁρον συνάπτει τὰ πέντε καὶ τὰ πέντε, ἀλλὰ διωρίσται καὶ τὰ τρία, γε καὶ τὰ ἕπτα πρὸς οὐδένα κοινὸν ὁρον συνάπτει. οὐδὲ διωρίσται ωσαύτως ἂν ἔχοις ἐπ᾽ ἀριθμοῦ κοινὸν ὁρον λαβεῖν τῶν μορίων, ἀλλ' ἤει διωρίσται ωστε ὁ μὲν ἄριθμος τῶν διωρισμένων ἐστίν. ἔστι δὲ καὶ ὁ λόγος τῶν διωρισμένων ἐστίν. οἴ οἱ μὲν γὰρ ποσῶν ἔστιν ὁ λόγος, φανερῶς καταμετρεῖται γὰρ συλλαβὴ.

30 ὡσαύτως δὲ καὶ τῶν διωρισμένων ἐστίν. ὅτι μὲν γὰρ gravis ἐστιν λόγος, φανερῶς καταμετρεῖται γὰρ συλλαβή.

βραχεία καὶ μακρὰ. λέγω δὲ αὐτῶν τὸν μετὰ φωνῆς λόγον γιγνόμενον. πρὸς οὐδένα γὰρ κοινὸν ὁρον αὐτοῦ τὰ μόρια συνάπτει. οὐ γὰρ ἐστὶ κοινὸς ὁρος πρὸς δὲν αἱ συλλαβαί συνάπτουσιν, ἀλλ᾽ ἐκάστη διωρίσται αὐτῇ καθ" αὐτῇ.

5 Ἡ δὲ γραμμὴ συνεχῆς ἐστὶν. ἔστι γὰρ λαβεῖν κοινὸν ὁρον πρὸς δὲν τὰ μόρια αὐτῆς συνάπτει, στιγμῆν, καὶ τῆς ἐπιφανείας γραμμῆν τὰ γὰρ τοῦ ἐπιπέδου μόρια πρὸς τω τοῦ κοινὸν ὁρον συνάπτει.

5 ὡσαύτως δὲ καὶ ἐπὶ τοῦ σώματος ἐχοῖς ἂν λαβεῖν κοινὸν ὁρον, γραμμῆν ἡ ἐπιφανείαν, πρὸς αὰ τὰ

* These divisions are not co-extensive. Line, plane and solid and space are all called continuous quantities: all, too, consist of such parts as have interrelated positions. Time is a continuous quantity; its parts have, however, no
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discrete or continuous. Some quantities, moreover, consist of such parts as have relative positions in reference each to the others, while others, on the contrary, consist of such parts as have no such positions. Of quantities that are discrete we may here instance number and speech, of quantities that are continuous line, superficies and solid, to which time and place may be added. Consider the parts of a number. You find there is no common limit at which they may join or unite. For example, two fives will make ten. These, however, are wholly distinct; there is no common limit whatever at which these two fives coalesce. And the same with the parts three and seven. And, indeed, in the case of all numbers you never will find such a boundary, common to any two parts, for the parts remain ever distinct. Thus is number discrete, not continuous. The same may be said about speech, if by speech the spoken word is intended. Being measured in long and short syllables, speech is an evident quantity, whose parts possess no common boundary. No common limit exists, where those parts—that is, syllables—join. Each, indeed, is distinct from the rest.

A line is, however, continuous. Here we discover that limit of which we have just now been speaking. This limit or term is a point. So it is with a plane or a solid. Their parts also have such a limit—a line in the case of the former, a line or a plane in the latter.

positions in reference the one to the other. See the following from the summary by Waitz: ‘quod quantum est id vel discretum esse (numerus, oratio) vel continuum (linea, superficies, corpus; tempus, spatium) exemplis demonstratur,’ and ‘linea, superficies, corpus et spatium constant e partibus positionem quandam inter se habentibus, non ita numerus, tempus et oratio.’
τοῦ σώματος μόρια συνάπτει. ἔστι δὲ καὶ ὁ χρόνος καὶ ὁ τόπος τῶν τοιούτων· ὁ γὰρ νῦν χρόνος συνάπτει πρὸς τὸν παρεληλυθότα καὶ τὸν μελλοντα. πάλιν ὁ τόπος τῶν συνεχών ἐστὶ· τόπον γάρ τις παρεληλυθότις τὸν μέλλοντα· καὶ τὰ τοῦ τόπου μόρια, ἀ κατέχει ἕκαστον τῶν τοῦ σώματος μορίων, πρὸς τὸν αὐτὸν ὄρον συνάπτει πρὸς ὅν καὶ τὰ τοῦ σώματος μόρια. ἠδη συνεχής ἐν εἰς καὶ ὁ τόπος· πρὸς γὰρ ἐνα κοινὸν ὄρον αὐτοῦ τὰ μόρια συνάπτει.

5a Ἑτὶ δὲ τὰ μὲν ἐκ θέσιν ἐχόντων πρὸς ἀλλήλα τῶν ἐν αὐτοῖς μορίων συνεστηκε, τὰ δὲ οὐκ ἐξ ἐχόντων θέσιν, οἶον τὰ μὲν τῆς γραμμῆς μόρια θέσιν ἔχει πρὸς ἀλλήλα. ἐκαστὸν γὰρ αὐτῶν κεῖται ποι, καὶ ἔχους ἂν διαλαβεῖν καὶ ἀποδοῦναι ὅπου ἐκαστὸν κεῖται ἐν τῷ ἐπιπέδῳ καὶ πρὸς ποῖον μόριον τῶν λοιπῶν συνάπτει. ὡσαύτως δὲ καὶ τὰ τοῦ ἐπιπέδου μόρια θέσιν ἔχει πρὸς ἀλλήλα. καὶ τὰ τοῦ τοποῦ ἐπὶ δὲ γε τοῦ ἀριθμοῦ οὐκ ἂν ἔχοι τις ἐπιδεῖξαι ὡς τὰ μόρια αὐτοῦ θέσιν τινὰ ἔχει πρὸς ἀλλήλα. θέσιν τινὰ καὶ ποῖα συνάπτει πρὸς ἀλλήλα. οὐδὲ τὰ τοῦ χρόνου· ὑπομένει γὰρ οὐδὲν τῶν τοῦ χρόνου μορίων· ὃ δὲ μὴ ἐστιν ὑπομένων, πῶς ἂν τοῦτο θέσιν τινὰ ἔχοι; ἂλλα μᾶλλον τάξιν τινὰ εἴποις ἂν ἔχεω τῷ τὸ μὲν πρότερον εἶναι τοῦ χρόνου τῷ δ᾽ ύστερον. καὶ ἔπι τοῦ ἀριθμοῦ δὲ ὡσαύτως τῷ τὸ ἐν πρότερον ἀριθμεῖσθαι τῶν δύο καὶ τὰ δύο τῶν τριῶν· καὶ οὕτω τάξιν τινὰ ἂν ἔχου, θέσιν δὲ οὐ πάντω λάβοις ἂν.
Again, time and space are continuous. Time is a whole and continuous; the present, past, future are linked. Space is also this kind of a quantity. For seeing the parts of a solid themselves occupy so much space and these parts have a limit in common, it follows the parts of space also, which those parts themselves occupy, have exactly the same common limit or term as the parts of the solid. As is time, so is space, then, continuous: the parts meet at one common boundary.

All quantities are made up of parts; and those parts, as we saw, have position in reference one to another or else they have no such position. The parts of a line, for example, must all have their relative places. Each, without doubt, must lie somewhere, and each can be clearly distinguished. You can say where each lies on the plane and to what sort of part it is next. So the parts of the plane have position: again you can say where each lies and to what sort of parts it is next. This is true, too, of solids and space. But the case of a number is different. You never could show that its parts are possessed of their relative places or even so much as have places. Nor could you determine which parts are contiguous or adjacent to which. And the same may be said of time also. For no part of time is enduring. And how can what does not endure well be said to have any position? Of time it were better to say that the parts have a relative order, since one part is prior to another. And so, in like manner, of number, for numbers are prior in the counting, as one prior to two, two to three. Thus of number also we may say that the parts have a relative order but certainly have no positions. This, also, will hold
καὶ ὁ λόγος δὲ ὑπομένει τῶν μορίων αὐτοῦ, ἀλλ' εἰρηταὶ τε καὶ οὖκ ἐστιν ἐπὶ τούτῳ λαβεῖν, ὡστε οὖν ἀν εἰῃ θέσις τῶν μορίων αὐτοῦ, εἰγε μηδὲν ὑπομένει. τὰ μὲν οὖν ἐκ θέσιν ἐχόντων τῶν μορίων συνέστηκε, τὰ δὲ οὖν εἰς ἐχόντων θέσιν.

Κυρίως δὲ ποσὰ ταῦτα μόνα λέγεται τὰ εἰρημένα, τὰ δὲ ἄλλα πάντα κατὰ συμβεβηκός· εἰς ταῦτα γὰρ ἀποβλέποντες καὶ τάλλα ποσὰ λέγομεν, οἶον πολὺ τὸ λευκὸν λέγεται τῷ τῇ ἐπιφάνειᾳ πολλῷ εἶναι, καὶ ἡ πράξεις μακρὰ τῷ γε τῶν χρόνων πολὺς εἶναι, καὶ ἡ κίνησις πολλῇ. οὐ γὰρ καθ' αὐτὸ ἐκαστὸν τούτων ποσὸν λέγεται. οἶον ἐὰν ἀποδοθῶ τις πόση τις ἡ πράξεις ἐστι, τῷ χρόνῳ ὀρμεῖ, ἐναυσιαίαν ἡ οὕτω πως ἀποδιδοῖς. καὶ τὸ λευκὸν ποσὸν τι ἀποδιδοὺς τῇ ἐπιφάνειᾳ ὀρμεῖ· ὡστε γὰρ ἂν ἡ ἐπιφάνεια ἢ, τοσοῦτον καὶ τὸ λευκὸν φήσειν ἂν εἶναι. ὡστε μόνα κυρίως καὶ καθ' αὐτὰ ποσὰ λέγεται τὰ εἰρημένα, τῶν δὲ ἄλλων οὐδὲν καθ' αὐτὸ, ἀλλ' εἰ ἀρα, κατὰ συμβεβηκός.

Εἰς τῷ ποσῷ οὖδὲν ἐστὶν ἐναντίων. ἐπὶ μὲν γὰρ τῶν ἀφωρισμένων φανερῶν ὅτι οὐδὲν ἐστὶν ἐναντίων, οἶον τῷ διπήχει ἡ τριπήχει ἡ τῇ ἐπιφανείᾳ ἡ τῶν τοιούτων τιν. οὐδὲν γὰρ ἐστὶν αὐτοῖς ἐναντίοις ἐναντίον, εἰ μὴ ἀρα τὸ πολὺ τῷ ὀλίγῳ

φαίη τις εἰναι ἐναντίων ἡ τὸ μέγα τῷ μικρῷ. τούτων δὲ οὐδέν ἐστι ποσὸν ἀλλὰ τῶν πρὸς τις οὐδὲν γὰρ αὐτὸ καθ' αὐτὸ μέγα λέγεται ἡ μικρῶν.
good of speech, for the parts have no lasting existence. Pronounce them, and then they are gone, so that, since they pass out of existence, they cannot have place or position. Of quantities, then, to sum up, some consist of parts having position and others of parts that have not.

The things we have mentioned alone can be called in the strictest sense quantities. Other things that are so called are so called in a secondary sense—with an eye to some one of the former. To take an example or two. A white object is often called large, since the surface it covers is large, an action or process called long, since the time that it occupies is long. The name 'quantity' cannot be given to such things as of their own right. Someone asks you 'how long was that action?' You mention the time that it took, as 'it lasted a year' or the like. Someone asks you 'how large is that white thing?' You mention the surface it covers. As large as the surface it covers, so large, you will say, that white object. The things, then, referred to alone in themselves can be strictly called quantities; other things thus designated can only lay claim to that name, if at all, in a secondary sense—in a sort of derivative fashion and not from their intrinsic nature.

Quantities never have contraries. This will be perfectly clear in the case of all definite quantities, whereby I mean, for example, 'two cubits' or 'three cubits long' or a surface or something of that sort. These, it is clear, have no contraries. But possibly someone may say, 'great' and 'small,' 'much' and 'little' are contraries. These are, however, more properly regarded as terms of relation: as such, things are not great or small. They are so
5 b ἀλλὰ τῷ πρὸς ἐτερον ἀναφέρεσθαι, οἶον ὅρος μὲν μικρὸν λέγεται, κέγγρος δὲ μεγάλη τῷ τῆν μὲν τῶν ὁμογενῶν μείζονα εἶναι, τὸ δὲ ἔλαττον τῶν ὁμογενῶν. οὐκοῦν πρὸς ἐτερον ἡ ἀναφορά, ἐπεὶ εἶγεν καθ' αὐτό μικρὸν ἢ μέγα ἔλεγετο, οὐκ ἂν ποτε τὸ μὲν ὅρος μικρὸν ἔλεγετο, ἢ δὲ κέγγρος μεγάλη. πάλιν ἐν μὲν τῇ κώμῃ φαμέν πολλοὺς ἀνθρώπους εἶναι, ἐν Ἀθήναις δὲ ὁλίγους πολ.-
25 λαπλασίους αὐτῶν ὄντας, καὶ ἐν μὲν τῇ οἰκίᾳ πολ- λούς, ἐν δὲ τῷ θεάτρῳ ὁλίγους πολλῷ πλείους ὄντας. ἐτι τὸ μὲν δίππηχυ καὶ τρίππηχυ καὶ ἐκαστὸν τῶν τοιοῦτων ποσὸν σημαίνει, τὸ δὲ μέγα ἢ μικρὸν οὐ σημαίνει ποσὸν ἀλλὰ μᾶλλον πρὸς τι πρὸς γὰρ ἐτερον θεωρεῖται τὸ μέγα καὶ τὸ μικρὸν. ὡστε
30 φανερῶν ὅτι ταῦτα τῶν πρὸς τι ἑστὶν. ἦτι ἐάν τε τιθῇ τις ταῦτα ποσὰ εἶναι εάν τα μὴ τιθῇ, οὐκ ἕστιν αὐτοῖς ἐναντίων οὐδὲν. δὲ γὰρ ἕστιν αὐτὸ καθ' αὐτό λαβεῖν ἀλλὰ πρὸς ἐτερον ἀναφέρεται, πῶς ἂν φαίη τις τούτω τι ἐναντίων; ἦτι δὲ εἶ ἐσται τὸ μέγα καὶ τὸ μικρὸν ἐναντία,
35 συμβῆσεται τὸ αὐτὸ ἀμα τὰ ἐναντία ἐπιδέχεσθαι καὶ αὐτὰ ἐαυτοῖς εἶναι ἐναντία. συμβαινει γὰρ ποτε ἀμα τὸ αὐτὸ μέγα τε καὶ μικρὸν εἶναι ἐστὶ γὰρ πρὸς μὲν τοῦτο μικρὸν, πρὸς ἐτερον δὲ το αὐτὸ τοῦτο μέγα. ὡστε τὸ αὐτὸ καὶ μέγα καὶ μικρὸν κατὰ τὸν αὐτὸν χρόνον εἶναι συμβαίνει. 6 a ὡστε ἀμα τὰ ἐναντία ἐπιδέχεσθαι. ἀλλ' οὐδὲν δοκεῖ ἀμα τὰ ἐναντία ἐπιδέχεσθαι, οἶον ἔπι τῆς οὐσίας· δεκτικὴ μὲν τῶν ἐναντίων δοκεῖ εἶναι, ἀλλ' οὔτι γε ἄμα νοσεῖ καὶ ὑγιαίνει. ἀλλ' οὐδὲ
by comparison only. Thus a hill is called small, a grain large; but we really mean greater or smaller than similar things of the kind, for we look to some external standard. If such terms were used absolutely, we never should call a hill small, as we never should call a grain large. So, again, we may very well say that a village has many inhabitants, a city like Athens but few, though the latter are many times more; or we say that a house contains many, while those in the theatre are few, though they greatly outnumber the others. While 'two cubits,' 'three cubits long' and the like, therefore, signify quantity, 'great,' 'small' and the like signify not a quantity but rather a relation, implying some external standard or something above and beyond them. The latter, then, plainly are relative.

Quantities, moreover, or not, there is nothing that is contrary to them. For what is not grasped by itself but referred to some external standard—how suppose that can have any contrary? Secondly, suppose we allow 'great' and 'small' and the like to be contraries, then the same subject, it follows, at one and the same time admits of the contrary qualifications and things to themselves will be contrary. Does it not sometimes occur that the same thing is both great and small? As compared with one thing, it is small; it is great, as compared with another. And so the same thing simultaneously comes to be both great and small or at one and the same time admits of the contrary qualifications. But in dealing with substance we stated that nothing can thus simultaneously admit of such qualifications. Substance, no doubt, is receptive of contrary qualifications, but not in such way that a man at the same time is both
λευκόν καὶ μέλαν ἐστίν ἅμα. ἀλλ᾽ οὐδὲ τῶν ἄλλων
οὐδὲν ἐστίν ὃ ἅμα τὰ ἐναντία ἐπιδέχεται. καὶ
αὐτὰ δ᾽ ἐαυτοῖς συμβαίνει ἐναντία εἶναι. εἰ γάρ
ἐστι τὸ μέγα τῷ μικρῷ ἐναντίον, τὸ δ᾽ αὐτὸ ἐστὶν
ἀμα μέγα καὶ μικρόν, αὐτὸ ἐαυτῷ εἶ ἃν ἐναντίον.
ἀλλὰ τῶν ἀδυνάτων ἐστὶν αὐτὸ ἐαυτῷ εἰναί τι ἐναντίον.
οὐκ ἐστιν ἄρα τὸ μέγα τῷ μικρῷ ἐναντίον, οὐδὲ τὸ πολὺ τῷ ὄλυμψ. ὥστε εὶ καὶ
μὴ τῶν πρὸς τι ταῦτα τις ἔρει ἀλλὰ τοῦ ποσοῦ,
οὐδὲν ἐναντίον ἔξει.

Μάλιστα δὲ ἡ ἐναντιότητι τοῦ ποσοῦ περὶ τῶν
tόπων δοκεῖ ὑπάρχειν. τὸ γὰρ ἄνω τῷ κάτω
ἐναντίον τιθέασι, τὴν πρὸς τὸ μέσον χώραν κάτω
λέγοντες διὰ τὸ πλείστην τῷ μέσῳ διάστασιν πρὸς
τὰ πέρατα τοῦ κόσμου εἶναι. ἐσικασί δὲ καὶ τοῖς
τῶν ἄλλων ἐναντίων ὁρισμοὶ ἀπὸ τούτων ἐπι-
φέρειν· τὰ γὰρ πλείστην ἄλληλων διεστηκότα τῶν
ἐν τῷ αὐτῷ γένει ἐναντία ὁριζονται.

Οὐ δοκεῖ δὲ τὸ ποσὸν ἐπιδέχεσθαι τὸ μᾶλλον
καὶ ἤπτον, οἷον τὸ δίπηχυ· οὐ γὰρ ἐστὶν ἐτερον
ἐτέρου μᾶλλον δίπηχυ. οὐδ᾽ ἐπὶ τοῦ ἀριθμοῦ,
οἷον τὰ τρία τῶν πέντε οὐδὲν μᾶλλον τὰ τριὰ,
οὐδὲ τὰ πέντε τῶν τριῶν. οὐδὲ χρόνος ἐτερος
ἐτέρου μᾶλλον χρόνος εἶναι λέγεται. οὐδ᾽ ἐπὶ

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a  The extremities' apparently refers to the circumference taken as a whole.

b The meaning I give to this sentence the context appears to require. But the text must, I think, be corrupt.

44
sick and healthy, a thing black and white simultaneously. Neither can anything else be at any time thus qualified. Then, if 'great,' 'small' and so forth were contrary, these to themselves would be contrary. Granted for argument's sake both that 'great' is the contrary of 'small' and that one and the same thing can be at the same moment both great and small, 'great' or 'small' to itself will be contrary. This is, however, impossible: nothing to itself can be contrary. Therefore, we cannot describe 'great' and 'small,' 'much' and 'little' as contraries. Neither could such terms have contraries, even though someone should call them terms not of relation but of quantity.

In dealing with space, the contention that quantity admits of a contrary seems to have most plausibility. 'Above' and 'below' are called contraries, when by 'below' what is meant is the region or space at the centre. This use is, however, derived from the view that we take of the world, since it is at the extremities of the world that the distance from the centre is the greatest.a Indeed, in defining all contraries, we seem to have space in our minds. For we call those things contrary which, being also within the same class, are most distant the one from the other.

Quantities do not appear to admit of a more and a less. For example, take 'two cubits long.' Now, this never admits of gradations. A thing is not two cubits long in a greater degree than another. And so, in like manner, of numbers. One three is not, so to speak, three in a greater degree than another; one five is not, so to speak, five in a greater degree than another.b One period of time is, moreover, not more of a time than another. Nor of any other

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Aristotle here classifies as relatives two distinct classes of terms, those said 'to be of other things' and those said 'to be towards something else' (ad aliquid) 'in some other manner.' He means by the former all terms with a genitive dependent upon them. This distinction cannot be brought out in the same concise manner in English. There is no single form that will cover all the uses of the genitive in Greek. The Greek genitive, for instance, expresses not only our 'of' but our 'than.'
quantity mentioned can a 'more' or a 'less' be affirmed. The category, therefore, of quantity in no wise admits of degrees.

What is really peculiar to quantities is that we compare or contrast them in terms or on grounds of equality. We predicate 'equal,' 'unequal,' of all of the quantities mentioned. One solid is equal to another, another, per contra, unequal. We use these terms also of time in comparing the periods of it. So also of all other quantities that we have previously mentioned. Of nothing, moreover, save quantities can we affirm these two terms. For we never say this disposition is 'equal' to that or 'unequal.' We say it is 'like' or 'unlike.' One quality—whiteness, for instance—is never compared with another in terms or on grounds of equality. Such things are termed 'like' and 'unlike.' Thus our calling something 'equal,' 'unequal,' is the mark, above all marks, of quantity.

VII. Let us now turn to Relation. We call a thing relative, when it is said to be such as it is from its being of some other thing or, if not, from its being related to something in some other way. Thus 'the greater' is said to be greater by reference to something outside it. For, indeed, when we call a thing 'greater,' we mean by that greater than something. 'The double' is called what it is from its being the double of something. For 'double' means double of something. And so with all terms of that kind. Other relatives also there are, such as habit, disposition, perception, position or attitude, knowledge. All these are explained by a reference to something to which they belong, and in no other way
λέγεται καὶ οὐκ ἄλλο τι· ἡ γὰρ ἐξεις τινὸς ἐξεις
6 λέγεται καὶ ἡ ἐπιστήμη τινὸς ἐπιστήμη καὶ ἡ
θέσις τινὸς θέσις, καὶ τὰ ἄλλα δὲ ὡσαυτὸς. πρὸς
τι οὖν ἐστὶν ὡσαυτὰ αὐτὰ ἀπερ ἐστὶν ἐτέρων εἶναι
λέγεται, ἡ ὁπωσοῦν ἄλλως πρὸς ἐτερον, οἶνον ὅρος
μέγα λέγεται πρὸς ἐτερον· πρὸς τι γὰρ μέγα
λέγεται τὸ ὅρος· καὶ τὸ ὅμοιον τωὶ ὅμοιον λέγεται,
10 καὶ τὰ ἄλλα δὲ τὰ τοιαῦτα ὡσαυτὸς πρὸς τι
λέγεται. ἐτι δὲ καὶ ἡ ἀνάκλισις καὶ ἡ στάσις καὶ
ἡ καθέδρα θέσεις τινὲς, ἡ δὲ θέσις τῶν πρὸς τι.
τὸ δὲ ἀνακείσθαι ἡ ἐστάναι ἡ καθέδρα αὐτὰ μὲν
οὐκ εἰσὶ θέσεις, παρωνύμως δὲ ἀπὸ τῶν εἰριμένων
θέσεων λέγεται.

Ὑπάρχει δὲ καὶ ἐναντίοτητης ἐν τοῖς πρὸς τι, οἶνον
ἀρετὴ κακία ἐναντίον, ἐκάτερον δὲ τῶν πρὸς τι,
καὶ ἐπιστήμη ἀγνοία. οὐ πάσι δὲ τοῖς πρὸς τι
ὑπάρχει τὸ ἐναντίον· τῷ γὰρ διπλασίῳ οὐδὲν ἔστων
ἐναντίον, οὐδὲ τῷ τριπλασίῳ, οὐδὲ τῶν τοιοῦτων
οὐδὲνι.

20 Δοκεῖ δὲ καὶ τὸ μᾶλλον καὶ τὸ ἄντων ἐπιδέχεσθαι
tὰ πρὸς τι· ὅμοιον γὰρ καὶ ἀνόμοιον μᾶλλον καὶ
ἤττον λέγεται, καὶ ἰσον καὶ ἀνισον μᾶλλον καὶ
ἤττον λέγεται, ἐκάτερον αὐτῶν πρὸς τι ὅν· τὸ τε
gὰρ ὅμοιον τωὶ ὅμοιον λέγεται καὶ τὸ ἀνόμοιον τωὶ
ἀνόμοιον. οὐ πάντα δὲ τὰ πρὸς τι ἐπιδέχεσται τὸ
μᾶλλον καὶ ἤττον· τὸ γὰρ διπλασίον οὐ λέγεται
μᾶλλον καὶ ἤττον διπλάσιον, οὐδὲ τῶν τοιοῦτων
οὐδὲν.

Πάντα δὲ τὰ πρὸς τι πρὸς ἀντωτρέφοντα λέγεται,
3 οἰνον ὁ δοῦλος δεσπότου δοῦλος λέγεται καὶ ὁ
despotης δοῦλος δεσπότης, καὶ τὸ διπλάσιον
ἡμίσεος διπλάσιον καὶ τὸ ἡμίσιο διπλάσιον ἡμισι
whatsoever. A habit is a habit of something, knowledge is knowledge of something, position position of something. We speak, then, of relative terms, when a thing's being such as it is is explained by a genitive following or else by some phrase or expression designed to bring out the relation. For instance, we call a hill 'large,' meaning large as compared with another. By such a comparison only it is that a hill is called 'large.' So we call a thing 'similar,' 'like'—'like' or 'similar' to something else. It is thus with all terms of that nature. This also we notice in passing: while lying and standing and sitting are really specific positions, position itself is a relative. To lie and to stand and to sit, these are not themselves really positions; their names are, however, derived from the attitudes just now referred to.

Relatives sometimes have contraries. Virtue is contrary to vice, either term itself being a relative; knowledge to ignorance also. By no means all relative terms can, however, be said to have contraries. 'Double' and 'triple' have none, nor, indeed, any terms of that sort.

Relatives also, it seems, may admit of degrees in some cases, as 'like,' 'unlike,' 'equal,' 'unequal,' which all may have 'more' or 'less' added, while each is a relative term. For by 'like' we mean like something else and by 'unlike' unlike something else. It is not the case, nevertheless, that all relatives admit of degrees. We do not say 'more' or 'less double,' and so with all terms of that kind.

All relatives have their correlatives. 'Slave' means the slave of a master, and 'master,' in turn, implies slave. 'Double' means double its half, just as 'half' means the half of its double. By 'greater,'
καὶ τὸ μεῖζον ἐλάττονος μεῖζον καὶ τὸ ἐλαττον 
μεῖζονος ἐλαττον. ἄσαυτως δὲ καὶ ἐπὶ τῶν 
ἀλλων, πλὴν τῇ πτώσει εἰσοτερισθεὶς κατὰ τὴν 
λέξιν, ὦ τὸ ἐπιστήμημα ἐπιστήμην λέγεται ἐπιστήμη μέγε 
καὶ τὸ ἐπιστήμημα ἐπιστήμην ἐπιστήμην, καὶ 
ἡ ἀισθησις ἀισθητοῦ ἀισθητικάς καὶ τὸ ἀισθητοῦ 
ἀισθητοῦ ἀισθητοῦ.

Οὐ μὴν οὖν ἀλλ᾽ εἰσοετεὶ ὡς ὁ τὸ ἀντιστρέφθαι, 
ἐὰν μὴ ὁ οἰκείως πρὸς ὃ λέγεται ἀποδοθῆ, ἀλλὰ δι-
αμάρτη ὁ ἀποδιδούς, ὀν τὸ πτερωτὸν ἐὰν ἀποδοθῇ 
ὄρνιθος, οὐκ ἀντιστρέφθη ὁ ὡς πτερόν, οὐ 
γὰρ ὁ οἰκείως τὸ πρῶτον ἀποδεδοθαὶ πτερόν ὦρνιθος: οὐ 
γὰρ ἦν ὄρνις, ταύτη τὸ πτερόν αὐτοῦ λέγεται, ἀλλ᾽ 
ἡ πτερωτὸν ἔστι: πολλῶν γὰρ καὶ ἀλλων πτερά 
ἐστίν, οὐκ ἦν ὡς ὀρνιθῆς. ὥστε εὰν ἀποδοθῇ 
ὁ οἰκείως, καὶ ἀντιστρέφθη, οἷον τὸ πτερόν πτερωτὸν 
πτερόν καὶ τὸ πτερωτὸν πτερῶν πτερῶν.

Ἐνίοτε δὲ καὶ ὁμοματοποιεῖν ἴσως ἀναγκαῖον, 
ἐὰν μὴ ἐκείνην ἢ ὄνομα ἄρος ὁ οἰκείως ἄν ἀπό-
δοθεῖν, ὀν τὸ πηδάλιον ὀν πλοῖον ἐὰν ἀποδοθῇ, 
ὁ οἰκείως ἢ ἀπόδοσις γίνεται: οὐ γὰρ ἦν 
ταύτη τὸ πηδαλίου λέγεται, ἐστὶ γὰρ πλοῖον 
ὅν οὐκ ἦστι πηδαλία. διὸ οὐκ ἀντιστρέφθη ὡς 
γὰρ πλοῖον οὐ λέγεται πηδαλίου πλοῖον. ἀλλ᾽ 
ὡς ὁ οἰκείοτερα ἢ ἢ ἀπόδοσις εἴη, ἢ ἐν τῷ πως 
ἀποδοθεῖν, τὸ πηδάλιον πηδαλαμωτοῦ πηδάλιον, ἢ 
ὅπως ἄλλως: ὁ ὄνομα γὰρ ὡς ὄνομα γὰρ ὡς 
καὶ ἀντι-

στρέφθη γε, ἐὰν ὁ οἰκείως ἀποδοθῇ: τὸ γὰρ πηδα-
again, we mean greater than this or that thing which is less, by 'less' less than that which is greater. So it is with all relative terms. On occasions, however, the case or grammatical inflexion will differ. Knowledge is thus of the knowable; the knowable is knowable by knowledge. Perception is of the perceptible, which is perceived by perception.

At times the correlation, however, will not manifestly appear—namely, when a mistake has been made and the correlate itself wrongly stated. If you call a wing wing of a bird, then will no correlation appear; wing and bird are, I mean, not correlative. The wrong term was used at the outset in calling it wing of a bird. For the wing is the wing of a bird, when considered as winged, not as bird. Many other things, not birds, are winged. When, however, the right terms are used, the correlation will forthwith appear, as when, for example, we say that a wing is a wing of the winged and the winged thing is winged by a wing. Wing belongs to the winged of necessity.

At times there is no word in Greek that will rightly bring out the correlation. Then, I think, we must coin a new word. Let us take, for example, a rudder. We may say this belongs to a boat. 'To a boat' is, however, inappropriate and fails to bring out the correlation. Not, indeed, to the boat viewed as boat does the rudder belong of necessity. Are there not boats without rudders? Thus rudder and boat are not reciprocal. 'Boat' is not 'boat of a rudder,' as rudder is rudder of a boat. Since no proper term now exists, we must coin one to suit the occasion and speak with more accuracy thus—the rudder is rudder of 'the ruddered.' And, if we express ourselves thus, then at least will the terms be reciprocal. That is to
λιωτὸν πηδαλίῳ πηδαλιωτόν. ὡσαύτως δὲ καὶ ἐπὶ τῶν ἄλλων, οἶον η' κεφαλὴ οἰκειοτέρως ἃν ἀποδοθεῖται κεφαλωτοῦ ἡ ζώου ἀποδιδομένης οὔ γὰρ ἡ ζώου, κεφαλὴν ἔχει· πολλὰ γὰρ τῶν ζώων κεφαλὴν οὔκ ἔχει. οὔτω δὲ ῥᾴστα ἄν ἱσως τις λάβοι ο isize μὴ κεῖται ὑνόματα, εἰ ἀπὸ τῶν πρώτων καὶ τοῖς πρὸς αὐτὰ ἀντιστρέφουσι τιθεῖ τὰ ὄνοματα, ὥσπερ ἐπὶ τῶν προειρημένων ἀπὸ τοῦ πτεροῦ τὸ πτερωτὸν καὶ ἀπὸ τοῦ πηδαλίου τὸ πηδαλιωτὸν.

Πάντα οὖν τὰ πρὸς τι, ἐάν περ οἰκείως ἀποδιδότω, πρὸς ἀντιστρέφοιτα λέγεται, ἐπεὶ ἐάν γε πρὸς τὸ τυχὸν ἀποδιδῶται καὶ μὴ πρὸς αὐτὸ ὃ λέγεται, οὔκ ἀντιστρέφει. λέγω δὲ ὅτι οúde τῶν ὄμων οὐμομένων πρὸς ἀντιστρέφοιτα λεγομένων, καὶ ὄνωμάτων αὐτοῖς κεφαλῆς καὶ ὄμωματι ἀντιστρέφει, ἐὰν πρὸς τι τῶν συμβεβηκότων ἀποδιδότω. οὔ ἀυτὸς λέγεται, οἴον ὁ δοῦλος ἐὰν μὴ δεσπότου ἀποδοθῇ ἂλλ᾽ ἀνθρώπου ἢ δίποδος ἢ ὅτουοῦν τῶν τοιοῦτων, οὔκ ἀντιστρέφει. οὔ γὰρ οἰκεία ή ἀπόδοσις ἐστίν. ἐτι δ᾽ ἐὰν μὲν τι οἰκεῖως ἀποδομένων ἢ πρὸς ὃ λέγεται, πάντων περαιρομένων τῶν ἄλλων ὁμοιομενόν ὅσα συμβεβηκότα ἐστί, καταλειπομένου δὲ μόνου τούτου πρὸς ὃ ἀπεδοθή ὁiros, ἀεὶ πρὸς αὐτὸ ῥηθήσεται, οἴον ὁ δοῦλος ἐὰν πρὸς δεσπότην λέγηται, περαιρομένων τῶν ἄλλων ἀπάντων ὁμοιομενόν ὅσα συμβεβηκότα ἐστι τῷ δε-
say, what is ruddered is ruddered by means of its rudder. So also in all other cases. A head will be better defined as correlative of that which is 'headed,' not, loosely, as head of an animal. Animals, simply as animals, do not have heads of necessity. Many, indeed, have no heads. We may thus, I think, best understand to what this or that thing is related, where no name at present exists, if we take the thing having a name and then, coining another name from it, apply it to the former's correlative just as we coined 'winged' and 'ruddered' above from the names 'wing' and 'rudder.'

Thus all relatives are referred to their correlates, provided they are rightly defined. I must add this proviso because, if the correlate happens to be stated in casual, inaccurate fashion, the terms cannot well be reciprocal. Let me explain what I mean. Even where the right names do exist and the things are admittedly correlates, no correlation appears, when we give one of these two a name that in no way brings out the relation and has some irrelevant meaning. Let 'slave' be defined in relation to 'man' or to 'biped' or what not, instead of its being defined (as it should be) by reference to 'master,' then no correlation appears, for the reference is really inaccurate. Again, let us grant that two things are correlative one with another and that the correct term is used for the purpose of stating the second. Although we remove all its other—I mean, its irrelevant—attributes, leaving that only in virtue of which it was called the correlative, then will the said correlation be, none the less, found to exist. The correlative of 'slave,' for example, is properly said to be 'master.' Suppose we remove all his other—I mean, his irre-
σπότη, οἷον τῷ δίποδί εἶναι καὶ τῷ ἑπιστήμης δεκτικῷ καὶ τῷ ἀνθρώπῳ, καταλειπομένου δὲ μόνου τοῦ δεσπότην εἶναι, ἀεὶ ὁ δούλος πρὸς αὐτὸ λέγεται, περιαιρουμένων μὲν τῶν ἄλλων, καταλειπομένου δὲ μόνου τοῦ πρὸς ὁ ἀπεδόθη, οὐ ῥηθήσεται πρὸς αὐτό. ἀποδεδόθη γὰρ ὁ δούλος ἀνθρώπου καὶ τῷ πτερῶν ὀρνιθος, καὶ περιηρήθηκα τοῦ ἀνθρώπου τῷ δεσπότην αὐτών εἶναι: οὐ γὰρ ἐτὶ ὁ δούλος πρὸς ἀνθρώπου ῥηθήσεται: μὴ γὰρ ὄντος δεσπότου οὐδὲ δούλος ἐστίν. ὥσαυτός καὶ τοῦ ὀρνιθος περιηρήθηκα τῷ πτερωτῷ εἶναι: οὐ γὰρ ἐτὶ ἔσται τῷ πτερῶν τῶν πρὸς τί: μὴ γὰρ ὄντος πτερωτοῦ οὐδὲ πτερῶν ἐσται τινὸς.

/testify, δὲ μὲν ἀποδιδόναι πρὸς ὁ ποτε οἰκεῖως λέγεται. κἂν μὲν ὄνομα ἦ κείμενον, ῥᾳδία ἡ ἀπόδοσις γίνεται: μὴ δὲ ὄντος ἔστι ἀναγκαίαν ἵπτων ὀνοματοποιεῖν. οὕτω δὲ ἀποδιδομένων ἀναγκαίον ὁτι πάντα τὰ πρὸς τὶ πρὸς ἀντιστρέφοντα λέγεται.

ὁμοίως δὲ τὰ ἄλλα. καὶ συναναιρεῖ ταῦτα ἄλληλα. μὴ γὰρ ὄντος διπλασίον οὐκ ἔστιν ἡμισί, καὶ ἡμίσεος οὐτος διπλασίον. καὶ νομισμί ὄντος δεσπότης ἐστίν. ὡσαύτως δὲ καὶ τὰ ἄλλα. καὶ συναναιρεῖ τὰ τὰ ἀλληλα-πάντων τούτων καὶ τὰ ἁλλα. καὶ συναναιρεῖ τὰ τὰ ἀλληλα-πάντων τούτων καὶ τὰ ἀλλα. καὶ συναναιρεῖ τὰ τὰ ἀλληλα-πάντων τούτων καὶ τὰ ἁλλα. καὶ συναναιρεῖ τὰ τὰ ἀλληλα-πάντων τούτων καὶ τὰ ἁλλα. καὶ συναναιρεῖ τὰ τὰ ἀλληλα-
levant—attributes, such as his being 'two-footed,' 'receptive of knowledge' or 'human,' and leave but his being 'a master,' then 'slave' will be still the correlative, 'slave' meaning slave of a master.

On the other hand, let us suppose one correlative named incorrectly. Then, if we strip off its attributes, saving that only in virtue of which it was called a correlative, all correlation will vanish. Let 'a slave' be defined as 'a man's'; let 'a wing' be defined as 'a bird's.' Take the attribute 'master' from 'man': then, indeed, the correlation subsisting between 'man' and 'slave' will have vanished. No master, in short, then no slave. Take the attribute 'winged' from 'the bird.' Then the wing will no more be a relative: nought will there now be a wing of, the bird being no longer winged.

And so, to sum up, we must state all correlative terms with exactness. If a name is already to hand, then the statement will prove to be easy. If no name already exists, then I think it our duty to coin one. It is clear, when the names are correct, that all relative terms are correlative.

Correlatives are commonly held to come into existence together, and this for the most part is true, as, for instance, of double and half. That a half exists means that the double of which it is half must exist. The existence of a master involves the existence also of a slave. If a slave exists, then must a master. And so in all similar cases. Moreover, this holds of them also: to cancel one cancels the other. For instance, no double, no half, and, per contra, no half, then no double: and so with all similar terms. However, the view that correlatives come into being together does not appear true at all times, for it
'Ετι τὸ μὲν ἐπιστητὸν ἀναιρεθὲν συναναιρεῖ τὴν ἑπιστήμην, ἢ δὲ ἐπιστήμη τὸ ἐπιστητὸν οὐ συναναιρεῖ· ἐπιστητοῦ μὲν γὰρ μὴ οὖν ὡς ἀναιρεθὲν ἑπιστήμη, ἐπιστήμης δὲ μὴ οὖσης οὐδὲν κωλύει ἐπιστητοῦ εἶναι, οἷον καὶ ὁ τοῦ κύκλου τετραγωνισμὸς εἶναι ἐπιστητῶν, ἐπιστήμη μὲν αὐτοῦ οὐκ ἄστων οὐδέπω, αὐτὸς δὲ ἐπιστητὸν ἄστων. ἔτι ζῷου μὲν ἀναιρεθέντος οὐκ ἄστωι ἐπιστήμη, τῶν δ᾽ ἐπιστητῶν πολλὰ ἐνδέχεται εἶναι.

Ὅμοιως δὲ τούτοις καὶ τὰ ἐπὶ τῆς αἰσθήσεως ἔχει. τὸ γὰρ αἰσθητὸν πρότερον ἄστω τῆς αἰσθήσεως δοκεῖ εἶναι. τὸ μὲν γὰρ αἰσθητὸν ἀναιρεθέν συναναιρεῖ τὴν αἴσθησιν, ἡ δὲ αἴσθησις τὸ αἰσθητὸν οὐ συναναιρεῖ· αὐτοὶ δὲ ἐπιστητοῦ πολλά ἐνδέχεται εἶναι.
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seems that the object of knowledge is prior to, exists before, knowledge. We gain knowledge, commonly speaking, of things that already exist, for in very few cases or none can our knowledge have come into being along with its own proper object.

Should the object of knowledge be removed, then the knowledge itself will be cancelled. The converse of this is not true. If the object no longer exists, there can no longer be any knowledge, there being now nothing to know. If, however, of this or that object no knowledge has yet been acquired, yet that object itself may exist. Take the squaring of the circle, for instance, if that can be called such an object. Although it exists as an object, the knowledge does not yet exist. If all animals ceased to exist, there would then be no knowledge at all, though there might in that case, notwithstanding, be still many objects of knowledge.

The same may be said of perception. The object, I mean, would appear to be prior to the act of perception. Suppose that you cancel the perceptible; you cancel the perception as well. Take away or remove the perception, the perceptible still may exist. For the act of perception implies or involves, first, a body perceived, then a body in which it takes place. Therefore, if you remove the perceptible, body itself is removed, for the body itself is perceptible. And, body not being existent, perception must cease to exist. Take away the perceptible, then, and you take away also perception. But the taking away of perception does not take such objects away. If the animal itself is destroyed, then perception is also destroyed. But perceptibles yet will remain, such as body, heat, sweetness and bitterness and everything else that is sensible.
Ἔτι η μὲν αἴσθησις ἅμα τῷ αἰσθητικῷ γίνεται· ἅμα γὰρ τῷ ζῷῳ γίνεται καί αἴσθησις: τὸ δὲ γε αἰσθητὸν ἐστὶ καὶ πρὸ τοῦ ζῴου ἡ αἴσθησις εἶναι· πῦρ γὰρ καὶ ὕδωρ καὶ τὰ τοιαῦτα, ἐξ ὧν καὶ τὸ ζῷον συνίσταται, ἐστὶ καὶ πρὸ τοῦ ζῴου ὅλως εἶναι ἡ αἴσθησιν, ὡστε πρότερον αὖ τῆς αἰσθήσεως τὸ αἰσθητὸν εἶναι δόξειν.

"Εχει δὲ ἀπορίαν πότερον οὐδεμία οὐσία τῶν πρὸς τι λέγεται, καθάπερ δοκεῖ, ἢ τούτο ἐνδέχεται κατά τινας τῶν δευτέρων οὐσιῶν. ἐπὶ μὲν γὰρ τῶν πρώτων οὐσιῶν ἀληθεῖς ἐστιν· οὔτε γὰρ τὰ ὅλα οὔτε τὰ μέρη πρὸς τι λέγεται. ο λάρ τις ἄνθρωπος οὐ λέγεται τινὸς τις ἄνθρωπος, οὐδὲ ὁ τίς βοῦς τινὸς τις βοῦς. ὑσαύτως δὲ καὶ τὰ μέρη· ἡ γάρ τις χεὶρ οὐ λέγεται τινὸς τις χεὶρ ἀλλὰ τινὸς χεὶρ, καί ἡ τὶς κεφαλὴ οὐ λέγεται τινὸς τις κεφαλὴ ἀλλὰ τινὸς κεφαλὴ. ὑσαύτως δὲ καὶ ἐπὶ τῶν δευτέρων οὐσιῶν, ἐπὶ γε τῶν πλείστων, ὁ λαὸς ἄνθρωπος οὐ λέγεται τινὸς ἄνθρωπος, οὐδὲ ὁ βοῦς τινὸς βοῦς, οὐδὲ τὸ ξύλον τινὸς ξύλον, ἀλλὰ τινὸς κτῆμα λέγεται. ἐπὶ μὲν οὖν τῶν τοιούτων φανερὸν ὅτι οὐκ ἐστί τῶν πρὸς τι· ἐπ’ ἐνίων δὲ τῶν δευτέρων οὐσιῶν ἔχει ἀμφισβήτησιν, ὁ λαὸς κεφαλὴ τινὸς λέγεται κεφαλὴ καί ἡ χεὶρ τινὸς λέγεται χεὶρ καὶ ἐκαστὸν τῶν τοιούτων, ὡστε ταῦτα τῶν πρὸς τι δόξειν ἄν εἶναι. εἰ μὲν οὖν ἡ ἑκανῶς ὁ τῶν πρὸς τι ὑρισμὸς ἀποδεδοταί, ἡ τῶν.
Perception, further, comes into being along with the subject perceiving—that is, with the live thing itself. The perceptible, however, is prior to the animal and to perception. For such things as water and fire, out of which are composed living beings, exist before any such beings and prior to all acts of perception. The perceptible, so we conclude, would appear to be prior to perception.

The view that no substance is relative—a view that is commonly held—would appear to be open to question. Exception, perhaps, should be made in the case of some secondary substances. Doubtless, the view we refer to holds good of the primary substance, for neither the wholes nor the parts of first substances ever are relative. This man or that ox, for example, is never defined with a reference to something beyond or outside. And the same also holds of their parts. Thus a certain hand or head is not said to be a certain hand of someone or other, a certain head of someone or other. We call them the hand and the head of this specified person or that. So, too, with the secondary substances, at least with the vast generality. Species, like 'man,' 'ox' and so forth, are never defined with a reference to something beyond or outside them. Neither is 'wood' so defined, and, if wood is regarded as relative, then is it so as a property, belonging to someone or other, and not in its character of wood. It is evident, then, in such cases that substance can hardly be relative. Opinions, however, may differ in the case of some secondary substances. Thus we define 'head' and 'hand' in the light of the wholes they belong to, and so these might seem to be relative. Indeed, it would prove very hard, not to say an impossible task,
πάνυ χαλεπῶν ἢ τῶν ἀδυνάτων ἐστί τὸ δεῖξαι ώς οὐδεμία οὐσία τῶν πρός τι λέγεται: εἰ δὲ μὴ ἰκανῶς, ἀλλ' ἐστι τὰ πρός τι οἷς τὸ εἶναι ταὐτόν ἐστι τῷ πρός τι πως ἔχειν, ἵσως ἄν ῥηθείη τι πρὸς αὐτά. ὅ δὲ πρότερος ὀρισμὸς παρακολουθεῖ μὲν πάσιν τοῖς πρός τι, οὐ μὴν ταὐτόν γε ἐστιν τῷ πρός τι αὐτοῖς εἶναι τὸ ἀυτὰ ἀπερ ἐστίν ἐτέρων λέγεσθαι.

Ἐκ δὲ τούτων δῆλον ἐστίν ὅτι εἰάν τις εἰδὴ τι ὀρισμένως τῶν πρός τι, κάκεινο πρὸς δὲ λέγεται ὀρισμένως εἴσεται. φανερὸν μὲν οὖν καὶ ὧς αὐτῶν ἐστίν. εἰ γὰρ οἷδὲ τις τὸ δῆλον ὅτι ἔστι τῶν πρός τι πως ἔχειν, κάκεινο οἷδὲ πρὸς ὁ τοὐτό πως ἔχει νύ ἐσθιν. εἰ γὰρ οἷδὲ τις τῷ τὸ τοῦτο πως ἔχειν, γαν εἰδὲ τις τῷ τοῦτο πως ἔχειν. ὡσαυτῶς δὲ καὶ τόδε τι ἐστιν καλλίον εὐθὺς ἀφωρισμένως ἀναγκαῖον εἶναι διὰ ταῦτα. οὐκ ἀορίστως δὲ εἰσεται ὅτι τοῦτο ἐστιν ἐκπολήμι γαρ τό
thus to show that no substance is relative, if we correctly defined what was meant by a relative term. On the other hand, if we were wrong, if those things are true relatives only, whose very existence consists in their being in some way or other related to some other object, then something, I think, might be said. The former definition applies to all relatives beyond any doubt; but the fact that a thing is explained by a reference to something outside it is not the same thing as to say that it is of necessity relative.\(^a\)

From what we have said this is plain: if a relative is definitely known, that to which it is relative also will then be as definitely known. What is more, we may call this self-evident. Provided, that is, that you know a particular thing to be relative, relatives being those objects whose very existence consists in their being in some way or other related to some other thing, then you know what that other thing is to which that thing itself is related. For if you did not know at all that to which it is somehow related, you could not so much as know whether it was or it was not a relative. Take some particular instances; then will the point be quite clear. For suppose that you definitely know a particular thing to be ‘double’; then at once will you definitely know also that thing of which it is double. You cannot know that it is double without knowing that it is double of something specific and definite. Again, if you definitely know a particular thing is more beautiful, at once must you definitely know that than which it is reckoned more beautiful. Thus you will not vaguely know that particular thing has more beauty than something possessing less beauty. For that would be mere
τοιοῦτο γίνεται, οὐκ ἐπιστήμη· οὐ γὰρ ἐτι ἀκριβῶς εἴσεται ὅτι ἐστὶ χείρονος κάλλιον. ἐν γὰρ οὕτως ἐτυχεῖ, οὐδὲν ἐστὶ χείρον αὐτοῦ. ἀλλ᾽ ἐπεὶ φανεροῦ ὅτι ἄναγκαιον ἐστιν, ὅ ἄν εἰδῇ τὸν πρὸς τι ἀφωρισμένως, κἀκεῖνο πρὸς ὃ λέγεται ἀφωρισμένως εἴδεναι.
Τὴν δὲ γε κεφαλὴν καὶ τὴν χεῖρα καὶ ἐκαστὸν τῶν τοιούτων, ἂ εἰσὶν οὐσίαι, αὐτὸ μὲν ὅπερ ἔστι ἀφωρισμένως ἐστιν εἴδεναι, πρὸς ὃ δὲ λέγεται, οὐκ ἄναγκαιον. τὸν γὰρ αὐτήν ἡ κεφαλὴ ἢ τίνος ἡ χεῖρ, οὐκ ἐστιν εἴδεναι ἀφωρισμένως. ὅστε οὐκ ἄν εἴη τὰ τῶν πρὸς τι. εἰ δὲ μὴ ἐστὶ ταῦτα τῶν πρὸς τι, ἄλλης ἂν εἴη λέγειν ὅτι οὐδεμία οὐσία τῶν πρὸς τι ἐστιν. ἐσως δὲ χαλέποι ὑπὲρ τῶν τοιούτων σφοδρῶς ἀποφαίνεσθαι μὴ πολλάκις ἐπεσκεμμένου· τὸ μέντοι διηπορηκέναι ἐφ᾽ ἐκάστου αὐτῶν οὐκ ἄχρηστον ἐστιν.

VIII. Ποιότητα δὲ λέγω καθ᾽ ἣν ποιοὶ τινὲς εἶναι λέγονται. ἐστὶ δὲ ἡ ποιότης τῶν πλεοχνῶς λεγομένως. ἕν μὲν οὖν εἶδος ποιότητος ἔστι καὶ διάθεσις λεγέσθωσαν. διαφέρει δὲ ἔστι διαθέσεως τῷ πολύ χρονιώτερον εἶναι καὶ μονιμώτερον. τοιαῦτα δὲ αἱ τε ἐπιστήμαι καὶ αἱ ἁρετῶς τε ἐπιστήμαι ἐστιν καὶ ἀρετῶς τε λεγέσθωσαν. διαφέρει δὲ ἔστι διαθέσεως τῷ πολύ χρονιώτερον εἶναι καὶ μονιμώτερον. τοιαῦτα δὲ αἱ τε ἐπιστήμαι καὶ αἱ ἁρετῶς τε λεγέσθωσαν. διαφέρει δὲ ἔστι διαθέσεως τῷ πολύ χρονιώτερον εἶναι καὶ μονιμώτερον. τοιαῦτα δὲ αἱ τε ἐπιστήμαι καὶ αἱ ἁρετῶς τε λεγέσθωσαν. διαφέρει δὲ ἔστι διαθέσεως τῷ πολύ χρονιώτερον εἶναι καὶ μονιμώτερον.
supposition and not really knowledge at all; you would no longer certainly know that a thing was possessed of more beauty than something possessed of less beauty. For, indeed, it might happen that nothing existed possessing less beauty. From all this, I think, it is plain that a definite knowledge of relatives means a like knowledge of those things whereunto they stand in a relation.

Yet a head or a hand is a substance, and men can have definite knowledge what such things essentially are, though without of necessity knowing to what they are also related. For whose is this head or this hand, that they cannot determinately know. But, if so, we are forced to conclude that these things and their like are not relatives, and, this being so, it would be true to affirm that no substance is relative. I think it is no easy matter to dogmatize over such problems without more exhaustive inquiry. To bring up the points in detail is, however, not itself wholly useless.

VIII. To quality let us turn next. By 'quality' I mean that in virtue of which men are called such and such. The word 'quality' has many senses. Let habits and dispositions here constitute one kind of quality. The former are unlike the latter in being more lasting and stable. Comprised among what we call 'habits' are virtues and all kinds of knowledge. For knowledge is considered as lasting and hard to displace from the mind, though a man may, in fact, have acquired it in only a moderate measure, unless some great change should come over him, thanks to disease or the like. And the same will hold good of the virtues—for instance, of temperance, justice. For these are allowed on all hands.


ARISTOTLE

δ) εὐμετάβολον. διαθέσεις δὲ λέγονται ᾧ ἐστὶν εὐ-
κινητα καὶ ταχῦ μεταβάλλοντα, οἷον θερμότης καὶ
καταψυχή καὶ νόσος καὶ ὑγίεια καὶ ὅσα ἄλλα
τοιαῦτα: διάκειται μὲν γάρ πως κατὰ ταύτας ὁ
ἀνθρώπος, ταχὺ δὲ μεταβάλλει ἐκ θερμοῦ ψυχρὸς
γενόμενος καὶ ἐκ τοῦ ὑγιαίνειν εἰς τὸ νοσεῖν,
ὡσαύτως δὲ καὶ ἐπὶ τῶν ἄλλων, εἰ μὴ τις καὶ
αὐτῶν τούτων τυγχάνοι διὰ χρόνου πλῆθος ἡ
πεφυσιωμένη καὶ ἀνίατος ἡ πάνω δυσκινήτητος ὦσα,
ἡν ἂν τις ἴσως ἔξω ἀν ἐποιεώνοι. φανερὸν

6 δὲ ὅτι ταύτα βουλονται ἐξεις λέγειν, ἢ ἐστὶν πολυ-
χρονιώτερα καὶ δυσκινητότερα· τοὺς γάρ τῶν ἐπι-
στημῶν μὴ πάνω κατέχοντας ἀλλ᾽ ἐκεῖνοις ὀφθα
οὐ φασιν ἔξιν ἔχειν ἔχειν, καίτοι διάκειταὶ γε πως κατὰ
τὴν ἐπιστήμην ἡ χεῖρον ἢ βέλτιον. ὥστε διαφέρει
ἐξεις διαθέσεως τῷ τὴν μὲν ἐκεῖνον ἐναὶ, τὴν δὲ

10 πολυχρονιώτεραν τε καὶ δυσκινητοτέραν. εἰσὶ δὲ
αἱ μὲν ἐξεις καὶ διαθέσεις, αἱ δὲ διαθέσεις ὀφθ'

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to be hard to dislodge or displace. Dispositions, however, are qualities easy to move or to change, such as heat, cold, disease, health and so on. A man is disposed in some manner according to all such conditions but rapidly undergoes change. Being warm, he may soon become cold; being well, he may soon become sick. So it is with all other dispositions, unless one should chance to become second nature through long lapse of time, proving either inveterate or else, at the least, very hard to displace, when we might, I think, call it a habit.

Those qualities, then, it is clear, men incline to denominate 'habits,' which are by their nature more lasting and are the more hard to displace. Those who cannot at all master knowledge and are of a changeable temper are scarcely described nowadays as possessing the 'habit' of knowing, although we may say that their minds, when regarded from that point of view, are disposed in a way towards knowledge—I mean, in a better or worse. Thus is habit unlike disposition; the former is lasting and stable, the latter soon undergoes change. Habits are also dispositions; dispositions are not always habits. While those who have habits are disposed in some manner or other in consequence, those who are some way disposed have by no means in each case a habit.

By the next kind of quality I mean that which leads us to speak of good boxers, good runners, the healthy or sickly. Indeed, it will cover all terms that denote any natural capacity, any innate incapacity. Not from their being disposed or conditioned in this or that manner, but rather from having a power, which is natural, innate or inborn, or, it may be, the lack of such power to achieve this or that.
ἡ μηδὲν πάσχειν, οἷον πυκτικοὶ οὐ τῷ
diakeίσθαι πως λέγονται ἀλλὰ τῷ δύναμιν ἔχειν
φυσικὴν τοῦ ποιῆσαι τῇ ῥᾴδιως, ὑγειεινοὶ δὲ λέγονται
tῷ δύναμιν ἔχειν φυσικὴν τοῦ μηδὲν πάσχειν ύπὸ
tῶν τυχόντων ῥᾴδιως, νοσώδεις δὲ τῷ ᾠδυναμίαν
ἔχειν φυσικὴν τοῦ μηδὲν πάσχειν ῥᾴδιως ύπὸ τῶν
tυχόντων. ὁμοίως δὲ τούτοις καὶ τῷ σκληρῷ
cαι τῷ μαλακῶν ἔχει: τὸ μὲν γὰρ σκληρὸν λέγεται
tῷ δύναμιν ἔχειν φυσικὴν τοῦ μηδὲν πάσχειν ῥᾳδίως, διαιρεύσθαι, τὸ δὲ
μαλακὸν τῷ ᾠδυναμίαν ἔχειν τοῦ αὐτοῦ τούτου.
Τρίτον δὲ γένος ποιότητος παθητικαί ποιότητες
καὶ πάθη. ἔστι δὲ τὰ τουάδε οἷον γλυκύτης τε καὶ
πικρότης καὶ στρυφνότης καὶ πάντα τὰ τούτους
συγγενῆ, ἐτὶ δὲ θερμοπής καὶ ψυχρότης καὶ λευκο-
κότης καὶ μελανία. ὅτι μὲν οὖν αὐταὶ ποιότητές
estatus, φανεροὶ τὰ γὰρ δεδεγμένα αὐτὰ ποιὰ λέγεται
καὶ αὐτάς, οἷον τὸ λευκὸν τῷ φωτεῖναι γλυκὺ
λέγεται καὶ τὸ σῶμα λευκῶν τῷ λευκότητα
cedeχθαι: ὡσαύτως δὲ καὶ ἐπὶ τῶν ἀλλῶν ἔχει.
Παθητικαί δὲ ποιότητες λέγονται οὐ τῷ αὐτά
τὰ δεδεγμένα τὰς ποιότητας πεποιθέναι τί: ὅποι
γὰρ τὸ μέλῃ τῷ πεποιθέναι τί λέγεται γλυκύ, ὅποι
τῶν ἀλλῶν τῶν τοιούτων οὐδέν. ὁμοίως δὲ τού-
τοις καὶ ἡ θερμότης καὶ ἡ ψυχρότης παθητικαὶ
6 ποιότητες λέγονται οὐ τῷ αὐτὰ τὰ δεδεγμένα
πεποιθέναι τί, τῷ δὲ κατὰ τὰς αἰσθήσεις ἑκάστην
tῶν εἰρημένων ποιοτήτων πάθους εἶναι ποιητικῆν
παθητικαί ποιότητες λέγονται: ἡ τε γὰρ γλυκύτης
thing with ease or avoid a defeat of some kind, do we say men possess such a quality. We call men good boxers or runners not in virtue of some disposition but owing to a natural capacity to do this or that thing with ease. When we speak of the healthy, we mean that such people have powers of resistance, ready, innate, constitutional, against all the commoner ills; when we speak of the sickly, we mean those who seem to possess no such powers. It is thus, too, with hardness and softness. We predicate hardness of that which resists ready disintegration and softness of that which does not.

To continue, the third class contains passive qualities and also affections. Examples are sweetness and bitterness, sourness and all things akin to them; such, too, are coldness and warmth; such are whiteness and blackness and so on. It is evident all these are qualities, seeing that the things that possess them are in consequence called such and such. Just as honey itself contains sweetness and, therefore, is said to be sweet, so the body itself contains whiteness and, therefore, is said to be white. So it is in all similar cases.

The qualities that we call passive are not, indeed, given that name to denote that the things which possess them are thereby in some way affected or undergo change in themselves. Thus we call honey sweet, as we said; but we do not imply that the honey itself is in some way affected. And so with all similar cases. Again, if we take heat and cold, though we call all such qualities passive, we do not imply that the things which admit or possess them are passive. We mean that the qualities mentioned can, one and all, cause a sensation. The sense, for
πάθος τι κατὰ τὴν γεῦσιν ἐμποτεὶ καὶ ἡ θερμότης κατὰ τὴν ἀφήν. ὁμοίως δὲ καὶ αἱ ἄλλαι.

10 Λευκότης δὲ καὶ μελανία καὶ αἱ ἄλλαι χροιαὶ οὐ τὸν αὐτὸν τρόπον τοῖς εἰρημένοις παθητικαὶ ποιότητες λέγονται, ἄλλα τῷ αὐτῶς ἀπὸ πάθους γεγονέναι. ὅτι μὲν οὖν γίνονται διὰ πάθος πολλαὶ μεταβολαὶ χρωμάτων, δὴ λοι: αἰσχυνθῆις γὰρ τις ἐρυθρὸς ἐγένετο καὶ φοβηθῆις ὠχρὸς καὶ ἐκαστὸν τῶν τοιούτων. ὅστε καὶ εἰ τις φύσει τῶν τοιούτων τι παθῶν πέπονθεν ἐκ τινῶν φυσικῶν συμπτωμάτων, τὴν ὁμοιοῦχον καὶ μελανίαν εἰκότως ἐστὶν αὐτῶν ἠτις γὰρ νῦν ἐν τῷ αἰσχυνθῆναι ἀπὸ πάθος γεγονότως ἄν, ὅστε φύσει καὶ τὴν χροιαν ὁμοίαν γίγνεσθαι. ὅσα μὲν οὖν τῶν τοιούτων συμπτωμάτων ἀπὸ τινῶν παθῶν δυσκινήτων καὶ παραμονίων τὴν ἀρχὴν εἰληφε, παθητικαὶ ποιότητες λέγονται. εἴτε γὰρ ἐν τῇ κατὰ φύσιν συστάσει ὑχρότης ἢ μελανία γεγενηθῇ, ποιότητες λέγονται (ποιοὶ γὰρ κατὰ ταύτας λεγόμεθα), εἴτε διὰ νόσου ὁμοίως γὰρ κατὰ ταύτας λεγόμεθα. ὁμοίως γὰρ κατὰ ταύτας λεγόμεθα.
example, of taste is affected by sweetness or sourness, by coldness or warmth that of touch. So it is with all qualities like them.

All colours, as whiteness or blackness, are qualities also and passive, but not in the same sense, however, as those we have hitherto mentioned. We give them that name from the fact that they spring from affections or passions. There are numerous changes of colour that clearly arise from affections. When men are ashamed, then they blush; when alarmed, they turn pale and so on. So much is this really the case that, I think, when a man is by nature disposed towards shame or alarm as arising from a certain concomitance of bodily elements in him, we may not unfairly conclude that he takes on the corresponding colour. For that state of the bodily elements which for the moment accompanied the feeling of shame or alarm might very well also result from his physical organization, and thus a like colour might also arise in the process of nature. All states of this kind may be, therefore, included among passive qualities, seeing their source can be found in some constant and lasting affection. For whether their source can be found in the bodily organization or in long disease or sunburn, when they cannot be lightly removed and may even endure throughout life, yet a pale and a dusky complexion are always called qualities by us, because we are called such and such from our having that pallor or duskiness.

Conditions, however, arising from causes soon rendered inoperative, if not entirely removed, will be known as affections, not qualities, seeing that no one is called such and such on account of those con-
οὔτε γὰρ ὁ ἐρυθριῶν διὰ τὸ αἰσχυνθῆναι ἔρυθριας λέγεται, οὔτε ὁ ωχριῶν διὰ τὸ φοβηθῆναι ωχρίας, ἀλλὰ μᾶλλον πεπονθέναι τι. ὡστε πάθη μὲν τὰ τοιαῦτα λέγεται, ποιότητες δὲ οὐ.

'Ομοίως δὲ τούτοις καὶ κατὰ τὴν ψυχὴν πα-
θητικαὶ ποιότητες καὶ πάθη λέγεται. Ὅσα γὰρ ἐν τῇ γενέσει εὐθὺς ἀπό των παθῶν δυσκωπήτων γεγένηται, ποιότητες λέγονται, οἷον ἡ τε μανική ἐκστασις καὶ ἡ ὀργή καὶ τὰ κατὰ ταύτας λέγονται, ὀργίλοι τε καὶ μανικοὶ. ὡστε μὲν λέγεται τὰ τοιαῦτα, ποιότητες δὲ οὔ. ὅσα γὰρ ἐν τῇ γενέσει εὐθὺς ἀπό των παθῶν δυσκωπήτων γεγένηται, ποιότητες λέγονται, οἷον ἡ τε μανική ἐκστασις καὶ ἡ ὀργή καὶ τὰ κατὰ ταύτας λέγονται, ὀργίλοι τε καὶ μανικοὶ. ὡστε μὲν λέγεται τὰ τοιαῦτα, ποιότητες δὲ οὔ.

Τέσσαρον δὲ γένος ποιότητος σχῆμα те καὶ ἢ περὶ ἐκαστόστου ὑπάρχουσα μορφή, ἐτὶ δὲ πρὸς τούτοις εὐθύτης καὶ καμπυλότης, καὶ εἰ τι τούτοις ὁμοίων ἐστίν. καθ᾽ ἐκαστὸν γὰρ τούτων ποιῶν τὶ λέγεται: τῷ γὰρ τρίγωνον ἡ τετράγωνον εἶναι ποιῶν τι λέγεται, καὶ τῷ εὐθῦ ἡ καμπυλός. καὶ κατὰ τὴν μορφὴν δὲ ἐκαστὸν ποιῶν τὶ λέγεται. τὸ δὲ μανῶν καὶ τὸ πυκνῶν καὶ τὸ τραχὺ καὶ τὸ
ditions. He who blushes from shame is not, therefore, regarded as naturally ruddy, nor he who becomes pale from fear as one having a pallid complexion. We say 'So-and-so was affected.' Such states are affections, not qualities.

Likewise, there are in the soul passive qualities and also affections. When a man has a temper from birth and its source is in certain affections not easy to change or remove, then we give it the name of a quality. Madness and irascibility and so on are cases in point. For it is on account of such things that we call a man mad or irascible. Likewise, distractions of mind, which, although not innate in themselves, yet arise from a certain concomitance of some other elements in him and seem to be either enduring or at least very hard to remove, are denominated qualities also. For people are called such and such on account of conditions like these. On the contrary, those which arise from some source that is readily healed we shall call by the name of affections, such as being somewhat angry, when vexed. For a man is not known as bad-tempered from being, when vexed, somewhat angry. We say 'Such a man is affected.' Such states are affections, not qualities.

Of quality the fourth kind consists of the forms and the figures of things; add to these also crookedness, straightness and all other qualities like them. For things are defined by these also as being of such and such nature. And things have a definite nature by being 'triangular,' 'quadrangular,' by being 'straight,' 'crooked' and so on. In virtue, indeed, of its figure or shape is each thing qualified. Rare and dense, rough and smooth, while appearing at
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λείον δόξειε μὲν ἂν ποιῶν τι σημαίνειν, ἐσικε δὲ ἀλλότρια τὰ τοιαύτα εἶναι τῆς περὶ τὸ ποιῶν

diairέσεως. θέσιν γάρ μᾶλλον των φαίνεται τῶν μορίων ἐκάτερον δηλοῦν. πυκνὸν μὲν γὰρ τῷ τὰ μόρια σύνεγγυς εἶναι ἀλλήλοις, μανὸν δὲ τῷ διεστάναι ἀπ’ ἀλλήλων· καὶ λεῖον μὲν τῷ ἐπ’ εὐθείας πῶς τά μόρια κείσθαι, τραχὺ δὲ τῷ τὸ μὲν ὑπερέχειν τὸ δὲ ἐλλείπειν.

Ἰσως μὲν οὖν καὶ ἄλλος ἂν τις φανεῖ ἑτῶρος ποιότητος, ἀλλ’ οἱ γε μάλιστα λεγόμενοι σχεδὸν οὕτωι εἶσιν.

Ποιότητες μὲν οὖν εἰσίν αἱ εἰρημέναι, ποιὰ δὲ τὰ κατὰ ταύτας παρωνύμως λεγόμενα ἦ ὀπωσοῦν

οἷς καὶ σχεδὸν ἐπὶ πάντων παρωνύμως λέγεται, οἷον ἀπὸ τῆς λευκότητος λευκὸς καὶ ἀπὸ τῆς γραμματικῆς γραμματικὸς καὶ ἀπὸ τῆς δικαιοσύνης δίκαιος, ὤποιτες δὲ καὶ ἐπὶ τῶν άλλων.

Ἐπ’ ἐνίων δὲ διὰ τὸ μὴ κεῖσθαι ταῖς ποιότησιν ὀνόματα οὐκ ἐνδέχεται παρωνύμως ἀπ’ αὐτῶν

λέγεσθαι οἷον δρομικὸς ἢ πυκτικὸς ὃ κατὰ δύναμιν φυσικὴν λεγόμενος ἀπ’ οὐδεμίᾶς ποιότητος παρωνύμως λέγεται: οὐ γὰρ κεῖται ὀνόματα ταῖς δυνάμεσι καθ’ ὃς οὕτωι ποιοὶ λέγονται, ὡσπερ ταῖς ἐπιστήμης καθ’ ὃς πυκτικοὶ ἢ παλαιστρικοὶ κατὰ διάθεσιν λέγονται: πυκτικὴ γὰρ λέγεται ἐπιστήμη

καὶ παλαιστρικὴ, ποιοὶ δ’ ἀπὸ τούτων παρωνύμως οἱ διακείμενοι λέγονται. ἐνίοτε δὲ καὶ ὀνόματος κειμένου οὐ λέγεται παρωνύμως τὸ κατ’ αὐτὴν ποιῶν λεγόμενον, οἷον ἀπὸ τῆς ἀρετῆς ὁ σπου-
first sight to indicate quality, are foreign, in fact, from that class. They will rather be found to denote a particular position of the parts. Thus we call a thing dense, when the parts that compose it are closely compacted, but rare, when those parts have interstices; rough, when some parts are projecting, but smooth, when the surface is smooth, upon which, so to speak, lie those parts.

These are the four kinds of quality. Others there possibly may be, but these are those strictly so called. Qualities, then, are those mentioned. The things that derive their names from them or depend in some other way on them are said to be things qualified in some definite manner or other. In most—indeed, nearly all—cases the names of the qualified things are derived from the names of the qualities. From 'whiteness,' from 'grammar,' from 'justice,' we have 'white,' 'grammatical,' 'just.' So with all other similar cases.

Sometimes, however, the qualities having no names of their own, no derivative names can exist. Thus the name of the runner or boxer, so called from an innate capacity, cannot be derived from a quality. That is to say, such capacities have no particular names, as the sciences have, with a reference to which we call one man a boxer, another a wrestler and so on. By a science we mean a disposition; each science, too, has its own name, such as boxing, for instance, or wrestling. And those who are that way disposed get their name from the name of the science. Sometimes, moreover, the quality possesses a well-defined name, but the thing that partakes of its nature does not also take its name from it. For instance, a good man is good from possessing the
"Ἠ δαῖος· τῷ γὰρ ἀρετὴν ἔχειν σπουδαῖος λέγεται, ἀλλ᾽ οὐ παρωνύμως ἀπὸ τῆς ἀρετῆς. οὐκ ἐπὶ πολλῶν
dὲ τὸ τοιούτων ἔστων.
Ποιὰ τοίνυν λέγεται τὰ παρωνύμως ἀπὸ τῶν εἰρημένων ποιοτήτων λεγόμενα ἢ ὁπωσοῦν ἄλλως
ἀπ᾽ αὐτῶν.
Ὑπάρχει δὲ καὶ ἑναντίωτης κατὰ τὸ ποιόν, οἷον
dικαιοσύνη ἄδικια ἑναντίων καὶ λευκότης μελανία
καὶ τὰλλα δὲ ὦσαύτως, καὶ τὰ κατ᾽ αὐτὰς ποιά
λεγόμενα, οἷον τὸ ἄδικον τῷ ἄδικῳ καὶ τὸ λευκὸν
tῷ μέλανι. οὐκ ἐπὶ πάντων δὲ τὸ τοιοῦτο· τῷ
gὰρ πυρρῷ ἤ ὦχρῷ ἢ ταῖς τοιαύταις χρωμαῖς οὐδὲν
ἠναντίον ποιῶς οὖσιν.
"Επὶ δὲ, ἐὰν τῶν ἑναντίων βάτερον ἢ ποιῶν, καὶ
tὸ λοιπὸν ἔσται ποιῶν. τούτῳ δὲ δήλων προ-
χειριζομένως τὰς ἄλλας κατηγοριάς, οἷον εἰ ἔστων
ἡ δικαιοσύνη τῇ ἄδικια ἑναντίων, ποιῶν δὲ ἢ
dικαιοσύνη, ποιῶν ἀρα καὶ ἢ ἄδικια· οὐδεμία γὰρ
tῶν ἄλλων κατηγοριῶν ἐφαρμόζει τῇ ἄδικιᾳ.
οὔτε γὰρ τὸ ποσὸν οὔτε τὸ πρὸς τι οὔτε ποῦ οὔθ'
όλως τὶ τῶν τοιούτων οὐδὲν, ἀλλ᾽ ἢ ποιῶν. ἀλλ᾽
αὐτῶς δὲ καὶ ἐπὶ τῶν ἄλλων τῶν κατὰ τὸ ποιῶν
ἑναντίων.
"Επιδέχεται δὲ τὸ μᾶλλον καὶ τὸ ἤττον τὰ ποιά.
λευκὸν γὰρ μᾶλλον καὶ ἤττον ἔτερον ἔτερον
λέγεται, καὶ δικαιόν ἔτερον ἔτερον μᾶλλον. καὶ
αὐτὸ δὲ ἐπίδοσιν λαμβάνει· λευκὸν γὰρ ὃν ἔτι
ἐνδέχεται λευκότερον γενέσθαι. οὐ πάντα δὲ,
ἀλλὰ τὰ πλεῖστα. δικαιοσύνη γὰρ δικαιοσύνης εἰ
λέγεται μᾶλλον καὶ ἤττον, ἀπορήσεις ἂν τὶς
ὅμοιως δὲ καὶ ἐπὶ τῶν ἄλλων διαθέσεων. ἐνοι
γάρ διαμφισβητοῦσι περὶ τῶν τοιούτων· δικαιο-
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quality, virtue. We do not, however, derive the term, 'good,' from the other term, 'virtue.' Yet this is seldom the case.

Thus those things have a definite quality which have derived their name from it or in some other way depend on it.

Qualities admit contrariety—not in all cases, however. Justice and injustice are contraries, blackness and whiteness and so on. The things that are called such and such on account of their having these qualities also fall into this class. For the just and the unjust are contraries, the black and the white thing and so on. But this is not so in all cases. Red, yellow and similar colours are qualities that have no contraries.

If one of two contraries is a quality, the other is also a quality. This will be clear to whoever examines the rest of the categories. Injustice is contrary to justice, and justice itself is a quality: so, then, is also injustice. For no other category fits it, not quantity, neither relation, nor place, nor, in short, any other. This holds in the case of all contraries that we denominate qualities.

Qualities admit of degrees. For one thing is more white than another; another, again, is less white. And one thing is more just than another. And a thing may get more of a quality; for things that are white may get whiter. This rule, while it holds in most cases, is subject to certain exceptions. For if justice could be more or less justice, certain problems might thereon arise, as is also the case with all qualities which we may call dispositions. And some go so far as to say that these cannot admit of degrees. Health and justice them-
10 b σύνην μὲν γὰρ δικαιοσύνης οὐ πάνυ φασὶ δεῖν λέγεσθαι μᾶλλον καὶ ἦττον, οὐδὲ ὑγίειαν ὑγιείας, ἦττον μὲντοι ἐχευν ἐτέρον ἑτέρου ὑγίειαν, καὶ 
11 a δικαιοσύνην ἑτέρον ἑτέρον, ὑσαύτως δὲ καὶ γραμματική η καὶ τὰς ἄλλας διαθέσεις. ἀλλ' οὖν τὰ γε κατὰ ταύτας λεγόμενα ἀναμφισβητήτως ἐπιδέχεται τὸ μᾶλλον καὶ τὸ ἦττον γραμματικότερος γάρ ἑτέρον ἑτέραν λέγεται καὶ ὑγιεινότερος καὶ 
5 δικαιότερος, καὶ ἐπὶ τῶν ἄλλων ὑσαύτως.}

Τρίγωνον δὲ καὶ τετράγωνον οὐ δοκεῖ τὸ μᾶλλον ἐπιδέχεσθαι, οὐδὲ τῶν ἄλλων σχημάτων οὐδέν. τὰ μὲν γὰρ ἐπιδεχόμενα τὸν τοῦ τριγώνου λόγον ἢ τὸν τοῦ κύκλου πάνθ' ὁμοίως τρίγωνα ἢ κύκλου εἰσί, τῶν δὲ μὴ ἐπιδεχομένων οὐδὲν μᾶλλον ἑτέρον ἐτέρου ῥηθήσεται. οὐδὲν γὰρ μᾶλλον τὸ ἑτερομήκους κύκλος ἐστὶν: οὐδέτερον ἐπιδέχεται ἐν τοῦ κύκλου λόγον. ἀπλῶς δὲ, ἐὰν μὴ ἐπιδέχεται ἀμφότερα τὸν τοῦ προκειμένου λόγον, οὐ ῥηθήσεται τὸ ἑτέρου μᾶλλον. οὐ πάντα οὖν τὰ ποιὰ ἐπιδέχεσθαι τὸ μᾶλλον καὶ 
10 

15 Τῶν μὲν οὖν εἰρημένων οὐδὲν ἴδιον ποιότητος, ὁμοία δὲ καὶ ἀνόμοια κατὰ μόνας τὰς ποιότητας λέγεται: ὁμοίων γὰρ ἑτέρων ὡστε κατ' ἄλλο οὖν ἢ καθ' ὁ ποιῶν ἐστὶν. ῥηθήσεται τὸ οὐδενὸς τούτος καὶ ἀνόμοιον λέγεσθαι κατ' αὐτὴν. 

20 Οὐ δεῖ δὲ ταράττεσθαι, μή τις ἡμᾶς φήσῃ ὑπέρ ποιότητος τὴν πρόθεσιν ποιησάμενος πολλὰ τῶν πρός τι συγκαταριθμεῖσθαι: τὰς γὰρ ἔξεις καὶ διαθέσεις τῶν πρός τι εἶναι ἐλέγομεν. σχεδον γὰρ ἐπὶ πάντων νοοῦμεν τὰ γένη πρός τι λέγεται.
selves, they contend, are not subject to such varia-
tions, but people in varying degrees are possessed of
health, justice and so on. The same with gram-
matical knowledge and all dispositions soever. And
certainly none can deny that the things that are
marked by such qualities have them in more or less
measure. This man will know more about grammar,
be healthier or juster than that.

Terms that express a thing's figure—'triangular,'
'rectangular' and so on—can hardly admit of degrees.
For the objects to which the definition applies of
triangle or circle are equally triangular or circular.
Others, to which the definition of neither of these
things applies, cannot differ themselves in degree.
For the square is no more of a circle than is—let us
say—the rectangle. To neither of these the definition
we give of a circle applies. So, unless, in a word,
the definition of the thing or the term thus in question
is appropriate to both of the objects, they cannot at
all be compared. Not all qualities, then, have degrees.

The aforementioned characteristics are no way
peculiar to quality. What is peculiar is this, that we
predicate 'like' and 'unlike' with a reference to
quality only. For one thing is like to another in
respect of some quality only. So this is distinctive of
quality.

It must not cause us trouble, however, if someone
objects to our statements that, quality being our
theme, we include in that category also a good
many relative terms. For both habits and dis-
positions we admitted to be relative terms. Now,
at least in most cases, it happens that the genera,
"Ωστε αἱ καθ᾽ ἕκαστα οὐκ εἰσὶ τῶν πρὸς τι. λεγόμεθα δὲ ποιοὶ ταῖς καθ᾽ ἕκαστας γὰρ καὶ ἔχουσιν. ἐπιστήμονες γὰρ λεγόμεθα τῷ ἔχειν τῶν καθ᾽ ἕκαστα ἐπιστήμων τινὰ. ὡστε αὐτοὶ ἄν καὶ ποιότητες εἰσαγαγοῦσιν, αἱ καθ᾽ ἑκαστά, καὶ ἕς ποτὲ καὶ ποιοὶ λεγόμεθα· αὐτοὶ δὲ οὔκ εἰσὶ τῶν πρὸς τι. ἐτι εἰ τυγχάνοι τὸ αὐτὸ πρὸς τι καὶ ποιοὶ ὃν, οὐδὲν ἄτοπον ἐν ἀμφοτέροις τοῖς γένεσιν αὐτὸ καταριθμεῖσθαι.

IX. Ἡπιδέχεται δὲ καὶ τὸ ποιεῖν καὶ τὸ πάσχειν ἐναντίοτητα καὶ τὸ μᾶλλον καὶ τὸ ἤττον· τὸ γὰρ θερμαίνειν τῷ ψύχειν ἐναντίον καὶ τὸ θερμαίνεσθαι τῷ ψύχεσθαι καὶ τὸ ἤδεσθαι τῷ λυπεῖσθαι, ὡστε ἐπιδέχεται ἐναντίοτητα. καὶ τὸ μᾶλλον δὲ καὶ ἤττον· θερμαίνειν γὰρ μᾶλλον καὶ ἤττον ἐστιν, καὶ θερμαίνεσθαι μᾶλλον καὶ ἤττον. ἐπιδέχεται οὖν τὸ μᾶλλον καὶ τὸ ἤττον τὸ ποιεῖν καὶ τὸ πάσχειν.
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doubtless, are relative; not so the individuals. Knowledge, the genus, we define by a reference to something beyond it, for knowledge is knowledge of something. Particular branches, however, of knowledge are not thus explained. For example, we do not define by a reference to something external a knowledge of grammar or music. For these, if in some sense relations, can only be taken for such in respect of their genus or knowledge. That is to say, we call grammar the knowledge, not grammar, of something, and music we call, in like manner, the knowledge, not music, of something.

Thus particular branches of knowledge are not to be classed among relatives. People are called such and such from possessing these branches of knowledge. These are the things they possess, being, therefore, called 'knowing' or 'expert,' and never the genus or knowledge. And, therefore, those branches of knowledge, in virtue of which we are sometimes described as of such and such nature, themselves must come under the category of quality, not of relation. Moreover, if anything happened to be both relation and quality, then it were nowise absurd to include it in both of these categories.

IX. Action and affection (or passion) have contraries and also degrees. That is, heating is contrary to cooling, as also being cooled to being heated or, again, being pleased to being pained. Thus it is they admit contrariety. Moreover, they allow of degrees; for you can heat or be heated more or less. Hence it follows that both action and affection may admit of variations of degree.

Of these categories so much is stated. Posture or position we spoke of, when dealing before with
παρωνύμως ἀπὸ τῶν θέσεων λέγεται. ὑπὲρ δὲ τῶν λοιπῶν, τοῦ τε ποτὲ καὶ τοῦ ποῦ καὶ τοῦ ἥχειν, διὰ τὸ προφανῆ εἶναι οὐδὲν ὑπὲρ αὐτῶν ἀλλὰ λέγεται ἡ ὁσα ἐν ἀρχῇ ἔρρεθη, ὅτι τὸ ἥχειν μὲν σημαίνει τὸ ὑποδεδέσθαι, τὸ ὑπελίσθαι, τὸ δὲ ποῦ ὁσον ἐν Αὐκείω, καὶ τὰ ἀλλα δὲ ὁσα ὑπὲρ αὐτῶν ἕρρεθη.

15 Χ. Ὑπὲρ μὲν οὖν τῶν προτεθέντων γενών ἰκανά τὰ εἰρημένα, περὶ δὲ τῶν ἀντικειμένων, ποσαχὼς εἰσώθην ἀντικεισθαι, ὑπὲρ δὲ ἐπερον ἐτέρω ἀντικεισθαι τετραχῶς, ἡ ὁσον τὰ προς τι, ἡ ὁσον τὰ ἑναιτία, ἡ ὁσον στέρησι καὶ ἐξισ, ἡ ὁσον κατάφασις καὶ ἀπόφασις. ἀντικεῖται δὲ ἐκαστον τῶν τοιοτῶν ὡς τύπων εἰς εἰς ὡς μὲν τὰ προς τι, ὓπον τὸ διπλάσιον τῶν ἑμίσει, ὡς δὲ τὰ ἑναιτία, ὑπὸ τὸ κακὸν τῶν ἀγαθῶ, ὡς δὲ τὰ κατὰ στέρησις καὶ ἐξισ, ὑπὸν τοῦ ὑφλότης καὶ ὑπὶ, ὡς δὲ κατάφασις καὶ ἀπόφασις, ὑπὸν καθῆται—ὑπὸ καθῆται.

20 ὡσα μὲν οὖν ὡς τὰ προς τι ἀντικεῖται, αὐτὰ ἅπερ ἐστὶ τῶν ἀντικειμένων λέγεται ἡ ὁπωσοῦν ἄλλως πρὸς αὐτά, ὑπὸ τὸ διπλάσιον, αὐτὸ ὡς ἐπερ ἐστὶ, ὑπὸ τὸ διπλάσιον λέγεται τινὸς γὰρ διπλάσιον. καὶ ἡ ἑπιστήμη ὡς τῶν ἑπιστητῶν ὡς τὰ πρὸς τι ἀντικεῖται, καὶ λέγεται ἡ ἑπιστήμη αὐτὸ ὡς ἐπερ ἐστὶ τοῦ ἑπιστητοῦ, καὶ τὸ ἑπιστητὸν δὲ αὐτὸ ὡς ἐπερ ἐστὶ πρὸς αὐτοῖν ἐπιστητῶν λέγεται, τὴν ἑπιστήμην τῷ γὰρ ἑπιστητῶν τῷ λέγεται ἑπιστησιτῶν, τῇ ἑπιστήμη. ὁσα οὖν ἀντικεῖται ὡς τὰ

* The chapters that follow are commonly regarded by scholars as spurious.
relation. We said that such terms get their names from the attitudes corresponding to them. The rest, that is, time, place and state, are so clear that I need say no more than I said at the very beginning—that a state is intended by terms such as being 'shod,' 'armed' and the like, whereas place is intended by phrases like 'in the Lyceum' and so forth.

X. We have now said enough on the subject of the categories that we proposed, and with opposites next we must deal and the various senses of the word. For we call things opposed in four ways—first of all, as correlatives are, either term of each pair to the other; in the next place, as contraries are; in the third place, as privatives to positives; lastly, as affirmatives to negatives. Speaking in outline, I mean that correlatives that are opposed are expressions like 'double' and 'half,' while of contraries that are opposed we may take 'good' and 'bad' for examples. Of privative and positive terms we may here mention 'blindness' and 'sight,' 'he is sitting' and 'he is not sitting' in the case of affirmatives and negatives.

Opposites, when relatives also, our custom it is to explain by referring the one to the other and using the genitive case or some other grammatical construction. Thus 'double,' a relative term, is explained as the double of something. And knowledge, a relative term, is opposed to the thing that is known and explained by a reference to it. The thing that is known is explained by a reference to its opposite, to knowledge: for the thing that is known will be known by a something—more precisely, by knowledge. All opposites, then, are
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11 b
πρός τι, αὐτὰ ἀπερ ἐστὶν ἐτέρων λέγεται ἢ ὅπως-
δήποτε πρὸς ἄλληλα λέγεται.

35 Ῥὸς δὲ τὰ ἐναντία, αὐτὰ μὲν ἀπερ
ἐστὶν οὐδαμῶς πρὸς ἄλληλα λέγεται, ἐναντία
μέντοι ἄλληλων λέγεται: οὔτε γὰρ τὸ ἀγαθὸν τοῦ
κακοῦ λέγεται ἀγαθόν, ἀλλʼ ἐναντίον, οὔτε τὸ
λευκὸν τοῦ μέλανος λευκὸν, ἀλλʼ ἐναντίον. ὡστε
διαφέρονσιν αὐταί αἰ ἀντιθέσεις ἄλληλων. ὅσα δὲ
12 α τῶν ἐναντίων τοιαῦτα ἐστιν ὡστε ἐν ὅσι πέρυκε
γίνεσθαι ἢ ὅν κατηγορεῖται ἀναγκαίον αὐτῶν
θάτερον ὑπάρχειν, τούτων οὐδέν ἐστιν ἀνὰ μέσον.
ἀλλʼ ὅς γε ἄνα γαζαίον θάτερον ὑπάρχειν, τούτων
ἔστι τι ἀνὰ μέσον πάντως, οἷον νόσου καὶ ὑγίεια
5 ἐν σώματι ζωγοὺερ πέρυκε γίνεσθαι, καὶ ἀναγκαίον
γε θάτερον ὑπάρχειν τῷ τοῦ ζώου σώματι, ἢ
νόσου ἢ ὑγίειαν. καὶ περίττων δὲ καὶ ἀρτιοῦ
ἄριθμοῦ κατηγορεῖται, καὶ ἀναγκαίον γε θάτερον
τῷ ἀριθμῷ ὑπάρχειν, ἢ περίττων ἢ ἄρτιον. καὶ
οὐκ ἔστι γε τούτων οὐδέν ἀνὰ μέσον, οὔτε νόσου
10 καὶ ὑγιείας οὔτε περίττων καὶ ἀρτιοῦ. ὅν δὲ γε
μὴ ἀναγκαίον θάτερον ὑπάρχειν, τούτων ἐστι τι
ἀνὰ μέσον, οἶον μέλαν καὶ λευκὸν ἐν σώματι
πέρυκε γίνεσθαι, καὶ οὐκ ἀναγκαίον γε θάτερον
αὐτῶν ὑπάρχειν τῷ σώματι. οὐ γὰρ πᾶν ἦτοι
λευκὸν ἢ μέλαν ἐστίν. καὶ φαυλοῦν δὲ καὶ σπουδαίον
15 κατηγορεῖται μὲν καὶ καὶ ἀνθρώπου καὶ κατὰ
ἀλλων πολλῶν, οὐκ ἀναγκαίον γε θάτερον αὐτῶν
ὑπάρχειν ἐκείνοις ὅν ἂν κατηγορηταί: οὐ γὰρ
πάντα ἢτοι φαυλα ἢ σπουδαία ἐστιν. καὶ ἐστι
γέ τι τούτων ἀνὰ μέσον, οἶον τοῦ μὲν λευκοῦ καὶ
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explained by referring the one to the other and using the genitive case or some other grammatical construction, when these are correlative also.

Opposites are no way dependent, when contraries, the one upon the other but are contrary one to the other. The good is not called, for example, the good of the bad but its contrary. Similarly, white is not known as the white of the black but its contrary. Thus these two kinds of opposition are entirely distinct from one another. But contraries such that the subjects in which they are naturally found or of which they can be predicated must needs contain the one or the other—these never can have intermediates. When there is no such necessity, then the reverse is the case, and they always will have an intermediate. For example, both health and disease may be said to be naturally present in the bodies of all living things, and in consequence one or the other must be present in animal bodies. We predicate both odd and even in similar manner of number; in consequence, one or the other must always be present in number. Now, health and disease, odd and even, have no intermediate between them. But where there is no such necessity, then the reverse is the case. For example, both blackness and whiteness are naturally present in body, but neither need be in a body. For not every body existing must either be black or be white. Then we predicate goodness and badness of man, as of many things else. Neither goodness nor badness, however, although they are predicated of them, is present of necessity in them. Not all things are good or are bad. Now, such contraries have intermediates. Between black and white, for example, are sallow and
See ree δμέλανος τὸ φαιὸν καὶ τὸ ωχρὸν καὶ ὅσα ἄλλα χρώματα, τοῦ δὲ φαύλου καὶ σπουδαίου τὸ οὔτε φαύλον οὔτε σπουδαίον. ἐπ’ ἐνίων μὲν οὖν ὅνοματα κεῖται τοῖς ἀνὰ μέσον, οἶον λευκοῦ καὶ μέλανος τὸ φαιὸν καὶ τὸ ωχρὸν καὶ ὅσα ἄλλα χρώματα· ἐπ’ ἐνίων δὲ ὅνοματι μὲν οὖν εὐπορον τὸ ἀνὰ μέσον ἀποδοῦναι, τῇ δ’ ἐκατέροι τῶν ἀκρῶν ἀποφάσει τὸ ἀνὰ μέσον ὀρίζεται, οἶον τὸ οὔτε ἀγαθὸν οὔτε κακὸν καὶ οὐτε δίκαιον οὔτε ἀδικον.

Στέρησις δὲ καὶ ἐξις λέγεται μὲν περὶ ταύτων τι, οἶον ἡ ὄψις καὶ ἡ τυφλότης περὶ ὀφθαλμῶν· καθόλου δὲ εἰπεῖν, ἐν ὑπάρχειν καὶ ὅτε πέφυκεν ἐκαστικῶς, ἐπὶ τοῦτο λέγεται ἐκατέροι αὐτῶν. ἐστιν δὲ τότε λέγομεν ἐκαστικῶς τῶν τῆς ἐξις δεκαπεν, ὅταν ἐν ὑπάρχειν καὶ ὅτε πέφυκεν ἐχειν μηδαμῶς ὑπάρχη. νωδὸν τε γὰρ λέγομεν οὐ τὸ μὴ ἔχον ὀδόντας, καὶ τυφλὸν οὐ τὸ μὴ ἔχον ὀψιν, ἀλλὰ τὸ μὴ ἔχον ὀδόντας, ὑπάρχη. γὰρ ἐκ γενετῆς οὐτε ὀψιν ἐχειν ὑπάρχη. τὶνα γὰρ ἐκ γενετῆς οὐτε ὀψιν ἐχειν ὑπάρχη. ἀλλ’ οὐ τὸ μὴ ἔχον ὀδόντας, ὑπάρχη. τὸ δὲ ἐστιν καὶ τὸ τὴν ἐχειν οὐκ ἔστι στέρησις καὶ ἐξις. ἐχειν μὲν γὰρ ἔστιν ὅψις, στέρησις δὲ ἡ τυφλότης· τὸ δὲ ἐχειν τὴν ὀψιν οὐκ ἔστιν ὅψις, οὐδὲ τὸ τυφλὸν εἶναι τυφλότης. στέρησις γὰρ τὸς ἡ τυφλότης ἔστιν, τὸ δὲ τυφλὸν εἶναι ἐστιν εὐπορον, οὐ στέρησις ἔστιν. ἐτι εὶ ἢν ἢ
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grey and so forth, while between good and bad we have that which is neither the one nor the other. And some intermediate qualities have their own recognized names. We may take as examples again grey and sallow and similar colours, intermediate between white and black. In some of the cases, however, to name them were no easy matter. We then must define the intermediate as that which is neither extreme—'neither good nor yet bad,' for example, 'neither just nor unjust,' and so forth.

What are called 'privatives' and 'positives' refer to identical subjects, as blindness and sight to the eye. It is ever the case with such pairs that we predicate one or the other, wherever the particular 'positive' is naturally found or produced. Thus we say that what may have a faculty then is deprived of that faculty, when it is totally absent and yet should be naturally present and present also at that time. Not what is without teeth or sight do we, therefore, call toothless or blind. But we rather use those terms of that which has not but should have teeth or sight and should have teeth or sight at that time. For, indeed, certain creatures there are which from birth have no teeth or no sight but are not known as toothless or blind.

To possess and to be without faculties cannot be considered the same with the corresponding 'positives' and 'privatives.' 'Sight' is, for instance, a 'positive,' 'blindness,' its opposite, a 'privative.' 'Sight' and 'to have sight,' however, must not be considered identical. So 'to be blind' is not 'blindness.' For 'blindness,' we said, is a 'privative,' but 'to be blind' signifies a condition of want or privation. 'To be blind' is itself not a 'privative.' This may,
ἈΡΙΣΤΟΤΛΕ

12 a

10 τυφλότης ταύτων τῷ τυφλῶν εἶναι, κατηγορεῖτο ἂν ἀμφότερα κατὰ τοῦ αὐτοῦ: ἄλλα τυφλὸς μὲν
12 βλέγεται ὁ ἄνθρωπος, τυφλότης δὲ οὐδαμῶς λέγεται ὁ ἄνθρωπος.

'Αντικεῖσθαι δὲ καὶ ταῦτα δοκεῖ, τὸ ἐστερῆσθαι καὶ τὸ τὴν ἐξεὶ ἔχειν, ὡς στέρησις καὶ ἔξει: ὁ γὰρ τρόπος τῆς ἀντιθέσεως ὁ αὐτὸς: ὡς γὰρ ἡ τυφλότης τῇ ὀψεὶ ἀντίκειται, οὖτω καὶ τὸ τυφλὸν εἶναι τῷ ὀψιν ἔχειν ἀντίκειται.

Ὁὐκ ἔστι δὲ καὶ οὐδὲ τὸ ὑπὸ τὴν ἀπόφασιν καὶ κατάφασιν ἀπόφασις καὶ κατάφασις: ἡ μὲν γὰρ κατάφασις λόγος ἐστὶ καταφατικὸς καὶ ἡ ἀπόφασις λόγος ἀποφατικός, τῶν δὲ ὑπὸ τὴν κατάφασιν καὶ ἀπόφασιν οὐδέν ἐστὶ λόγος. λέγεται δὲ καὶ ταῦτα ἀντικεῖσθαι ἄλληλοις ὡς κατάφασις καὶ ἀπόφασις: καὶ γὰρ ἐπὶ τούτων ὁ τρόπος τῆς ἀντιθέσεως ὁ αὐτὸς. ὡς γὰρ ποτε ἡ κατάφασις πρὸς τὴν ἀπόφασιν ἀντίκειται, οἷον τὸ κάθηται τῷ οὐ κάθηται, οὖτω καὶ τὸ ὑφ᾽ ἑκάτερον πράγμα ἀντίκειται, τὸ καθῆσθαι τῷ μὴ καθῆσθαι.

"Ὅτι δὲ ἡ στέρησις καὶ ἡ ἔξει οὐκ ἀντίκειται ὡς τὰ πρὸς τι, φανερῶν: οὐ γὰρ λέγεται αὐτὸ ὅπερ ἐστὶ τοῦ ἀντικειμένου. ἡ γὰρ ὀψις οὐκ ἐστὶ τυφλότητος ὀψις, οὔτε ἄλλως οὐδαμῶς πρὸς αὐτὸ λέγεται. ὡσαύτως δὲ οὔτε ἡ τυφλότης λέγεται τι ἂν τυφλότης ὀψις, ἄλλα στέρησις μὲν ὀψις η τυφλότης λέγεται, τυφλότης δὲ ὀψις οὐ λέγεται. ἐτι τά πρὸς τι πάντα πρὸς ἀντιστρέφοντα λέγεται, ὡστε καὶ ἡ τυφλότης εἴπερ ἤν τῶν πρὸς τι, ἀντιστρεφεν
moreover, be noted, that, if 'to be blind' could be rightly considered the same thing with 'blindness,' then should we predicate both, without doubt, of identical things. This, however, is never the case. A man may be said to be blind; yet a man is not said to be blindness.

As 'positives' and 'privatives' are opposites, so are possessing a faculty and being in a state of privation. We have the same sort of antithesis. For to be blind and have sight are opposed just as blindness and sight.

What is affirmed in a statement is not of itself affirmation nor what is denied a denial. 'Affirmation' means 'affirmative statement,' 'denial' means 'a negative statement.' But what is affirmed or denied in a statement is matter of fact, not a statement, proposition, assertion. It, nevertheless, is the case that the things we affirm and deny are called opposites in the same sense. For we have the same sort of antithesis. Just as the affirmative statement and the negative themselves are opposed—take the two propositions, for instance, 'he sits' and 'he is not sitting'—so, too, are the facts thus expressed or his sitting, that is, and not sitting.

'Positives' and 'privatives' clearly are not in the same sense opposed as are relatives one to the other. We do not explain them, I mean, by referring the one to the other. We do not call sight sight of blindness, nor use any other form of statement that serves to bring out a relation. And blindness, in similar manner, we do not call blindness of sight, but we call it privation of sight. Again, relative terms are reciprocal. Therefore, were blindness a relative,
Ἀριστοτέλης

ἀν κάκεινο πρὸς ό λέγεται. ἀλλ' οὐκ ἀντιστρέφει

οὐ γὰρ λέγεται ἡ ὁψὶς τυφλότητος ὁψὶς.

"Ὅτι δὲ οὐδ' ὡς τὰ ἐναντία ἀντικεῖται τὰ κατὰ
στέρησιν καὶ ἔξω λεγόμενα, εἰκ τῶν δῆλον. τῶν
μὲν γὰρ ἐναντίων, ὡς μηδὲν ἐστὶν ἀνὰ μέσον,
ἀναγκαῖον, ἐν ψεφυκε γίνεσθαι ἡ ὁ ἀκατ-
ηγορεῖται, θάτερον αὐτῶν ὑπάρχειν ἀεὶ· τούτων
γὰρ οὐδὲν ἐς ἀνὰ μέσον, ὡς θάτερον ἢν ἀναγκαῖον
τῶν δεκτικῶν ὑπάρχειν, οἶον ἐπὶ νόσου καὶ ψυχείας
καὶ περιττοῦ καὶ ἅρτιον. ὡς δὲ ἐς τι ἀνὰ μέσον,
οὐδἐποτε ἀνάγκη παντὶ ὑπάρχειν θάτερον· οὔτε
γὰρ λευκὸν οὔτε μέλαν ἀνάγκη πᾶν εἶναι τὸ δεκτικὸν,
οὔτε θερμὸν οὔτε ψυχρὸν· τούτων γὰρ ἀνὰ μέσον
τι οὐδὲν κωλύει ὑπάρχειν. ὥς δὲ καὶ τούτων ἢρ
τι ἀνὰ μέσον, ὡς μὴ ἀναγκαῖον θάτερον ὑπάρχειν
ἡ τῶν δεκτικῶν, εἰ μὴ οἷς φύσει τὸ ἐν ὑπάρχει,
οἶον τῷ πυρὶ τὸ θερμὸς εἶναι καὶ τῇ χίοις τῷ
λευκῇ. ἐπὶ δὲ τούτων ἀφωρισμένως ἀναγκαῖον
θάτερον ὑπάρχειν, καὶ οὕς ὅποτερον ἔτυχεν· οὐ
γὰρ ἐνδέχεται τὸ πῦρ ψυχρὸν εἶναι οὐδὲ τῆν χίονα
μέλαιναν. ὡς τε παντὶ μὲν οὐκ ἀνάγκη τῶν δεκτικῶν
θάτερον αὐτῶν ὑπάρχειν, ἀλλὰ μόνον οἷς φύσει τὸ
blindness and sight would reciprocate. This is, however, not so. For we do not call sight sight of blindness.

That 'positives' and 'privatives,' moreover, are not in the same sense opposed as are contraries one to the other seems perfectly clear from the following. When contraries have no intermediate, we saw that the one or the other must ever be present in the subject in which they are naturally found or of which they will serve as the predicates. Where this necessity obtained, then the terms could have no intermediates. Health and disease, odd and even, were mentioned above as examples. But where contraries have an intermediate, no such necessity obtains. It was not every subject that may be receptive of black and of white that must, therefore, be black or be white. And the same, too, with coldness and heat. That is, something or other intermediate between black and white may be present, between hot and cold and the like. (Moreover, we have already seen that those contraries had an intermediate, where it was not a necessity that one of the two should be inherent in everything capable of receiving them.) An exception must, however, be made where one contrary naturally inheres. To be hot is the nature of fire, and the nature of snow to be white. In such cases, then, one of the contraries needs must be definitely present, not one or the other, in things. It is out of the question that fire should be cold or that snow should be black. Hence it follows that one of the contraries need not be present in all things that may be receptive of such. It is present of necessity only in the subjects in which it inheres. And, moreover,
Ἐπὶ δὲ τῆς στερήσεως καὶ τῆς ἐξεως οὐδέτερον τῶν εἰρημένων ἀληθές: οὔτε γὰρ ἂεὶ τῷ δεκτικῷ ἀναγκαίον θάτερον αὐτῶν ὑπάρχειν· τὸ γὰρ μήπως πεφυκὸς ὥς ἐχειν οὔτε τυφλὸν οὔτε ὄψιν ἔχων λέγεται, ἃπαντες οὐκ ἂν εἴη ταῦτα τῶν τοιοῦτων ἐναντίων ὥν οὔδεν ἐστὶν ἀνὰ μέσον. ἀλλ' οὐδὲ ὃν τι ἐστίν ἀνὰ μέσον ἀναγκαῖον γὰρ ποτε παντὶ τῷ δεκτικῷ θάτερον αὐτῶν ὑπάρχειν· ὅταν γὰρ ἦδη πεφυκὸς ἦ ὥς ἐχειν, τότε ἦ τυφλὸν ἦ ὥς ἐχον ἐπεθήκεται, καὶ τούτων οὐκ ἀφωρισμένως θάτερον, ἀλλ' ὁπότερον ἐτυχεὶν· οὔ γὰρ ἀναγκαίων ἦ τυφλὸν ἦ ἐχον ὥς ἐναι, ἀλλ' ὁπότερον ἐτυχεὶν. ἐπὶ δὲ τῶν ἐναντίων, ὥστε ἑστὶ τι ἀνὰ μέσον, οὐ ποτε ἀναγκαῖον ἢ παντὶ θάτερον ὑπάρχειν, ἀλλ' τισι καὶ τούτοις ἀφωρισμένως τὸ ἐν. ὃποτε ὥδη λοιπὰν ὃτι κατ' οὐδέτερον τῶν τρόπων ὡς τὰ ἐναντία ἀντίκειται τὰ κατὰ στερήσειν καὶ ἐξίδι ἀντικεἰμενα. 

"Επὶ ἐπὶ μὲν τῶν ἐναντίων, ὑπάρχοντος τού δεκτικοῦ, δυνατὸν εἰς ἀλλήλα μεταβολήν γίνεσθαι, εἰ μὴ τινὶ φύσει τὸ ἐν ὑπάρχει, οἶον τῷ πυρὶ τὸ θερμὸν εἶναι· καὶ γὰρ τὸ ὑγιαῖον δυνατὸν νοσῆσαι καὶ τὸ λευκὸν μέλαν γενέσθαι καὶ τὸ ψυχρὸν θερμὸν, καὶ ἐκ σπουδαῖον γε φαινοῦν καὶ ἐκ φαινοῦν σπουδαῖον δυνατὸν γενέσθαι. ο γὰρ φαινοὶς εἰς βελτίως διατριβὰς ἀγόμενος καὶ λόγους καὶ 1 οὐδὲ Β.
in cases like this it is definitely one or the other, not either the one or the other, which is of necessity present.

Neither of the foregoing statements holds good of our 'positives' and 'privatives.' Subjects receptive of such are not bound to have one or the other. For what is not yet at the stage when it naturally ought to have sight is not called either seeing or sightless. And 'positives' and 'privatives,' therefore, are not to be classed with those contraries where there is no intermediate. Neither, again, should we class them with contraries having intermediates. For one or the other at times must form part of each possible subject. When a thing should by nature have sight, we shall say that it sees or is blind, indeterminately and not of necessity but whichever it happens to be. It has not of necessity sight; it is not of necessity blind; it must be in one state or the other. But have we not already seen that of contraries having intermediates neither the one nor the other need be found in each possible subject but definitely one of the pair must be present in some of those subjects? That 'positives' and 'privatives,' therefore, are not opposed one to the other in either of the same ways as contraries will be evident from the foregoing.

Of contraries this, too, holds good, that, the subject remaining identical, either may change to the other, unless, indeed, one of those contraries constitutes part of that subject, as heat constitutes part of fire. What is healthy may well become sick, what is white may in time become black, what is cold may in turn become hot. And the good becomes bad, the bad good. For the bad man, when once introduced to new modes both of living and thinking, may improve,
μικρόν γε τι ἐπιδοίη εἰς τὸ βελτίων εἶναι. ἕαν 
δὲ ἀπαξ κἀν μικρὰν ἐπίδοσιν λάβη, φανερὸν ὅτι ἡ 
tελέως ἂν μεταβάλοι ἡ πάντι πολλὴν ἐπίδοσιν 
λάβου. ἀεὶ γὰρ εὐκυκνητότερος πρὸς ἀρετὴν γίνεται, 
κἂν ἢπτινοὺν ἐπίδοσιν εὐληφῶς εἰς ἀρχῆς ὰ, ὥστε 
καὶ πλεῖω εἰκὸ ἐπίδοσιν αὐτῷ λαμβάνει. κἂ

τούτῳ ἀεὶ γινόμενον τελείως εἰς τὴν ἐναντίαν ἔξω 
ἀποκαθίστησιν, εὰν περ μὴ χρόνῳ ἔξεργητα. ἐπὶ 
δὲ γε τῆς ἔξεως καὶ τῆς στερήσεως ἄδυνατον εἰς 
ἀλληλα μεταβολὴν γενέσθαι. ἀπὸ μὲν γὰρ τῆς ἔξεως 
ἐπὶ τὴν στέρησιν γίνεται μεταβολὴ, ἀπὸ δὲ τῆς στερῆ-

σεως ἐπὶ τῆς ἔξω ἄδυνατον. οὔτε γὰρ τυφλοῦς γενό-
μενός τις πάλιν ἀνέβλεψεν, οὔτε φαλακρὸς ὦ ὧν πάλιν 
κομήτης ἐγένετο, οὔτε νωδὸς ὥς ὄν ὀδύνατα ἐφυσον.

"Οσα δὲ ἦσι κατάφασις καὶ ἀπόφασις ἀντίκειται,

φανερὸν ὅτι κατ’ οὐδένα τῶν εἰρημένων τρόπων 
ἀντίκειται. ἐπὶ γὰρ μόνων τούτων ἀναγκαίων ἀεὶ 
τῶν ἄλθετος τὸ δὲ ψεύδος αὐτῶν εἶναι. οὔτε 
γὰρ ἐπὶ τῶν ἐναντίων ἀναγκαίων ἀεὶ θάτερον 
ἀλθέης εἶναι θάτερον δὲ ψεύδος, οὔτε ἐπὶ τῶν πρὸς 
τι, οὔτε ἐπὶ τῆς ἔξω καὶ τῆς στερήσεως. ὦν ἡ 
ὑγίεια καὶ ἡ νόσος ἐναντία, καὶ οὐδέτερον γε οὔτε 
ἀλθέης οὔτε ψεύδος ἐστιν. ὥσαύτως δὲ καὶ τὸ 
διπλάσιον καὶ τὸ ἡμισίν ὄς τὰ πρὸς τι ἀντίκειται, καὶ 
οὔκ ἐστίν αὐτῶν οὐδέτερον οὔτε ἄλθεα οὔτε ψεύδος. 
οὔτε γε τὰ κατὰ στερήσιν καὶ ἔξω, ὦν ἡ ὅπις καὶ 
τῇ τυφλότης. ὅλως δὲ τῶν κατὰ μηδεμίαν συμπλο-

κὴν λεγομένων οὐδὲν οὔτε ἄλθεα οὔτε ψεύδος ἐστιν 
πάντα δὲ τὰ εἰρήμενα ἄνευ συμπλοκῆς λέγεται.

Οὐ μὴν ἂλλα μάλιστα ἂν δόξεε τὸ τοιοῦτο συμ-

*See what was said in c. 4 upon uncombined words, truth and falsity.*
be it ever so little. And should such a man once improve, even though it be only a little, he might, it is clear, make great progress or even, indeed, change completely. For ever more easily moved and inclined is a man towards virtue, although in the very first instance he made very little improvement. We naturally, therefore, conclude he will make ever greater advance. And, if so, as the process continues, it will at length change him entirely, provided that time is allowed.

As for 'positives' and 'privatives,' however, there cannot be change in both ways. From possession you may pass to privation but not from the latter to the former. A man who has once become blind never finds that his sight is restored, as a man who has once become bald never after recovers his hair and a man who has once lost his teeth never after can grow a new set.

Affirmations and negations are opposed, it is patent, in none of those ways upon which we have already touched. It is here, and here only, indeed, that one opposite needs must be true, while the other must always be false. In the case of other opposites—contraries, correlatives, positives and privatives—this will in no wise hold good. Thus of health and disease, which are contraries, neither is true, neither false. Take correlatives, 'double' and 'half.' Again, neither is true, neither false. So also with 'positives' and 'privatives,' such as are blindness and sight. To sum up, unless words are combined, 'true' and 'false' can have no application. And all the afore-mentioned opposites are but mere uncombined words.*

However, when words that are contraries consti-
13 b  βαίνειν ἐπὶ τῶν κατὰ συμπλοκὴν ἐναντίων λέγο-
μένων· τὸ γὰρ ἐναντίων Σωκράτην τῷ νοσεῖν
15 Σωκράτην ἐναντίον ἐστίν. ἀλλ᾽ οὐδ᾽ ἐπὶ τούτων
ἀναγκαῖον ἀεὶ θάτερον μὲν ἀληθὲς θάτερον δὲ
ψεῦδος εἶναι. ὅτι οὖν γὰρ Σωκράτους ἐσται τὸ
μὲν ἀληθὲς τὸ δὲ ψεῦδος, μὴ δὲ αμφότερα
ψευδή· οὔτε γὰρ τὸ νοσεῖν Σωκράτην οὔτε τὸ
ὑγιαίνειν ἐστὶν ἀληθὲς αὐτοῦ μὴ ὃντος ὅλως τοῦ
Σωκράτους.
20 Ἐπὶ δὲ τῆς στερήσεως καὶ τῆς ἐξεώς μὴ ὃντος
tε ὅλως οὐδέτερον ἀληθὲς, ὃντος τε οὐκ ἀεὶ
θάτερον ἀληθὲς θάτερον δὲ ψεῦδος· τὸ γὰρ ὃμι
ἐχειν Σωκράτην τῷ τυφλὸν εἶναι Σωκράτην ἀντι-
κειται ὡς στέρησις καὶ ἕξις, καὶ ὃντος τε οὐκ
ἀναγκαῖον θάτερον ἀληθὲς εἶναι ἡ ψεῦδος (ὅτε γὰρ
25 μήπω πέφυκεν ἐχειν, ἀμφότερα ψευδή), μὴ ὃντος
tε ὅλως τοῦ Σωκράτους, καὶ οὕτω ψευδή ἀμφό-
tερα, καὶ τὸ ὃμι ἐχειν καὶ τὸ τυφλὸν αὐτοῦ εἶναι.
Ἑπὶ δὲ γε τῆς καταφάσεως καὶ τῆς ἀποφάσεως
ἀεί, ἐὰν τε ἢ ἐὰν τε μὴ ἢ, τὸ ἕτερον ἐσται ψεῦδος
καὶ τὸ ἐτερον ἀληθὲς. τὸ γὰρ νοσεῖν Σωκράτην
30 καὶ τὸ μὴ νοσεῖν Σωκράτην, ὃντος τε αὐτοῦ φανε-
ρὼν ὅτι τὸ ἐτερον αὐτῶν ἀληθὲς ἢ ψεῦδος, καὶ μὴ
ὦντος ὅμοιως· τὸ μὲν γὰρ νοσεῖν μὴ ὃντος ψεῦδος,
tὸ δὲ μὴ νοσεῖν ἀληθὲς. ᾠστε ἐπὶ μόνῳν τοῦτων
ἰδιον ἢν εἰ ὃν τὸ ἀεὶ θάτερον αὐτῶν ἀληθὲς ἢ ψεῦδος
35 εἶναι, ὃσα ὡς κατάφασις καὶ ἀπόφασις ἀντικεῖται.
tute parts of those statements opposed as affirmative and negative, these would especially seem to lay claim to this characteristic. The statement that 'Socrates is ill' is the contrary of 'Socrates is well.' Yet we cannot maintain even here that one statement must always be true and the other must always be false. For, if Socrates really exists, one is true and the other is false. But if Socrates does not exist, both the one and the other are false. To say 'he is ill' will be false, and to say 'he is well' will be false, if no Socrates so much as exists.

As for 'positives' and 'privatives,' however, if the subject is not in existence, then neither proposition is true. If the subject exists, even then one will not be true always, one false. That 'Socrates has sight,' for example, is the opposite of 'Socrates is blind' in the sense in which 'opposite' was used as applied to privation and possession. Now, if Socrates really exists, it is not of necessity the case that one statement is true and one false. For he may not as yet have arrived at the stage when a man acquires sight, so that both of the statements are false, as they are, if he does not exist.

To return to affirmation and negation. Of these we may say in all cases that one must be false and one true, be the subject existent or not. For, if Socrates really exists, 'he is ill' or 'not ill' must be true; 'he is ill' or 'not ill' must be false. And the same, if he does not exist. For, provided he does not exist, it is false to pronounce 'he is ill'; 'he is not ill,' however, is true. Thus that one of the two must be true and the other be false in all cases will hold of those opposites only which are in the same sense opposed as affirmative and negative statements.
XI. Ἐναντίον δὲ ἐστὶν εἶπεν ἀνάγκης ἄγαθῷ μὲν κακὸν· τοῦτο δὲ δήλον τῇ καθ᾽ ἕκαστον ἐπαγγέλλων·

14 οἷον ὑγιείᾳ νόσος καὶ ἀνδρείᾳ δείλια, ὁμοίως δὲ καὶ ἐπὶ τῶν ἄλλων. κακῷ δὲ ὅτε μὲν ἄγαθὸν ἐναντίον, ὅτε δὲ κακόν· τῇ γὰρ ἐνδείᾳ κακῷ ὄντι ὑπερβολὴ ἐναντίον κακὸν ὄν· ὁμοίως δὲ καὶ ἤμεσότης ἐναντία ἐκατέργω, οὕσα ἄγαθόν· ἐπὶ δὲ ὅλίγων δ᾽ ἂν τὸ τοιοῦτον ὑπάρχῃ, ἐπὶ δὲ τῶν πλείστων ἀεὶ τῷ κακῷ τὸ ἄγαθὸν ἐναντίον ἐστὶν.

"Ετὶ ἐπὶ τῶν ἐναντίων οὐκ ἀναγκαῖον, ἔτι δὲ κακῷ ὅτε ἀγαθὸν· ὁτὲ δὲ κακῷ· τῇ γὰρ ἐνδείᾳ κακῷ ὄντι ὑπερβολὴ ἐναντίον κακὸν ἔστιν. Ἐτὶ ἐπὶ τῶν ἐναντίων οὐκ ἀναγκαῖον, ἔτι δὲ κακῷ ὅτε ἀγαθὸν· ὁτὲ δὲ κακῷ· τῇ γὰρ ἐνδείᾳ κακῷ ὄντι ὑπερβολὴ ἐναντίον κακὸν ἔστιν. Ἐτὶ ἐπὶ τῶν ἐναντίων οὐκ ἀναγκαῖον, ἔτι δὲ κακῷ ὅτε ἀγαθὸν· ὁτὲ δὲ κακῷ· τῇ γὰρ ἐνδείᾳ κακῷ ὄντι ὑπερβολὴ ἐναντίον κακὸν ἔστιν.

15 τὸ τοὐτὸν ἐθνὸς ἔστι. μὴ ἐνδέχεται δὲ ἄμα ἀμφότερα τῷ ἑαυτῷ ὑπάρχειν, οὐχ ἂν ἐν ἐνδέχεται τῷ ἑαυτῷ ὑπάρχειν, οὐκ ἂν ἐνδέχεται τῷ ἑαυτῷ ὑπάρχειν, οὐκ ἂν ἐνδέχεται τῷ ἑαυτῷ ὑπάρχειν, οὐκ ἂν ἐνδέχεται τῷ ἑαυτῷ ὑπάρχειν. Ἐτὶ ἐπὶ τῶν ἐναντίων οὐκ ἀναγκαῖον, ἔτι δὲ κακῷ ὅτε ἀγαθὸν· ὁτὲ δὲ κακῷ· τῇ γὰρ ἐνδείᾳ κακῷ ὄντι ὑπερβολὴ ἐναντίον κακὸν ἔστιν. Ἐτὶ ἐπὶ τῶν ἐναντίων οὐκ ἀναγκαῖον, ἔτι δὲ κακῷ ὅτε ἀγαθὸν· ὁτὲ δὲ κακῷ· τῇ γὰρ ἐνδείᾳ κακῷ ὄντι ὑπερβολὴ ἐναντίον κακὸν ἔστιν. Ἐτὶ ἐπὶ τῶν ἐναντίων οὐκ ἀναγκαῖον, ἔτι δὲ κακῷ ὅτε ἀγαθὸν· ὁτὲ δὲ κακῷ· τῇ γὰρ ἐνδείᾳ κακῷ ὄντι ὑπερβολὴ ἐναντίον κακὸν ἔστιν. Ἐτὶ ἐπὶ τῶν ἐναντίων οὐκ ἀναγκαῖον, ἔτι δὲ κακῷ ὅτε ἀγαθὸν· ὁτὲ δὲ κακῷ· τῇ γὰρ ἐνδείᾳ κακῷ ὄντι ὑπερβολὴ ἐναντίον κακὸν ἔστιν. Ἐτὶ ἐπὶ τῶν ἐναντίων οὐκ ἀναγκαῖον, ἔτι δὲ κακῷ ὅτε ἀγαθὸν· ὁτὲ δὲ κακῷ· τῇ γὰρ ἐνδείᾳ κακῷ ὄντι ὑπερβολὴ ἐναντίον κακὸν ἔστιν. Ἐτὶ ἐπὶ τῶν ἐναντίων οὐκ ἀναγκαῖον, ἔτι δὲ κακῷ ὅτε ἀγαθὸν· ὁτὲ δὲ κακῷ· τῇ γὰρ ἐνδείᾳ κακῷ ὄντι ὑπερβολὴ ἐναντίον κακὸν ἔστιν.
XI. The contrary of good must be evil, and this can be proved by induction. The contrary of health is disease, that of courage is cowardice and so on. Of an evil, however, the contrary is either a good or an evil. For instance, defect is an evil; its contrary, excess, is an evil. But the mean, which is contrary to either in an equal degree, is a good. You, however, find few such exceptions, and, generally speaking, it is true that the contrary of evil is good.

It does not of necessity follow that, if one of the contraries exists, then the other must also exist. For suppose that all things became healthy. There then would be health, not disease. Or suppose that all things became white. There would then be white only, not black. Inasmuch, too, as Socrates ill is the contrary of Socrates well and both contraries cannot exist at one time in the same individual, if one of the contraries existed, the other could not then exist. For, provided he was well was the fact, he was ill could not also be fact.

This point will be evident also: the subjects of contrary qualities must have the same species or genus. For health and disease have for subject the body of some living creature, and whiteness and blackness a body which need not be specified further. And justice, likewise, and injustice arise in the souls of mankind.

In addition, two contrary qualities always belong to one genus or else to the contrary genera, when they are not themselves genera. White, for example, and black will belong to the same genus, colour. Justice, again, and injustice fall under two contrary genera, those we call virtue and vice. Good and evil
κακὸν οὐκ ἔστιν ἐν γένει ἀλλ᾽ αὐτὰ τυγχάνει γένη
tινῶν ὄντα.

XII. Πρότερον ἐτέρου ἐτέρον λέγεται τετραχῶς,
πρῶτον μὲν καὶ κυριώτατα κατὰ χρόνον, καθ' ὁ
προσβύτερον ἐτέρον ἐτέρον καὶ παλαιότερον λέγε-
tαι. τῷ γὰρ τὸν χρόνον πλείω εἶναι καὶ προσ-
βύτερον καὶ παλαιότερον λέγεται.

Δεύτερον δὲ τὸ μὴ ἀντιστρέφον κατὰ τὴν τοῦ
eἶναι ἀκολουθησιν, οἷον τὸ ἐν τὸν δύο πρότερον
δυοῖν μὲν γὰρ ὄντων ἀκολουθεῖ εὐθὺς τὸ ἐν εἶναι,
ἔνος δὲ ὄντος οὐκ ἀναγκαῖον δύο εἶναι, ὡστε οὐκ
ἀντιστρέφει ἀπὸ τοῦ ἐνὸς ἡ ἀκολουθησις τοῦ εἶναι
tὸ λοιπὸν. πρότερον δὲ δοκεῖ τὸ τοιοῦτον εἶναι,

τρίτον δὲ κατὰ τῶν τάξιν τὸ πρότερον λέγεται,
καθάπερ ἐπὶ τῶν ἐπιστημῶν καὶ τῶν λόγων. ἐν
tε γὰρ ταῖς ἀποδεικτικαῖς ἐπιστήμαις ὑπάρχει τὸ
πρότερον καὶ τὸ υστερον τῇ τάξει (τὰ γὰρ στοιχεῖα

πρότερα τῶν διαγραμμάτων τῇ τάξει, καὶ ἐπὶ τῆς

γραμματικῆς τὰ στοιχεῖα πρότερα τῶν συλλαβῶν),
ἐπὶ τὲ τῶν λόγων ὁμοίως τὸ γὰρ προοίμιον τῆς
dιηγήσεως πρότερον τῇ τάξει ἐστὶν.

Ἐπὶ παρὰ τὰ εἰρημένα τὸ βέλτιον καὶ τὸ τιμω-
τερον πρότερον εἶναι τῇ φύσει δοκεῖ. εἰώθασι δὲ
καὶ οἱ πολλοὶ τοὺς εἰρημοτέρους καὶ μάλλον ἀγα-
pωμένους ὑπ᾽ αὐτῶν προτέρους φάσκειν παρ' αὐτοῖς
eἶναι. ἔστι μὲν δὴ καὶ σχεδὸν ἀλλοτριώτατος τῶν
τρόπων οὗτος.

a ἡ γραμματική, a much wider term in the Greek than is
‘grammar’ in English. Here it may very well signify
reading or writing or both.
belong to no genera, being themselves actual genera, having subordinate species.

XII. There are four different senses in which we may call one thing 'prior' to another. Whenever we use the term 'prior' in its proper and primary sense, it is time that we have in our minds. It is thus that we call a thing 'older,' 'more ancient' than some other thing, signifying that its time has been longer.

Secondly, 'prior' may be used, when the order of being is fixed and incapable of being reversed. 'One' is prior, among numbers, to 'two.' For provided, that is, 'two' exists, then it follows that 'one' must exist. The existence of 'one,' on the contrary, does not imply that of 'two.' And the order of being, in consequence, cannot be changed and reversed. Thus of two things we call that one 'prior' which precedes in irreversible sequence.

Thirdly, we use the term 'prior' in regard to any order whatever. And this is the case in the sciences, as it is also with speeches. In sciences using demonstration we have what is prior in its order and what is, per contra, posterior. Take geometrical science: the elements—points, lines and so on—are prior to propositions or problems. And, likewise, in what we call 'grammar' the letters are prior to the syllables. So in the case of a speech will the proem be prior to the narrative.

Besides the three senses aforesaid whatsoever is better, more honourable, is said to be naturally prior. Thus the common folk, speaking of those whom they hold in esteem or affection, describe them as coming first with them or having prior place in their hearts. But this use seems the strangest of all.
10 Οἱ μὲν οὖν λεγόμενοι τρόποι τοῦ προτέρου σχεδόν τοσοῦτοι εἰσὶν. δόξειε δ' ἂν παρά τοὺς εἰρημένους καὶ ἔτερος εἶναι προτέρου τρόποι· τῶν γὰρ ἀντιστρεφόντων κατὰ τὴν τοῦ εἶναι ἀκολούθησιν τὸ αἴτιον ὑποσχοῦν θατέρῳ τοῦ εἶναι πρότερον εἰκότως τῇ φύσει λέγοιτ' ἂν. ὅτι δ' ἔστι τινὰ τοιαῦτα, δῆλον· τὸ γὰρ εἶναι ἀνθρωπὸν ἀντιστρέφει κατὰ τὴν τοῦ εἶναι ἀκολούθησιν πρὸς τὸν ἀληθῆ περὶ αὐτοῦ λόγον. εἰ γὰρ ἐστὶν ἀνθρωπὸς, ἀληθῆς ὁ λόγος ὃ λέγομεν ὅτι ἐστὶν ἀνθρωπὸς. καὶ ἀντιστρέφει γε· εἰ γὰρ ἀληθῆς ὁ λόγος ὃ λέγομεν ὧτι ἐστὶν ἀνθρωπὸς, ἐστὶν ἀνθρωπὸς. ἐστι δὲ ὁ μὲν ἀληθῆς λόγος οὐδαμῶς αἴτιος τοῦ εἶναι τὸ πράγμα, τὸ μὲντοι πράγμα φαίνεται πως αἴτιον τοῦ εἶναι ἀληθῆ τοῦ λόγου· τῷ γὰρ εἶναι τὸ πράγμα ἡ μὴ ἀληθῆς ὁ λόγος ἡ ψευδῆς λέγεται, ἀυτῷ κατὰ πέντε τρόπους πρότερον ἔτερον λέγεται.
These, I think, are the four distinct senses in which we may use the term 'prior.' Yet another might seem to exist beyond those we have already mentioned. For where in the case of two things the existence of either implies or necessitates that of the other, that thing which is somehow the cause may, in consequence, fairly be considered as naturally prior to the other. Such cases can clearly be found. The existence of a man, for example, necessitates the truth of the statement wherein we assert his existence. The converse is also the case. For if he exists, then the statement asserting that fact will be true. If the statement, conversely, is true, then the man referred to must exist. The true statement, however, is nowise the cause of the man's thus existing; and yet his existence would seem in some manner or other the cause of the truth of the true proposition. For the latter is called 'true' or 'false,' as the man thus exists or does not. So it seems that we use the term 'prior' in as many as five different senses.

XIII. 'Simultaneous' we use in its primary and most correct meaning of things that have come into being together. For neither in that case is prior, nor is either posterior to the other. We mean 'simultaneous in time.' 'Simultaneous' in nature we apply to those things where the being of either necessitates that of the other but neither is cause of the other. For instance, take 'double' and 'half,' for these two have reciprocal dependence. If a double exists, then a half; if a half exists, also a double. And neither of these is the cause of the other's existence or being.

Species marked off and opposed under one genus each to the others are called 'simultaneous' in nature. I mean those marked off or divided by

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οἶον τὸ πτηνὸν τῷ πεζῷ καὶ τῷ ἐνύδρῳ· ταῦτα γὰρ ἀλλήλους ἀντιδημητηταί εκ τοῦ αὐτοῦ γένους· τὸ γὰρ ζῴον διαιρεῖται εἰς ταῦτα, εἰς τε τὸ πτηνὸν καὶ τὸ πεζὸν καὶ τὸ ἐνύδρον, καὶ οὐδὲν γε τούτων πρότερον ἢ ύστερόν ἐστιν, ἀλλ' ἃμα τῇ φύσει τὰ τοιαύτα δοκεῖ εἶναι. διαιρεθείη δ' ἂν καὶ ἐκαστον τῶν τοιούτων εἰς εἰδή πάλιν, οἶον τὸ πεζὸν καὶ τὸ πτηνὸν καὶ τὸ ἐνύδρον. ἔσται οὖν κάκειων ἃμα τῇ φύσει, ὑπὸ ἡ ἂν τοῦ αὐτοῦ γένους κατὰ τὴν αὐτὴν διαίρεσιν ἐστιν. τὰ δὲ γένη τῶν εἰδῶν ἀεὶ πρότερα· οὐ γὰρ ἀντιστρέφει κατὰ τὴν τοῦ εἶναί ἀκολούθησιν, οἶον ἐνύδρον μὲν ὄντος ἐστι ζῷων, ζῴου δὲ οὗτος οὐκ ἀνάγκη ἐνύδρον εἶναι. Ἀμα οὖν τῇ φύσει λέγεται, οὐσα ἀντιστρέφει μὲν κατὰ τὴν τοῦ εἶναί ἀκολούθησιν, μηδαμῶς δὲ αὐτίχων τὸ ἔτερον τῷ ἑτέρῳ τοῦ εἶναί ἐστιν, καὶ τὰ τοῦ αὐτοῦ γένους ἀντιδημητηταί ἀλλήλους· ἀπλῶς δὲ ἃμα, ὅποι ζένεσις ἐν τῷ αὐτῷ χρόνῳ.

Χ. Κινήσεως δὲ ἐστιν εἰδὴ ἐξ, γένεσις, φθορά, αὐξήσις, μείωσις, ἀλλοίωσις, ἕκ τὸν τόπον μεταβολή.

Αἱ μὲν οὖν ἄλλαι κινήσεις φανερῶν οτι ἑτερογενής ἐσιν· οὐ γὰρ ἐστιν ἡ γένεσις φθορὰ οὐδὲ γε ἡ αὐξήσις μείωσις οὐδὲ ἡ κατὰ τῶν μεταβολῆς, ὡσαύτως δὲ καὶ αἱ ἄλλαι· ἐπὶ δὲ τῆς ἀλλοίωσεως ἔχει τινὰ ἀπορίαν, μηδὲν τοτε ἀναγκαῖον ἦ τὸ ἀλλοιούμενον κατὰ τῶν λοιπῶν κινήσεων ἀλλοιούσθαι· τοῦτο δὲ οὐκ ἀληθές ἔστι· σχεδὸν γὰρ κατὰ πάντα τὰ πάθη ἥ τὰ πλείστα ἀλλοιούσθαι συμβεβηκέν ἧμῖν οὔδεμιᾶς τῶν ἄλλων κινήσεων.
identical modes of division. That is to say, the 'winged' species is called 'simultaneous' in nature with both the 'aquatic' and 'terrestrial.' All are marked off and opposed under one genus each to the others. For into these species is 'animal,' the genus, marked off by division. And none will be prior or posterior; all are in nature 'simultaneous.' Each of these species is further marked off into certain sub-species, which also are called 'simultaneous' in nature for just the same reasons. The genus is prior to the species. That is to say that the order of being cannot be reversed. If the species 'aquatic' exists, then does also the genus or 'animal'; but granted the genus exists, there is not of necessity the species.

Thus we call 'simultaneous' in nature those things where the being of either necessitates that of the other but neither is cause of the other, and also those species marked off and opposed under one genus only. We use 'simultaneous,' too, in its first and unqualified sense of those things that have come into being at one and the same time together.

XIV. There are six kinds of what we call motion—generation, that is, and destruction, increase, diminution, alteration and, finally, changes of place. With a single exception it is plain that all these are distinct from each other. Destruction is not generation, and increase is not diminution, nor yet does it mean change of place. And so also it is with the rest. In the case of alteration, however, it may be objected by some that a subject, when altered, is altered by one of the other five motions. And yet this is not really so. For by all or, at least, most affections alterations are brought about in us that have nought in common whatever with those other motions we
κοινωνοῦσιν οὔτε γὰρ αὔξεσθαι ἀναγκαῖον τὸ κατὰ πάθος κινούμενον οὔτε μειοῦσθαι, ὡσαύτως δὲ καὶ ἐπὶ τῶν ἄλλων, ὡσθ᾽ ἔτερα ἄν εἰς παρὰ τὰς ἄλλας κινήσεις ἡ ἀλλοίωσις· εἰ γὰρ ἦν ἡ αὐτή, ἔδει τὸ ἀλλοιούμενον εὐθὺς καὶ αὔξεσθαι ἡ μειοῦσθαι ἡ τῶν ἄλλων ἀκολουθεῖν κινήσεων· ἀλλ᾽ οὐκ ἀνάγκη. ὡσαύτως δὲ καὶ τὸ αὔξανόμενον ἡ τῶν ἄλλην κίνησιν κινούμενον ἀλλοιοῦσθαι ἔδει· ἀλλ᾽ ἐστὶ τινα ἀὔξανόμενα αἱ ὀυκ ἀλλοιοῦται, οἷον τὸ τετράγωνον γνώμονος περιτεθέντος ἤξει, ἀλλ᾽ ἔστι τινὰ αὐξανόμενα ἃ οὐκ ἔδει τὸν τοιοῦτον κινοῦσθαι, ἀλλοτρίον δὲ οὐδὲν γεγένηται: ὡσαύτως δὲ καὶ ἐπὶ τῶν ἄλλων τῶν τοιούτων. ὡσθ᾽ ἔτεραι ἄν εἰςαν αἱ κινήσεις ἄλληλων.
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mentioned. For that which is thereby affected need not be increased or diminished or undergo any such process. It follows that alteration is different from all other species of motion. For, were it the same with some other, the object, when altered, would straightway be also increased or diminished or undergo some other motion. But that is not so of necessity. Moreover, whatever was increased or was subject to some other motion would be of necessity altered. And yet there are things that increase and are not thereby altered as well. For example, if a gnomon is added, a square is increased in its size but does not undergo alteration, remaining a square as before.\(^a\) So it is with all similar forms. Alteration and increase, it follows, are two distinct species of motion.

Rest is, broadly, the contrary of motion. But particular species of motion have each their particular contraries. Thus change in place may be said to have rest in a place for its contrary, increase will have diminution, generation destruction or corruption. But as for the first of those mentioned, a change to the contrary place would appear in the strictest sense contrary—that is, ascent to descent and descent to ascent and the like. But as for the

\(^a\) The accompanying figure illustrates what is meant about the square and the Gnomon.
λοιπῇ τῶν ἀποδοθεισῶν κινήσεων οὐ ράδιον ἀπο-
δούναι τί ποτέ ἐστιν ἐναντίον, έοικε δὲ οὐδέν εἶναι
αὐτῇ ἐναντίον, εἰ μὴ τις καὶ ἐπὶ ταύτης τὴν κατὰ
τὸ ποιόν ἑρεμίαν ἀντιτιθεῖ ἡ τῆν εἰς τὸ ἐναντίον
tού ποιοῦ μεταβολῆν, καθάπερ καὶ ἐπὶ τῆς κατὰ
tόπον μεταβολῆς τὴν κατὰ τόπον ἑρεμίαν ἡ
tῆν εἰς τὸν ἐναντίον τόπον μεταβολῆν. ἐστὶ γὰρ ἡ
ἀλλοίωσις μεταβολῆ κατὰ τὸ ποιόν. ὡστε ἀντι-
κείσεται τῇ κατὰ τὸ ποιόν κινήσει ἡ κατὰ τὸ
ποιόν ἑρεμία ἡ ἡ εἰς τὸ ἐναντίον τοῦ ποιοῦ μετα-
βολῆ, οἷον τὸ λευκὸν γίνεσθαι τῷ μέλαν γί
νεσθαι: ἀλλοιοῦται γὰρ εἰς τὰ ἐναντία τοῦ μετα-
βολῆς γινομένης.

XV. Τὸ δὲ ἔχειν κατὰ πλείονας τρόπους λέγεται,
ἡ γὰρ ὡς ἐξω καὶ διάθεσιν ἡ ἄλλην τινὰ ποιότητα
ὁ μέδιμνος τοὺς πυροὺς ἡ τὸ κεράμιον τὸν οἶ
ν γὰρ ἐχειν τὸ κεράμιον λέγεται, καὶ ὁ μέ
διμνος πυροῦς· ταύτ' οὖν πάντα ἐχειν λέγεται ὡς ἐν
ἀγγείῳ. ἡ ὡς κτῆμα· ἐχειν γὰρ οἰκίαν ἡ ἀγρὸν
λεγόμεθα.
motion remaining of those we have mentioned above, it were no easy matter to say what its contrary actually is. And, in fact, it appears to have none or, here too, it is 'rest in its quality' or 'change to the contrary quality,' just as we said change of place had for contrary rest in a place or a change to a contrary place. Alteration means change of a quality. Therefore, to qualitative motion we oppose either rest in its quality or change to a contrary quality. Thus black and white will be contraries; therefore, becoming the one will be contrary to becoming the other. There is change of a quality here, which implies alteration, in consequence, into a contrary quality.

XV. 'To have' has a good many meanings. We use it of habits, dispositions and also of all other qualities. Thus we are said to 'have' virtue, to 'have' this or that piece of knowledge. And then it is used of a quantity, such as the height a man has. So it is that we say that a man 'has' a stature of three or four cubits. Again, it is used of apparel; a man 'has' a cloak or a tunic. Moreover, we use it of things that we 'have' on some part of the body, a ring on the finger, for instance. We employ it of parts of the body; a man 'has' a hand or a foot. It is used in the case of a vessel: a jar will be said to 'have' wine and a corn-measure said to 'have' wheat. And in cases like these we are thinking of what is contained in the vessel. Once more, we use 'have' of a property, men 'having' houses or fields.

People say that a man 'has' a wife and a wife, in like manner, a husband. This meaning is very

* In English, of course, we say 'hold.'
τοῦ ἔχειν· οὐδὲν γὰρ ἄλλο τῷ ἔχει γυναῖκα σημαίνομεν ἢ ὅτι συνοικεῖ. Ἡσαΐας δ' ἂν καὶ ἄλλοι τινὲς φανεῖσαν τοῦ ἔχειν τρόποι· οἱ δὲ εἰσθότες λέγεσθαι σχεδὸν ἀπαντες κατηρίθμηνται.
far-fetched. When we say that a man has a wife, then we mean that he lives with her merely.

There may be more senses of 'have.' But the customary meanings, I think, are set forth in the foregoing summary.
ON INTERPRETATION
SUMMARY OF THE PRINCIPAL THEMES

Ch. 1. The relation of language to thought.
Isolated notions express neither truth nor falsehood.
Combination of notions or ideas in propositions or judgements essential before truth or error is possible.

Ch. 2. Definition of a noun.
Nouns simple or composite.
Indefinite nouns.
Cases of nouns.

Ch. 3. Definition of a verb.
Indefinite verbs.
Tenses of verbs.

Ch. 4. Definition of a sentence.
Not every sentence a proposition.

Ch. 5. Of simple and complex or composite propositions.

Ch. 6. Of contradictory propositions.

Ch. 7. Of universal, indefinite and particular affirmative and negative propositions.
Of contrary as opposed to contradictory propositions.

Ch. 8. Definition of single propositions.

Ch. 9. Of propositions referring to the future, as opposed to propositions referring to the present time or to the past.
ON INTERPRETATION

Ch. 10. Affirmative and negative propositions arranged with a diagram in pairs.
The correct position of the negative (οὐ).
Of the truth and error of certain propositions.
Of propositions with indefinite nouns or indefinite nouns and verbs.
To transpose the subject and predicate makes no difference to the meaning of propositions.

Ch. 11. Some propositions that seem to be simple are really compound.
So are some dialectical questions.
The nature of dialectical questions.
Two simple propositions, which have the same subject, may be true; but we cannot of necessity combine the two predicates into one predicate.
Several predicates holding of one subject, when taken by themselves and individually, cannot be combined together to make up one simple proposition, unless all are essential to the subject and none is implied in another.

Ch. 12. Of propositions affirming or denying the possible, impossible, contingent and necessary, and of their proper contradictories.

Ch. 13. The relations that subsist between such propositions.
The relation of the actual to the possible.
Three classes of entities.

Ch. 14. Of the proper contrary of an affirmation, whether universal or particular.
ΠΕΡΙ ΕΡΜΗΝΕΙΑΣ

16 a I. Πρῶτον δεῖ θέσθαι τί ὄνομα καὶ τί ῥῆμα, ἐπειτὰ τί ἔστιν ἀπόφασις καὶ κατάφασις καὶ ἀπόφασις καὶ λόγος.

"Εστὶ μὲν οὖν τὰ ἐν τῇ φωνῇ τῶν ἐν τῇ ψυχῇ παθημάτων σύμβολα, καὶ τὰ γραφόμενα τῶν ἐν τῇ φωνῇ. καὶ ὥσπερ οὐδὲ γράμματα πάσι τὰ αὐτὰ, οὐδὲ φωναὶ αἱ αὐταί. ὡν μέντοι ταῦτα σημεῖα πρῶτως, ταῦτα πάσι παθήματα τῆς ψυχῆς, καὶ ὧν ταῦτα ὁμοιώματα, πράγματα ἡδὴ ταῦτα. περὶ μὲν οὖν τούτων εἴρηται ἐν τοῖς περὶ ψυχῆς ἀλλης γὰρ πραγματείας.

10 "Εστὶ δ’, ὥσπερ ἐν τῇ ψυχῇ ὅτε μὲν νόημα ἄνευ τοῦ ἀληθεύειν ἢ ψεύδεσθαι, ὅτε δὲ θητῇ ὃ ἀνάγκη τούτων ὑπάρχειν βάτερον, οὕτω καὶ ἐν τῇ φωνῇ περὶ γὰρ σύνθεσιν καὶ διαίρεσιν ἐστι τὸ ψεῦδος.

a It is hard to say which is the passage, provided this means the De Anima. Dr. W. D. Ross has observed that 'The De Interpretatione was suspected by Andronicus, on the ground, apparently, of a reference to the De Anima to which nothing in that work corresponds. There are, however, many such references in undoubtedly genuine works of Aristotle, and more than one way of explaining them. There is strong external evidence for its authenticity: Theophrastus and Eudemus both wrote books which seem to presuppose it, and Ammonius tells us that Andronicus
ON INTERPRETATION

I. Let us, first of all, define noun and verb, then explain what is meant by denial, affirmation, proposition and sentence.

Words spoken are symbols or signs of affections or impressions of the soul; written words are the signs of words spoken. As writing, so also is speech not the same for all races of men. But the mental affections themselves, of which these words are primarily signs, are the same for the whole of mankind, as are also the objects of which those affections are representations or likenesses, images, copies. With these points, however, I dealt in my treatise concerning the soul; they belong to a different inquiry from that which we now have in hand.

As at times there are thoughts in our minds unaccompanied by truth or by falsity, while there are others at times that have necessarily one or the other, so also it is in our speech, for combination and division are essential before you can have truth and was the only critic who cast doubt on it. Finally, its style and grammar seem to be genuinely Aristotelian. All that can really be said against it is that much of it is somewhat elementary; but Aristotle doubtless gave elementary as well as advanced lectures’ (Aristotle, p. 10). The Provost of Oriel remarks that H. Maier ‘suggests that the reference in 16 a 8 should be transferred to 16 a 13 and relates to De An. iii. 6.’
καὶ τὸ ἀληθὲς. τὰ μὲν οὖν ὄνόματα αὐτὰ καὶ τὰ ρήματα ἐοικε τῷ ἀνευ συνθέσεως καὶ διαρέσεως
νοηματι, οἷον τὸ ἀνθρωπος ή τὸ λευκόν, ὅταν μὴ προστεθῆ τι, οὔτε γὰρ ψεῦδος οὔτε ἀληθὲς πω.
σημεῖον δ᾽ ἐστὶ τοῦτο καὶ γάρ ὁ τραγέλαφος σημαίνει μὲν τι, οὔτω δὲ ἀληθές ἢ ψεῦδος, ἐὰν
μὴ τὸ εἶναι ἢ μὴ εἶναι προστεθῆ, ἢ ἀπλῶς ἢ κατὰ χρόνον.

II. Ὅνομα μὲν οὖν ἐστὶ φωνῇ σημαντικῇ κατὰ
συνθήκην ἀνευ χρόνου, ἃς μὴ δὲν μέρος ἐστὶ ση-
μαντικον κεχωρισμένον· ἐν γὰρ τῷ Ῥαλλιπτος τὸ
ἵππος οὐδὲν αὐτὸ καθ’ έαυτό σημαίνει, ὠσπερ ἐν
τῷ λόγῳ τῷ καλὸς ἵππος. οὗ μὴ οὔδ’ ῥωσπερ
ἐν τοῖς ἀπλοῖς ὄνομασι, οὔτως ἐχει καὶ ἐν τοῖς
συμπεπλεγένοις· ἐν εκείνοις μὲν γὰρ τὸ μέρος
οὐδαμῶς σημαντικον, ἐν δὲ τούτοις βουλεται μὲν,
ἄλλῳ οὔδενος κεχωρισμένον, οἴον ἐν τῷ ἐπακτρο-
κέλης τὸ κέλης οὐδὲν σημαίνει καθ’ έαυτό.
Τὸ δὲ κατὰ συνθήκην, ὅτι φύσει τῶν ὀνοματών
οὐδὲν ἔστων, ἄλλῳ ὅταν γένηται σύμβολον, ἕπει
dηλουσὶ γέ τι καὶ οἱ ἀγράμματοι ψόφοι, οἴον
θηρίων, οὗ οὐδὲν ἔστων ὄνομα.
Τὸ δ’ οὐκ ἀνθρωπος οὐκ ὄνομα. οὐ μὴν οὐδὲ
κεῖται ὄνομα ὅ τι δὲι καλεῖν αὐτὸ· οὔτε γὰρ λόγος
οὔτε ἀπόφασις ἔστων. ἄλλῳ ἔστω ὄνομα ἀόριστῳ,
ὅτι ὁμοίως ἐφ’ ῥοτοῦν ὑπάρχει καὶ ὁτος καὶ μὴ
ὅντος.

* ή ἀπλῶς ἢ κατὰ χρόνον: some would render these words 'in the present or some other tense.' I retain the Greek word rendered 'goat-stag,' which stands for a fabulous animal, half of it goat and half stag, since the word can nowadays be found in a number of good English dictionaries.
falsity. A noun or a verb by itself much resembles a concept or thought which is neither combined nor disjoined. Such is 'man,' for example, or 'white,' if pronounced without any addition. As yet it is not true nor false. And a proof of this lies in the fact that 'tragelaphos,' while it means something, has no truth nor falsity in it, unless in addition you predicate being or not-being of it, whether generally (that is to say, without definite time-connection) or in a particular tense.

II. A noun is a sound having meaning established by convention alone but no reference whatever to time, while no part of it has any meaning, considered apart from the whole. Take the proper name 'Good- steed,' for instance. The 'steed' has no meaning apart, as it has in the phrase 'a good steed.' It is necessary to notice, however, that simple nouns differ from composite. While in the case of the former the parts have no meaning at all, in the latter they have a certain meaning but not as apart from the whole. Let us take 'pirate-vessel,' for instance. The 'vessel' has no sense whatever, except as a part of the whole.

We have already said that a noun signifies this or that by convention. No sound is by nature a noun: it becomes one, becoming a symbol. Inarticulate noises mean something—for instance, those made by brute beasts. But no noises of that kind are nouns. 'Not-man' and the like are not nouns, and I know of no recognized names we can give such expressions as these, which are neither denials nor sentences. Call them (for want of a better) by the name of indefinite nouns, since we use them of all kinds of things, non-existent as well as existing.
Τὸ δὲ Φίλωνος ἡ Φίλωνι καὶ ὅσα τοιαύτα, οὐκ ὄνόματα ἄλλα πτώσεις ὄνόματος. λόγος δὲ ἐστὶ αὐτοῦ τὰ μὲν ἄλλα κατὰ τὰ αὐτὰ· ὅτι δὲ μετὰ τοῦ ἐστὶν ἡ ἢ ἢ ἐστιν οὐκ ἀληθεύει ἢ ψεύδεται, τὸ δὲ ὄνομα αἰεὶ· οἶον Φίλωνός ἐστιν ἢ οὐκ ἐστιν· οὐδὲν γὰρ πω οὔτε ἀληθεύει οὔτε ψεύδεται.

III. Ρήμα δὲ ἐστὶ τὸ προσσημαίνον χρόνον, οὐ μέρος οὐδὲν σημαίνει χωρίς, καὶ ἐστὶν οὐκ ὅτι τῶν καθ᾽ ἐτέρου λεγομένων σημείων. λέγω δὲ ὅτι προσσημαίνει χρόνον, οἶον ὑγίεια μὲν ὄνομα, τὸ δὲ ὑγιαίνει ῥῆμα· προσσημαίνει γὰρ τὸ νῦν ὑπο- ἀρχειν. καὶ οὐκ ὅτι τῶν καθ᾽ ἐτέρου λεγομένων σημείων ἐστίν, οἶον τῶν καθ᾽ ὑποκειμένων ἢ ἐν ὑποκειμένῳ.

Τὸ δὲ οὐ υγιαίνει καὶ τὸ οὐ κάμνει οὐ ῥῆμα λέγω· προσσημαίνει μὲν γὰρ χρόνον καὶ οὐκ ὃτι τῶν ὑπόρχει, τῇ δὲ διαφορὰ ὄνομα οὐ κεῖται· ἀλλ᾽ ἐστὶν ἀόριστον ῥῆμα, ὅτι ὁμοίως ἐφ᾽ ὅτου οὐδὲν ὑπο- ἀρχει, καὶ οὕτως καὶ ἡ ὁντος.

'Ομοίως δὲ καὶ τὸ υγιανείν ἢ τὸ υγιανεῖ οὐ ῥῆμα, ἀλλὰ πτώσις ρήματος· διαφέρει δὲ τοῦ ρήματος, ὅτι τὸ μὲν τὸν παρόντα προσσημαίνει χρόνον, τὰ δὲ τὸ πέριξ.

Αὐτὰ μὲν οὖν καθ᾽ έαυτὰ λεγόμενα τὰ ρήματα ὄνόματα ἐστὶ καὶ σημαίνει τι (ἰστησι γὰρ ὁ λέγων 118
ON INTERPRETATION, ii–iii

‘Of Philo,’ ‘to Philo,’ and so on are cases of nouns and not nouns. Otherwise we define all these cases as the noun in itself is defined; but when ‘is,’ ‘was’ or ‘will be’ is added, they do not then form propositions, which either are true or are false, as the noun itself always does then. For ‘of Philo is’ cannot by itself constitute a true or false proposition. Nor yet can ‘of Philo is not.’

III. A verb is a sound which not only conveys a particular meaning but has a time-reference also. No part by itself has a meaning. It indicates always that something is said or asserted of something. Let me explain what I mean by ‘it has a time-reference also.’ Now, ‘health’ is a noun, for example, ‘is healthy’ is a verb, not a noun. For the latter conveys its own meaning but also conveys that the state signified (namely, health) now exists. Then, a verb was an indication of something asserted of something; I mean, of a something predicated of a subject or found present in it.

‘Is not-ill,’ ‘is not-well’ and so on I should not, for my own part, call verbs. Though they certainly have the time-reference and function at all times as predicates, I know of no recognized name. Let us call them (for want of a better) by the name of indefinite verbs, since we use them of all kinds of things, non-existent as well as existent.

‘He was healthy’ or ‘he will be healthy’ I likewise should not call a verb. I should call it the tense of a verb. Verb and tenses in this respect differ: the verb indicates present time but the tenses all times save the present.

Verbs by themselves, then, are nouns, and they stand for or signify something, for the speaker stops
τὴν διάνοιαν, καὶ ὁ ἀκούσας ἠρέμησεν), ἀλλ' εἰ ἦν 
μὴ, οὐσίω σημαίνοι. οὐδὲ γὰρ τὸ εἶναι ἦ
μὴ εἶναι σημεῖον ἐστὶ τοῦ πράγματος, οὐδὲ εἰν
τὸ ὄν εἶπης αὐτὸ καθ' ἐαυτὸ φιλον. αὐτὸ μὲν γὰρ
οὐδὲν ἐστι, προσσημαίνει δὲ σύνθεσιν τις, ἢν
ἀνευ τῶν συγκεκριμένων οὐκ ἐστὶ νοῆσαι.

IV. Λόγος δὲ ἐστὶ φωνὴ σημαντική ἢ τῶν
μερῶν τί σημαντικὸν ἐστὶ κεχωρισμένον, ὡς φάσις.
ἀλλ' οὐχ ἦν κατάφασις ἢ ἀπόφασις. λέγω δὲ,
οἶν άνθρωπος σημαίνει μὲν τι, ἀλλ' οὐχ ὅτι
ἐστιν ἢ οὐκ ἐστιν. ἀλλ' ἐστι κατάφασις ἢ ἀπό-
φασις, εάν τι προσεθῇ. ἀλλ' οὐχί τοῦ ἀνθρώπου
συλλαβῆ μία. οὐδὲ γὰρ ἐν τῷ μίστο τὸ ὄν ση-
μαντικόν, ἀλλὰ φωνὴ ἐστι νῦν μόνον. ἐν δὲ τοῖς
διπλοῖς σημαίνει μὲν, ἀλλ' οὐ καθ' αὑτό, ὡς
προείρηται.

17 a "Εστι δὲ λόγος ἀπας μὲν σημαντικὸς, οὐχ ὡς
ὀργανον δὲ, ἀλλ' ὡς προείρηται, κατὰ συνθήκην.
ἀποφαντικὸς δὲ οὐ πᾶς, ἀλλ' ἐν ὃ τὸ ἀληθεῖν ἡ
ψευδεσθαι ὑπάρξει. οὐκ ἐν ἀπασι δὲ ὑπάρξει,
τοιν ἢ εὐχή λόγος μὲν, ἀλλ' οὖτε ἀληθής οὔτε
ψευδῆς. οἱ μὲν οὖν ἄλλοι ἀφείσθωσαν ὥστε
ψευδῆς, οἱ μὲν οὖν ἄλλοι ἀφείσθωσαν ῥητορικῆς
γὰρ ἥ ποιητικῆς οἰκειοτέρα ἡ σκέψις. ὁ δὲ ἀπο-
φαντικὸς τῆς νῦν θεωρίας.

V. "Εστι δὲ εἰς πρῶτος λόγος ἀποφαντικὸς κατά-
φασις, εἰτα ἀπόφασις. οἱ δ' ἄλλοι πάντες συνδέσμω
εἰς.

1 B. adds κατὰ συνθήκην.

a Here the existential sense of the verb 'to be' is ignored
and the copulative only considered.
b Aristotle, of course, has in mind also questions, com-
mands and the like.
ON INTERPRETATION, Iii-v

his process of thinking and the mind of the hearer acquiesces. However, they do not as yet express positive or negative judgements. For even the infinitives 'to be,' 'not to be,' and the participle 'being' are indicative only of fact, if and when something further is added. They indicate nothing themselves but imply a copulation or synthesis, which we can hardly conceive of apart from the things thus combined.a

IV. A sentence is significant speech, of which this or that part may have meaning—as something, that is, that is uttered but not as expressing a judgement of a positive or negative character. Let me explain this more fully. Take 'mortal.' This, doubtless, has meaning but neither affirms nor denies; some addition or other is needed before it can affirm or deny. But the syllables of 'mortal' are meaningless. So it is also with 'mouse,' of which '-ouse' has no meaning whatever and is but a meaningless sound. But we saw that in composite nouns the particular parts have a meaning, although not apart from the whole.

But while every sentence has meaning, though not as an instrument of nature but, as we observed, by convention, not all can be called propositions. We call propositions those only that have truth or falsity in them. A prayer is, for instance, a sentence but neither has truth nor has falsity. Let us pass over all such, as their study more properly belongs to the province of rhetoric or poetry.b We have in our present inquiry propositions alone for our theme.

V. A simple affirmation is the first kind, a simple negation the second of those propositions called simple. The rest are but one by conjunction.
᾿Ανάγκη δὲ πάντα λόγον ἀποφαντικὸν ἐκ ῥήματος εἶναι ἢ πτώσεως ῥήματος· καὶ γὰρ ὁ τοῦ ἀνθρώπου λόγος, εὰν μὴ τὸ ἐστὶν ἢ ἢν ἢ ἐσται ἢ τι τοιοῦτον προστεθῇ, οὔτω λόγος ἀποφαντικός. διότι δὴ ἐν τί ἐστὶν ἀλλ' οὔ πολλὰ τὸ ζώον πεζὸν δίπον· οὐ γὰρ δὴ τῷ σύνεγγυς εἰρήσθαι εἰς ἐσται. ἐστὶ δὲ ἀλλης πραγματείας τούτῳ εἰπέν· ἔστι δὲ εἰς λόγος ἀποφαντικός ἢ ὁ ἐν δηλῶν ἢ ὁ συνδέσμως εἰς, πολλοὶ δὲ οἱ πολλὰ καὶ μὴ ἐν ἢ οἱ ἀσύνδετοι.

Τὸ μὲν οὖν ὅνομα ἢ ρῆμα φάσις ἐστὶν μόνον, ἐπειδὴ οὐκ ἐστὶν εἰπέν οὔτω δηλοῦντα τι τῇ φωνῇ ὡστε ἀποφαίνεσθαι, ἢ ἐρωτῶντός τινος, ἢ μὴ, ἀλλ' αὐτὸν προαιρεθείτο.

Ἔστι δὲ εἷς λόγος ἀποφαντικὸς ἢ ὁ δηλῶν ἢ ὁ συνδέσμως εἰς, πολλοὶ δὲ οἱ πολλὰ καὶ μὴ ἐν ἢ οἱ ἀσύνδετοι.

Τούτων δὲ ἢ μὲν ἀπλὴ ἐστὶν ἀπόφασις, οἷον τι κατά τινος ἢ τι ἀπό τινος, ἢ δὲ ἐκ τούτων συγκεμένη οἷον λόγος τις ἢ ὅ σύνθετος. ἐστὶ δὲ ἡ ἀπλὴ ἀπόφασις φωνὴ σημαντικῇ περὶ τοῦ ὑπάρχειν τι ἢ ἡ μὴ ὑπάρχειν, ὡς οἱ χρόνοι διηρήσται.

VI. Κατάφασις δὲ ἐστὶν ἀποφανεῖσις τινος κατά τινος. ἀπόφασις δὲ ἐστὶν ἀποφανεῖσις τινος ἀπό τινος.

Ἐπεὶ δὲ ἐστὶ καὶ τὸ ὑπάρχον ἀποφαίνεσθαι ὡς μὴ ὑπάρχον καὶ τὸ μὴ ὑπάρχον ὡς ὑπάρχον καὶ τὸ ὑπάρχον ὡς ὑπάρχον καὶ τὸ μὴ ὑπάρχον ὡς

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a Complex or composite propositions are those that comprise more than one, as, for instance, 'A is B, C and D,' 'A is B, and C is D,' and so forth.
ON INTERPRETATION, v–vi

Of all propositions a verb or a tense of a verb must form part. The definition, for instance, of ‘man,’ unless ‘is,’ ‘was’ or ‘will be’ is added or something or other of that kind, does not constitute a proposition. But someone may ask how the phrase, ‘footed animal, having two feet,’ can be held to be one and not many. That the words are pronounced in succession does not constitute them a unity. However, that question belongs to a different inquiry from the present.

Now, those propositions are single which indicate one single fact or are one, as we said, by conjunction. And those propositions are many which indicate not one but many or else have their parts unconnected.

Nouns and verbs let us call mere expressions. For we cannot use mere nouns or verbs, when expressing or enunciating something, for the purpose of making a statement, and that is so whether we happen to express a spontaneous opinion or someone propounded a question to which we are giving an answer.

And so, to return, we repeat that one kind of propositions is simple, comprising all those that affirm or deny some one thing of another, while the other is composite, that is, compounded of simple propositions. And a simple proposition, more fully, is a statement possessing a meaning, affirming or denying the presence of some other thing in a subject in time past or present or future.

VI. We mean by affirmation a statement affirming one thing of another; we mean by negation a statement denying one thing of another.

As men can affirm and deny both the presence of that which is present and the presence of that which is absent and this they can do with a reference to
μὴ ὑπάρχον, καὶ περὶ τοὺς ἐκτὸς δὲ τοῦ νῦν χρόνου Ὀσαύτως, ἀπαν ἂν ἐνδέχοιτο καὶ ὁ κατ·
έφησε τις ἀποφήσαι καὶ ὁ ἀπέφησε τις καταφήσαι. ὥστε δῆλον ὅτι πάση καταφάσει ἦστιν ἀπόφασις ἀντικειμένη καὶ πάση ἀποφάσει καταφάσις. καὶ ἐστὶν ἀντίφασις τούτο, καταφάσις καὶ ἀπόφασις αἱ ἀντικείμεναι. λέγω δὲ ἀντι·

κεῖσθαι τὴν τοῦ αὐτοῦ κατὰ τοῦ αὐτοῦ, μὴ ὁμωνύμως δὲ, καὶ ὅσα ἄλλα τῶν τοιούτων προσδιορίζομέθα πρὸς τὰς σοφιστικὰς ἐνοχλήσεις.

VII. Ἐπεὶ δ᾽ ἐστὶ τὰ μὲν καθόλου τῶν πραγμάτων τὰ δὲ καθ᾽ ἕκαστον (λέγω δὲ καθόλου μὲν ὁ ἐπὶ πλειόνων πέφυκε κατηγορεῖσθαι, καθ᾽ ἕκαστον δὲ ὃ μὴ, οἷον ἄνθρωπος μὲν τῶν καθόλου, Καλλίας δὲ τῶν καθ᾽ ἕκαστον): ἀνάγκη δὲ ἀποφαίνεσθαι ὃς ὑπάρχει τῇ ἡ μὴ ὅτε μὲν τῶν καθόλου τινί, ὅτε δὲ τῶν καθ᾽ ἕκαστον. ἕαν μὲν οὖν καθόλου ἀποφαίνηται ἐπὶ τοῦ καθόλου ὅτι ὑπάρχει ἤ τὶ ἡ μὴ, ἐσονται ἐναντίαι αἱ ἀποφάνσεις. λέγω δὲ ἐπὶ τοῦ καθόλου ἀποφαίνεσθαι καθόλου, οἷον πᾶς ἄνθρωπος λευκός, οὐδεὶς ἄνθρωπος λευκός, ὅταν δὲ ἐπὶ τῶν καθόλου μὲν, μὴ καθόλου δὲ, αὐταὶ μὲν οὐκ εἰσίν ἐναντίαι, τὰ μὲντοι δηλούμεναι ἐστὶν εἰναι ἐναντια ποτὲ. λέγω δὲ τὸ μὴ καθόλου ἀποφαίνεσθαι ἐπὶ τῶν καθόλου, οἷον ἐστὶ λευκός ἄνθρωπος, οὐκ ἐστὶ λευκὸς ἄνθρωπος· καθόλου γὰρ ὅτος τοῦ ἄνθρωπος οὐχ ὃς καθόλου κέχρηται.
times that lie outside the present, whatever a man may affirm, it is possible as well to deny, and whatever a man may deny, it is possible as well to affirm. Thus, it follows, each affirmative statement will have its own opposite negative, just as each negative statement will have its affirmative opposite. Every such pair of propositions we, therefore, shall call contradictories, always assuming the predicates and subjects are really the same and the terms used without ambiguity. These and some other provisos are needed in view of the puzzles propounded by importunate sophists.

VII. Of things there are some universal and some individual or singular, according, I mean, as their nature is such that they can or they cannot be predicates of numerous subjects, as 'man,' for example, and 'Callias.'

Propositions, affirmative and negative, must sometimes have universal subjects, at others individual or singular. Suppose we state two propositions, one affirmative, one of them negative, both universal in form, having one universal for subject; then these propositions are contrary. By 'both universal in form, having one universal for subject,' I mean to say such propositions as 'every man is white,' on the one hand, and 'no man is white,' on the other. When, however, the two propositions, while having a universal subject, are not universal in character, we cannot describe them as contraries, though on occasions, it may be, the meaning intended is contrary. Take as examples of these 'man is white,' 'man is not white' and so on. The subject or 'man' is universal, and yet the propositions themselves are not stated as though universal. For neither contains the word
ἈΡΙΣΤΟΤΕΛΟΣ

τῇ ἀποφάσει: τὸ γὰρ πᾶς οὐ τὸ καθόλου σημαίνει ἄλλ᾽ ὡστι καθόλου. ἐπὶ δὲ τοῦ κατηγορομένου καθόλου κατηγορεῖν τὸ καθόλου οὐκ ἐστὶ ἀληθῆς· οὐδεμία γὰρ κατάφασις ἀληθῆς ἔσται, ἐν ἡ τοῦ καθόλου κατηγορομένου καθόλου τὸ καθόλου κατηγορεῖται, οἷον ἐστι πᾶς ἀνθρωπός πάν ζῷον.

Ἀντικεῖσθαι μὲν οὖν κατάφασιν ἀποφάσει λέγω ἀντιφατικῶς τὴν τὸ καθόλου σημαίνουσαν τῷ αὐτῷ ὡστὶ οὐ καθόλου, οἷον πᾶς ἄνθρωπος λευκός—οὐ πᾶς ἀνθρώπως λευκός, οὐδεὶς ἀνθρώπως λευκός

—ἐστι τις ἀνθρώπως λευκός: ἐναρτίως δὲ τὴν τοῦ καθόλου κατάφασιν καὶ τὴν τοῦ καθόλου ἀπόφασιν, οἷον πᾶς ἄνθρωπος λευκός—οὐδεὶς ἀνθρώπως λευκός, πᾶς ἀνθρώπως δίκαιος—οὐδεὶς ἀνθρώπως δίκαιος.

Διὸ ταύτας μὲν οὖν οἰον τε ἄμα ἀληθείς εἶναι, τάς δὲ ἀντικειμένας αὐταῖς ἐνδέχεται ποτε ἐπὶ τοῦ αὐτοῦ ἄμα ἀληθείς εἶναι, οἷον οὐ πὰς ἀνθρώπως λευκός καὶ ἐστὶ τις ἀνθρώπως λευκός. ὡσεὶ μὲν οὖν ἀντιφάσεις τῶν καθόλου εἰσὶ καθόλου, ἀνάγκη τὴν ἐτέραν ἀληθῆ εἶναι ἡ ψευδή, καὶ ὡσεὶ ἐπὶ τῶν

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"Distributed," in the language of the text-books.
'every.' The subject is not a universal in virtue of having an 'every'; but 'every,' applied to the subject, confers on the whole proposition its absolute universality. And yet, if both subject and predicate are used in their fullest extension, the resulting proposition will be false. For, indeed, no affirmation at all could, in those circumstances, be true. 'Every man is every animal' will serve as a good illustration of this.

When their subject is one and the same but of two propositions the affirmative clearly indicates in its terms that the subject is taken universally, the negative, however, that the subject is not universally taken, I call them contradictorily opposed. Examples are 'every man is white,' 'not every man is white' and the like, or, again, we have 'some men are white,' to which 'no man is white' is opposed in the manner of which I am speaking. Propositions are contrarily opposed when affirmative and negative alike are possessed of a universal character—the subject, that is, in both cases being marked as universally taken. Thus 'every man is white' or 'is just' is the contrary, not the contradictory, of 'no man is white' or 'is just.'

In the case of such contraries we see that not both can be true at one time. Notwithstanding, their contradictories sometimes are both of them true, though their subject be one and the same. On the one hand, 'not every man is white,' on the other hand, 'some men are white' will be both of them true propositions. But of those contradictory opposites having universals for subjects and being universal in character, one must be true, the other false. This also holds good of propositions with singular terms.
καθ' ἐκαστα, οἶον ἔστι Σωκράτης λευκός—οὐκ ἔστι Σωκράτης λευκός· ὅσαι δὲ ἐπὶ τῶν καθόλου μὲν, μὴ καθόλου δὲ, οὐκ ἂεὶ ἢ μὲν ἀληθῆς ἢ δὲ ψευδῆς. ἂμα γὰρ ἀληθὲς ἔστιν εἰπεῖν ὅτι ἔστιν ἀνθρωπός λευκός καὶ ὅτι οὐκ ἔστιν ἀνθρωπός λευκός, καὶ ἔστιν ἀνθρωπός καλὸς καὶ οὐκ ἔστιν ἀνθρωπός καλός. εἰ γὰρ αἰσχρός, καὶ οὐ καλός· καὶ εἰ γίνεται τι, καὶ οὐκ ἔστιν. δόξει δ' ἂν εἴσαφνης ἄτοπον εἶναι διὰ τὸ φαίνεσθαι σημαίνειν τὸ οὐκ ἔστιν ἀνθρωπός λευκός ἃμα καὶ ὅτι οὐδεὶς ἀνθρωπός λευκός· τὸ δὲ οὐτε ταύτων σημαίνει οὐθ' ἃμα εἴ ἀνάγκης.

Φανερὸν δὲ ὅτι καὶ μία ἀπόφασις μᾶς καταφάσεις ἔστι· τὸ γὰρ αὐτὸ δὲί ἀποφήσει τὴν ἀπόφασιν ὅπερ κατέφησεν ἡ κατάφασις, καὶ ἀπὸ τοῦ αὐτοῦ, ἢ τῶν καθ' ἐκαστά τινος ἢ ἀπὸ τῶν καθόλου τινός, ἢ ὃς καθόλου ἢ ὃς μὴ καθόλου.

λέγω δὲ οἶον ἔστι Σωκράτης λευκός—οὐκ ἔστι Σωκράτης λευκός. ἐὰν δὲ ἄλλο τι ἢ ἄποφασις ἀντίκειται ἀντιφασιστικῶς, καὶ τίνες εἰσὶν αὐταί, εἰρηται· καὶ ὅτι αἱ ἐναντίαι ἄλλαι, καὶ τίνες εἰσὶν αὐταί.
for their subjects, as 'Socrates is white' and 'not white.' When, however, the two propositions are not universal in character, albeit about universals, not always do we find it the case that of these one is true, the other false. For, indeed, we can state very truly that man is and man is not white, and that man is and man is not beautiful. If ugly, a man is not beautiful; neither as yet is he beautiful, if he but tends to become so. This view on a summary notice may well seem repugnant to reason, since 'man is not white' would appear the equivalent of 'no man is white.' But they do not, in fact, mean the same, nor, again, are they both of necessity true at the same time or false. It is evident that the denial corresponding to a single affirmation itself must be single as well. The denial, that is, must deny just the thing the affirmation affirms of the selfsame, identical subj ect. We further require that the subjects be both universal or singular and also that both should be used or not used in their fullest extension. 'Socrates is white' and 'not white' constitute in this manner a pair. But if anything else is denied or the subject itself should be changed, though the predicate yet may remain, the denial will not correspond but be one that is simply distinct. To 'every man is white,' for example, 'not every man is white' corresponds, as 'no man is white,' 'man is not white' to 'some men are white,' 'man is white.'

Now to sum up the foregoing statements, we showed that a single negation is opposed to a single affirmation in the manner we called contradictory and also explained which these were. From the class of contradictory propositions we further distinguished the contrary, explaining which these also were. We,
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εἴρηται· καὶ ὅτι οὐ πᾶσα ἀληθής ἢ ψευδής ἀντί-

φασις, καὶ διά τι, καὶ πότε ἀληθής ἢ ψευδής.

VIII. Μία δὲ ἐστὶ κατάφασις καὶ ἀπόφασις ἢ

ἐν καθ᾽ ἐνὸς σημαίνουσα, ἢ καθόλου ὄντος καθόλου

ἡ μὴ ὁμοίως, οἷον πᾶς ἄνθρωπος λευκός ἐστιν—

ouκ ἐστιν πᾶς ἄνθρωπος λευκός, ἐστίν ἄνθρωπος

λευκός—οὐκ ἐστιν ἄνθρωπος λευκός, οὐδεὶς ἄν-

θρωπος λευκός—ἐστιν τις ἄνθρωπος λευκός, ἐι τὸ

λευκὸν ἐν σημαινεί. ἐι δὲ δυνών ἐν ὄνομα κείται,

ἐξ ὃν μὴ ἐστιν ἐν, οὐ μία κατάφασις, ὑπὸ τινὶ

τις θεῖον ὄνομα ἰμάτιον ἔππυρ καὶ ἄνθρωπῳ, τὸ

ἐστιν ἰμάτιον λευκόν, αὕτη οὐ μία κατάφασις οὐδὲ

ἀπόφασις μία. οὐδὲν γὰρ διαφέρει τοῦτο εἰπέων

ἡ ἐστιν ἰππος καὶ ἄνθρωπος λευκός. τοῦτο δὲ

οὐδέν διαφέρει τοῦ εἰπέων ἐστὶν ἰππος λευκὸς καὶ

ἐστὶν ἄνθρωπος λευκός. ὑπὸ τινὶ αὕται πολλὰ

σημαινουσι καὶ εἰσὶ πολλαὶ, δὴλον ὅτι καὶ ἡ

πρώτη ἤτοι πολλά ἢ οὐδὲν σημαινεῖ· οὐ γὰρ ἐστὶν

ὁ τίς ἄνθρωπος ἰππος. ὅπερ οὐδὲν ἐν ταύταις

ἀναγκη τὴν μὲν ἀληθῆ τὴν δὲ ψευδὴ εἶναι ἀντί-

φασιν.

IX. Ἐπὶ μὲν οὖν τῶν ὀντων καὶ γενομένων

ἀνάγκη τὴν κατάφασιν ἢ τὴν ἀπόφασιν ἀληθῆ ἢ

ψευδὴ εἶναι, καὶ ἐπὶ μὲν τῶν καθόλου ὡς καθόλου

1 B. adds οὐδὲ ἀπόφασις μία.

* Both may be true or both false.
moreover, have proved of two opposites that it is not the case always that one must be true and one false, and we set forth the reasons for this and explained the conditions in which one is false, if the other is true.

VIII. A statement is single or one, when it either affirms or denies some one thing and no more of another, be the subject universal or not and the statement universal or not. We may take for examples the following, provided that 'white' has one meaning:

- Every man is white.
- Not every man is white.
- Man is white.
- Man is not white.
- No man is white.
- Some men are white.

If, however, one word has two meanings, which do not combine to make one, the affirmation itself is not one. If, for instance, you gave the name 'garment' alike to a horse and a man, then it follows that 'garment is white' would be not one but two affirmations, as also would 'garment is not white' be not one denial but two. For the statement that 'garment is white' really means 'horse and man both are white.' And this statement, in turn, is the same as to say 'horse is white,' 'man is white.' And if these have more meanings than one and do not, in effect, make one statement, it follows that 'garment is white' must itself have more meanings than one or, if not, it means nothing at all. For no particular man is a horse. And accordingly not even here is one necessarily true and one false of two statements opposed contradictorily.

IX. In regard to things present or past, propositions, whether positive or negative, are true of necessity or false. And of those contradictorily
ἀεὶ τὴν μὲν ἀληθῆ τὴν δὲ ψευδῆ εἶναι, καὶ ἐπὶ τῶν καθ’ ἐκαστα, ὡσπερ εἰρηται, ἐπὶ δὲ τῶν καθόλου μὴ καθόλου λεχθέντων οὐκ ἀνάγκη εἰρηται δὲ καὶ περὶ τούτων.

Ἐπὶ δὲ τῶν καθ’ ἐκαστα καὶ μελλόντων οὐχ ὁμοιως. εἰ γὰρ πᾶσα κατάφασις καὶ ἀπόφασις ἀληθῆς ἢ ψευδῆς, καὶ ἀπαν ἀνάγκη ὑπάρχειν ἢ μὴ ὑπάρχειν, ὡστε εἰ ὁ μὲν φήσει ἐσεσθαί τι οδὲ μὴ φήσει τὸ αὐτὸ τοῦτο, δῆλον ὅτι ἀνάγκη ἀληθεύειν τὸν ἐτερον αὐτῶν, εἰ πᾶσα κατάφασις καὶ ἀπόφασις ἀληθῆς ἢ ψευδῆς. ἀμφω γὰρ οὐχ ὑπάρξει ἀμα ἐπὶ τὸι τοιούτοις. εἰ γὰρ ἀληθεῖς εἰπεῖν ὅτι λευκὸν ἢ ὅτι οὐ λευκόν ἐστιν, ἀνάγκη εἶναι λευκόν ἢ οὐ λευκόν, καὶ εἰ ἐστι λευκόν ἢ οὐ λευκόν, ἀληθεῖς ἢν φάναι ἢ ἀποφάναι καὶ εἰ μὴ ὑπάρχει, ψευδεται, καὶ εἰ ψευδεται, οὐχ ὑπάρχει, ὡστε ἀνάγκη ἢ τὴν κατάφασιν ἢ τὴν ἀπόφασιν ἀληθῆ εἶναι ἢ ψευδῆ.

Οὐδὲν ἀρα οὔτε ἐστιν οὔτε γίνεται οὔτε ἀπὸ τύχης οὐθ’ ὁπότερ’ ἐτυχεν, οὔδε ἐσται ἢ οὐκ ἐσται, ἀλλ’ ἐξ ἀνάγκης ἁπαντα καὶ οὐχ ὁπότερ’ ἐτυχεν. ἦ γὰρ ὁ φᾶς ἀληθεύσει ἢ ὁ ἀποφάς.

* This chapter deals largely with contingency. However, it is hard to determine whether Aristotle held that contingency could anywhere be found in the universe. See W. D. Ross, *Aristotle*, pp. 31, 75-78 and elsewhere.
opposed one, again, must be true and one false, when they have a universal for subject and are in themselves universal or else, as we noticed above, have a singular term for their subject. This need not, however, be so in the case of two such propositions as have universals for subjects but are not themselves universal. That question also we discussed.

When, however, we come to propositions whose subjects are singular terms, while their predicates refer to the future and not to the present or past, then we find that the case is quite changed. Propositions, whether positive or negative, being themselves true or false, every predicate that we affirm must belong to its subject or not. Hence it is that, if someone declares that a certain event will take place, while another declares it will not, one will clearly be speaking the truth, while the other as clearly will not. Both predicates cannot belong to one subject with regard to the future. For, if it is true to pronounce some particular thing to be white, it must be of necessity white. The reverse of this also holds good. As, again, it is white or not white, it was true to affirm or deny it. And, if it is not, in fact, white, then to say that it is will be false; if to say that it is will be false, then it follows the thing is not white. We are driven, therefore, to concluding that all affirmations and denials must either be true or be false.

Now, if all this is so, there is nothing that happens by chance or fortuitously; nothing will ever so happen. Contingency there can be none; all events come about of necessity. Either the man who maintains that a certain event will take place or the man who maintains the reverse will be speaking the
ὁμοίως yap av ἐγίνετο ἢ οὐκ ἐγίνετο" τὸ γὰρ ὁπότερ᾽ ἐτυχεν οὐδὲν μᾶλλον οὕτως ἢ μὴ οὕτως ἔχει ἡ ἐξει.

10 "Ετι εἰ ἔστι λευκόν νῦν, ἀληθὲς ἢν εἰπείν πρότερον ὅτι ἐσται λευκόν, ὦστε ἂεὶ ἀληθὲς ἢν εἰπείν ὁτιοῦν τῶν γενομένων ὅτι ἐστιν ἢ ἐσται. εἰ δὲ ἂεὶ ἀληθὲς ἢν εἰπείν ὅτι ἐστιν ἢ ἐσται, οὐχ οἶν τε τούτο μὴ εἶναι οὐδὲ μὴ ἔσεσθαι. ὃ δὲ μὴ οἶν τε μὴ γενέσθαι, ἀδύνατον μὴ γενέσθαι. ὅ δὲ 11 ἀδύνατον μὴ γενέσθαι, ἀνάγκη γενέσθαι. ἀπαντα οὐν τὰ ἐσόμενα ἀναγκαίων γενέσθαι. οὐδὲν ἀρὰ ὁπότερ᾽ ἐτυχεν οὐδὲ ἀπὸ τῖχης ἔσται. εἰ γὰρ ἀπὸ τίχης, οὐκ εἴς ἀνάγκης.

Ἀλλὰ μὴν οὐδ᾽ ὡς οὐδέτερόν γε ἀληθὲς ἐσεχεται λέγειν, οἶν ὅτι οὐτε ἐσται οὐτε οὐκ ἐσται. πρῶτον μὲν γὰρ οὐσίς τῆς καταφάσεως ψευδοῦς 20 ἡ ἀπόφασις οὐκ ἀληθής, καὶ ταύτης ψευδοῦς οὐσίς την κατάφασιν συμβαίνει μὴ ἀληθῆ εἶναι. καὶ πρὸς τούτοις, εἰ ἀληθὲς εἰπείν ὅτι λευκὸν καὶ μέγα, δεὶ ἀμφω ὑπάρχειν. εἰ δὲ ὑπάρξει εἰς αὔριον, ὑπάρξειν ἢ εἰς αὔριον. εἰ δὲ μήτε ἐσται μήτε μὴ ἐσται αὔριον, οὐκ ἂν εἰη τὸ ὁπότερ᾽ ἐτυχεν, οἶν ναυμαχία. δεοι γὰρ ἂν μήτε γενέσθαι 25 ναυμαχίαν αὔριον μήτε μὴ γενέσθαι.
truth on that point. Things could just as well happen as not, if the one or the other assertion is not of necessity true. For as that term is used in regard to both present and future events, the contingent is that which could just as well happen in this way as that.

If, moreover, a thing is now white, then it would have been true in past time to affirm that that thing would be white, and thus at all times was it true of whatever has now taken place to affirm that 'it is' or 'will be.' But if it at all times was true to affirm that 'it is' or 'will be,' how impossible that it should not be or not be about to be so! When a thing cannot not come to be, how impossible that it should not! If, again, its not coming to be is impossible, as we assume, come to be then it certainly must. And in consequence future events, as we said, come about of necessity. Nothing is casual, contingent. For if a thing happened by chance, it would not come about of necessity.

We cannot contend, notwithstanding, that neither proposition is true. For example, we cannot contend that a certain event neither will nor will not come to pass in the future. For, first, although one affirmation or denial should prove to be false, yet the other would still not be true. Were it, secondly, true to affirm that the same thing is both white and large, it would have both these marks of necessity. If it will have them to-morrow, it will of necessity have them. But if some event neither will nor will not come to pass on the morrow, contingency there will be none. Let us take, for example, a sea-fight. It is requisite on our hypothesis that it should neither take place nor yet fail to take place on the morrow.
Τὰ μὲν δὴ συμβαίνοντα ἄτομα ταῦτα καὶ
tουαῦτα ἑτερα, εἰπερ πάσης καταφάσεως καὶ ἀπο-
φάσεως ἢ ἐπὶ τῶν καθόλου λεγομένων ὡς καθόλου
ἡ ἐπὶ τῶν καθ᾽ ἐκαστον ἀνάγκη τῶν ἀντικειμένων
eῖναι τὴν μὲν ἀληθῆ τὴν δὲ ψευδῆ, μηδὲν δὲ
30 ὅποτε' ἐτυχεν εἶναι εν τοῖς γιγνομένοις, ἀλλὰ
πάντα εἶναι καὶ γίγνεσθαι εξ ἀνάγκης. ὥστε οὐτε
βουλεύεσθαι δέοι ἂν οὔτε πραγματεύεσθαι, ὡς εάν
μὲν τοδὶ ποιήσωμεν, ἕσται τοδὶ, εάν δὲ μὴ τοδὶ,
ούκ ἕσται τοδὶ. οὐδὲν γὰρ κωλύει καὶ εἰς μυριο-
στὸν ἔτος τὸν μὲν φάναι τοῦτο ἐσεσθαι τὸν δὲ μὴ
85 φάναι, ὥστε εἶναι ἄναγκης ἐσεσθαι ὅποτενοιν
αὐτῶν ἄληθες ἢν εἰπεῖν τότε. ἀλλὰ μὴν οὐδὲ
τοῦτο διαφέρει, εἰ τινὲς εἰπον τὴν ἀντίφασιν ἡ
midi εἰπον. δήλον γὰρ ὅτι οὔτως ἔχει τὰ πράγματα,
κἂν μὴ ὁ μὲν καταφήσῃ τι ὁ δὲ ἀποφήσῃ, οὐδὲ
γὰρ διὰ τὸ καταφαθήναι ἡ ἀποφαθήναι ἕσται ἡ
19 α οὐκ ἕσται, οὔδε εἰς μυριοστὸν ἄτος μᾶλλον ἡ ἐν
ὄποσῳρῶν χρόνῳ. ὥστε εἰ ἐν ἀπαντὶ τῷ χρόνῳ
οὔτως εἰχεν ἃστε τὸ ἐτερον ἁληθευεσθαι, ἀναγ-
καῖον ἢν τοῦτο γενέσθαι, καὶ ἐκαστον τῶν γενο-
μένων ἁεὶ οὔτως εἰχεν ὅστε εἴν ανάγκης γενέσθαι.
5 ὅ τε γὰρ ἁληθῶς εἰπέ τις ὅτι ἕσται, οὐχ οἶν τε
μὴ γενέσθαι. καὶ τὸ γιγνομένον ἁληθὲς ἢν εἰπεῖν
αἰὲ ὅτι ἕσται.
Εἰ δὴ ταῦτα ἀδύνατα—ὁρῶμεν γὰρ ὅτι ἑστιν
ἄρχη τῶν ἐσομένων καὶ ἀπὸ τοῦ βουλευεσθαί καὶ
These and other strange consequences follow, provided we assume in the case of a pair of contradictory opposites having universals for subjects and being themselves universal or having an individual subject, that one must be true, the other false, that contingency there can be none and that all things that are or take place come about in the world by necessity. No need would there be for mankind to deliberate or to take pains, could we make the assumption that if we adopt a particular line, then a certain result will ensue and that, if we do not, it will not. There is nothing to prevent any man from predicting some future event (say) some ten thousand years beforehand, while another predicts the reverse: the event that was truly predicted must needs come to pass at long last. And, indeed, it is quite immaterial whether contradictory predictions were actually made beforehand. For that someone affirmed or denied does not alter the course of events. And events are not caused or prevented by someone's affirming or denying that at some future time they would happen. Nor yet, let us add, does it matter how old the predictions may be. And, in consequence, if through the ages the nature of things has been such that a certain prediction was true, that prediction must needs be fulfilled; and the nature of all things was such that events came about of necessity. For any event anyone in the past has once truly predicted must needs in due course come about, and of that which has once come about it was true at all times to affirm that it would in due time come about.

All this is, however, impossible. We know from our personal experience that future events may depend on the counsels and actions of men, and that,
ἀπὸ τοῦ πράξαι τι, καὶ δι᾽ ἄλλως ἔστιν ἐν τοῖς μὴ ἀεὶ ἐνεργοῦσι τὸ δυνατὸν εἶναι καὶ μὴ, ὁμοίως ἐν οἷς ἀμφώ εἰναι, καὶ τὸ εἶναι καὶ τὸ μὴ εἶναι, ὡστε καὶ τὸ γενέσθαι καὶ τὸ μὴ γενέσθαι. καὶ πολλὰ ἤμων δῆλα ἔστιν οὕτως ἔχοντα, οἷον ὅτι τούτῳ τὸ ἱμάτιον δυνατὸν ἔστι διατμηθῆναι καί οὐ διατμηθῆσεται, ἀλλ᾽ ἐμπροσθὲν κατατριβῆσεται.

ομοίως δὲ καὶ τὸ μὴ διατμηθῆναι δυνατὸν οὐ γὰρ ἀν υπῆρχε τὸ ἐμπροσθὲν αὐτὸ κατατριβῆναι, εἰγε μὴ δυνατὸν ἣν τὸ μὴ διατμηθῆναι. ὡστε καὶ ἐπὶ τῶν άλλων γενέσεων, οὕτως κατὰ δύναμιν λέγονται τὴν τοιαύτην. φανερὸν ἃρα ὅτι οὐχ ἀπαντᾷ εἰς ἀνάγκης οὔτ᾽ ἔστιν οὔτε γίνεται, ἀλλὰ τὰ μὲν ὁπότερ᾽ εὗρεξ, καὶ οὐδὲν μᾶλλον ἡ κατάφασις ἡ ἡ ἀπόφασις ἄληθης, τὰ δὲ μᾶλλον μὲν καὶ ὡς ἐπὶ τὸ πολὺ θάτερον, οὐ μὴν ἀλλ᾽ εἰναι γενέσθαι καὶ θάτερον, θάτερον δὲ μὴ.

Τὸ μὲν οὖν εἶναι τὸ ὅν οὔτε, καὶ τὸ μὴ ὅν μὴ 25 εἶναι ὅταν μὴ ἤ, καὶ τὸ μὴ ὅταν μὴ ἀνάγκη εἶναι οὔτε τὸ μὴ ἤ ἀνάγκη. οὐ μὴν οὔτε τὸ ὅν ἀπαν ἀνάγκη εἶναι οὔτε τὸ μὴ ὅν μὴ εἶναι. οὐ γὰρ ταύτων ἐστι τὸ ὅν ἀπαν εἶναι εἰς ἀνάγκης ὅτε ἔστι, καὶ τὸ ἀπλῶς εἶναι εἰς ἀνάγκης. ομοίως δὲ καὶ ἐπὶ τοῦ μὴ ὀντος. καὶ ἐπὶ τῆς ἀντιφάσεως ὁ αὐτὸς λόγος. εἶναι μὲν ἢ μὴ εἶναι ἀπαν ἀνάγκη, καὶ ἐσεσθαί γε ἢ μὴ, οὐ μὲντοι διελόντα γε εἰπεῖν θάτερον ἀναγκαῖον. λέγω δὲ οἶον ἀνάγκη μὲν 30 ἐσεσθαί ναυμαχίαν αὖριον ἢ μὴ ἐσεσθαί, οὐ μὲντοι ἐσεσθαί γε αὖριον ναυμαχίαν ἀναγκαῖον οὐδὲ μὴ γενέσθαι. γενέσθαι μὲντοι ἢ μὴ γενέσθαι ἀναγκαῖον.
ON INTERPRETATION, ix

speaking more broadly, those things that are not uninterruptedly actual exhibit a potentiality, that is, a 'may or may not be.' If such things may be or may not be, events may take place or may not. There are many plain cases of this. Thus this coat may be cut in two halves; yet it may not be cut in two halves. It may wear out before that can happen: then it may not be cut into two. For, unless that were really the case, then its wearing out first were not possible. The same with all other events which in any such sense are potential. Thus it is clear that not everything is or takes place of necessity. Cases there are of contingency; no truer is then the affirmative, no falser, than the negative statement. Some cases, moreover, we find that, at least, for the most part and commonly, tend in a certain direction, and yet they may issue at times in the other or rarer direction.

What is must needs be when it is; what is not cannot be when it is not. However, not all that exists any more than all that which does not comes about or exists by necessity. That what is must be when 'it is' does not mean the same thing as to say that all things come about by necessity. And so, too, with that which is not. And with two contradictory statements the same thing is found to hold good. That is, all things must be or not be, or must come or not come into being, at this or that time in the future. But we cannot determinately say which alternative must come to pass. For example, a sea-fight must either take place on the morrow or not. No necessity is there, however, that it should come to pass or should not. What is necessary is that it either should happen to-morrow or not. And so, as the
ἈΡΙΣΤΟΤΗΛΕ

19 ὥστε ἐπεὶ ὁμοίοις οἳ λόγους ἀληθεῖς ὑσπερ τὰ πράγματα, δὴ λοιῶν ὅτι ὅσα οὕτως ἔχει ὅστε ὁπότερο
85 ἐτυχε καὶ τάναντία ἐνδέχεσθαι, ἀνάγκη ὁμοίως ἔχει καὶ τὴν ἀντίφασιν.

“Ὅπερ συμβαίνει ἐπὶ τοῖς μὴ ἄei οὐσιν ἢ μὴ ἄει μὴ οὐσιν. τούτων γὰρ ἀνάγκη μὲν θάτερον μὸρον τῆς ἀντιφάσεως ἀληθεῖς εἶναι ἢ ψεῦδος, οὐ μὲντοι τόδε ἢ τόδε ἀλλ' ὁπότερ' ἐτυχε, καὶ μᾶλλον μὲν ἀληθῆ τὴν ἐτέραν, οὐ μὲντοι ἡδῆ ἀληθῇ ἢ ψευδῇ.

19 ὥστε δὴ λοιῶν ὅτι οὐκ ἀνάγκη πάσης καταφάσεως καὶ ἀποφάσεως τῶν ἀντικειμένων τῇ μὲν ἀληθῇ τῇ δὲ ψευδῇ εἶναι: οὐ γὰρ ὅσπερ ἐπὶ τῶν ὀντων. οὐτως ἔχει καὶ ἐπὶ τῶν μὴ οὖσιν μὲν δυνάτων δὲ εἶναι ἢ μὴ εἶναι, ἀλλ' ὁσπερ εἰρηται.

5 Ἐπεὶ δὲ ἔστι τι κατὰ τιων ἡ κατάφασις σημαίνουσα, τοῦτο δὲ ἐστιν ἡ ὄνομα ἡ τὸ ἀνώνυμον, ἐν δὲ δεὶ εἶναι καὶ καθ' ἐνὸς τὸ ἐν τῇ καταφάσει (τὸ δὲ ὄνομα εἰρηται καὶ τὸ ἀνώνυμον πρότερον τὸ γὰρ οὐκ ἀνθρωπος ὄνομα μὲν οὐ λέγω ἀλλ' ἀόριστον ὄνομα: ἐν γὰρ πως σημαίνει καὶ τὸ ἀόριστον ὄνομα). ἐσται πᾶσα κατάφασις καὶ ἀπόφασις ἡ ἢ ὄνόματος καὶ ῥήματος ἡ ἢ ἀόριστον ὄνόματος καὶ ῥήματος. ἄνευ δὲ ῥήματος οὐδεμία κατάφασις οὐδὲ ἀπόφασις: τὸ γὰρ ἐστιν ἢ ἐσται ἢ ἢ γίνεται, ἢ ὅσα ἄλλα τοιαῦτα, ῥήματα ἐκ τῶν κειμένων ἐστι: προσημαίνει γὰρ χρόνου.
truth of propositions consists in corresponding with facts, it is clear in the case of events where contingency or potentiality in opposite directions is found that the two contradictory statements about them will have the same character.

With what is not always existent or not at all times non-existent we find this exactly the case. For one half of the said contradiction must be true and the other half false. But we cannot say which half is which. Though it may be that one is more probable, it cannot be true yet or false. There is evidently, then, no necessity that one should be true, the other false, in the case of affirmations and denials. For the case of those things which as yet are potential, not actually existent, is different from that of things actual. It is as we stated above.

X. An affirmative proposition is one that states something of something. The subject is either a noun or a something not possessed of a name, and of subject and predicate either must signify only one thing. We explained what we meant by a noun and by what has no name of its own. For we said that 'not-man,' for example, was not, strictly speaking, a noun, and we called such 'indefinite nouns,' since they do in a manner at least signify or denote single things. In like manner, the phrase 'is not healthy' is not, strictly speaking, a verb, and we called such 'indefinite verbs.' Thus affirmative and negative judgements consist of a noun and a verb, whether strictly so called or indefinite. Unless there is also a verb, there is no affirmation nor denial. For expressions like 'is,' 'will be,' 'was,' 'comes to be' and so forth are all verbs upon our definition of the word, for beside their particular meaning they have
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19 b ὥστε πρῶτη ἔσται κατάφασις καὶ ἀπόφασις τὸ ἔστιν ἄνθρωπος——οὐκ ἔστιν ἄνθρωπος, εἶτα ἔστιν οὐκ ἄνθρωπος——οὐκ ἔστιν οὐκ ἄνθρωπος, πάλιν ἔστι πᾶς ἄνθρωπος——οὐκ ἔστι πᾶς ἄνθρωπος, εἶτα πᾶς οὐκ ἄνθρωπος——οὐκ ἔστι πᾶς οὐκ ἄνθρωπος. καὶ ὥστε πᾶς ἄνθρωπος εἶναι τοῦ ἐκτὸς δὲ χρόνων ὁ αὐτὸς λόγος.

20 Ὅταν δὲ τὸ ἔστι τρίτον προσκατηγορηθῇ, ἤδη διχῶς λέγονται αἱ ἀντιθέσεις. λέγω δὲ οἷον ἔστι δίκαιος ἄνθρωπος· τὸ ἔστι τρίτον φημὶ συγκείσθαι ὅνομα ἣ ῥῆμα ἐν τῇ κατάφασις. ὥστε διὰ τοῦτο τέτταρα ἔσται ταῦτα, ὡς τὰ μὲν δύο πρὸς τὴν κατάφασιν καὶ ἀπόφασιν ἔξει κατὰ τὸ στοιχεῖον ὡς αἱ στερήσεις, τὰ δὲ δύο οὐ. λέγω δ’ ὅτι τὸ ἔστιν ηλί οὗ τῷ δικαίῳ προσκείσεται η τῷ οὐ δικαίῳ, ὥστε καὶ η ἀπόφασις. τέτταρα οὖν ἔσται. νοοῦμεν δὲ τὸ λεγόμενον ἐκ τῶν υπογεγραμμένων. ἔστι δίκαιος ἄνθρωπος· ἀπόφασις τούτου, οὐκ ἔστι δίκαιος ἄνθρωπος· τούτου ἀπόφασις, οὐκ ἔστιν οὐχ ἀπόφασις τούτου. τὸ γὰρ ἔστιν ἐνταῦθα καὶ τὸ οὐκ ἔστι τῷ δικαίῳ προσκείσεται καὶ τῷ οὐ δικαίῳ. ταύτα μὲν οὖν, ὥσπερ ἐν τοῖς Ἀναλυτικοῖς λέγεται, οὕτω τέτακται. ὁμοίως δὲ ἔχει κἂν καθόλου τοῦ ὀνόματος ἢ ἡ κατάφασις, οἶον πᾶς ἔστιν ἄνθρωπος δίκαιος. ἀπόφασις τούτου, οὐ πᾶς ἔστιν ἄνθρωπος δίκαιος. 35 πᾶς ἔστιν ἄνθρωπος οὐ δίκαιος——οὐ πᾶς ἔστιν

a Called tertii adiacentis, 'propositions of the third adjacent,' by later logicians.

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a time-reference also. And, therefore, 'man is,' 'man is not,' form the first affirmation and denial. 'Not-man is,' 'not-man is not' follow. Again, we have these propositions, 'every man is' and 'every not-man is'—'every man is not,' 'every not-man is not.' Just the same reasoning applies in regard to times future and past.

Where there are two other terms and the term 'is' is used as a third, there are possible two distinct types of affirmative and negative statements. We take 'man is just' for example. The word 'is' is here a third term, be it called verb or noun, in the sentence. And, therefore, from these terms or factors we form in all four propositions. Two correspond in their sequence, in respect of affirmation and denial, with those propositions or judgements which refer to a state of privation. The others, however, do not. Supposing, I mean, the verb 'is' to be added to 'just' or 'not-just,' we shall have two affirmative judgements; supposing that 'is not' is added, we then have two negative judgements. Together these make up the four. This the subjoined examples make clear:

<table>
<thead>
<tr>
<th>Affirmations</th>
<th>Negations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Man is just.</td>
<td>Man is not just.</td>
</tr>
<tr>
<td>Man is not-just.</td>
<td>Man is not not-just.</td>
</tr>
</tbody>
</table>

Now 'is' and 'is not' in these cases are added to 'just' or 'not-just.' In this way are these statements arranged, as we said in the Prior Analytics. Supposing the subject distributed, we find that the rule is the same:

<table>
<thead>
<tr>
<th>Affirmations</th>
<th>Negations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Every man is just.</td>
<td>Not every man is just.</td>
</tr>
<tr>
<td>Every man is not-just.</td>
<td>Not every man is not-just.</td>
</tr>
</tbody>
</table>
Man is just.

Man is not just.

Man is not not-just.

Man is not-just.
ON INTERPRETATION, x

There is no possibility here, in the same way as in the first case, that the statements diagonally joined in the scheme should be both of them true. None the less, they may sometimes be so.

Thus two pairs of opposed propositions have duly been set out above, and two others will follow, provided a third term is added to 'not-man,' regarded as some sort of subject:

<table>
<thead>
<tr>
<th>Affirmations</th>
<th>Negations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not-man is just.</td>
<td>Not-man is not just.</td>
</tr>
<tr>
<td>Not-man is not-just.</td>
<td>Not-man is not not-just.</td>
</tr>
</tbody>
</table>

More pairs of opposed propositions cannot be discovered than these. But the last of these groups should be viewed as distinct from the two that precede it from its having 'not-man' for a subject.a

Where 'is' does not suit as a verb and we use 'walks,' 'has health' and the like, then the same sort of scheme is produced as we get, when the verb 'is' is used. We have, for example, the following:

Every man is healthy. Every man is not healthy. Every not-man is healthy. Every not-man is not healthy.

2

Every man is just. Not every man is just.

3

Not-man is just. Not-man is not just.

Not-man is not not-just. Not-man is not-just.

The diagonal lines in each scheme are intended, therefore, to connect the affirmations and denials respectively.
ἈΡΙΣΤΟΤΛΕ

20 a ἄνθρωπος. οὐ γάρ ἐστι τὸ οὔ πᾶς ἄνθρωπος λεκτέον, ἀλλὰ τὸ οὔ, τὴν ἀπόφασιν, τῷ ἄνθρωπος προσθετέον. τὸ γάρ πᾶς οὐ τὸ καθόλου σημαίνει, ἀλλ' ὅτι καθόλου. δὴ λοιπὸν δὲ ἐκ τούθε, ὑγιαίνει ἄνθρωπος—οὐχ ὑγιαίνει ἄνθρωπος, ὑγιαίνει οὐκ ἄνθρωπος—οὐχ ὑγιαίνει οὐκ ἄνθρωπος. ταῦτα γὰρ ἐκείνων διαφέρει τῷ μὴ καθόλου εἶναι. ὅστε τὸ πᾶς ἄνθρωπος οὐδέν ἄλλο προστιθέον ἂν τῇ καθόλου εἶναι. τὰ δὲ ἄλλα τὰ αὐτὰ δὲ προστιθέον.

'Ἐπεὶ δὲ ἐναντία ἀπόφασις ἐστὶ τῇ ἂπαν ἐστὶ ζῷον δίκαιον ἡ σημαίνουσα ὅτι οὐδέν ἐστι ζῷον δίκαιον, αὐτὰ μὲν φανερῶν ὅτι οὐδέποτε ἐσονται οὔτε ἀληθεῖς ἂμα οὔτε ἐπὶ τοῦ αὐτοῦ, αἱ δὲ ἀντικείμεναι ταῦτας ἐσονται ποτε, οἷον οὐ πᾶν ζῷον δίκαιον καὶ ἐστὶ τῇ ζῷον δίκαιον. ἀκολουθοῦν δὲ αὐτὰ, τῇ μὲν πᾶς ἄνθρωπος οὐ δίκαιος ἐστιν ἂν οὐδές ἐστιν ἄνθρωπος δίκαιος, τῇ δὲ ἐστὶ τὰς ἄνθρωπος δίκαιος ἂντικείμενη ὅτι οὐ πᾶς ἄνθρωπος ἐστιν οὐ δίκαιος· ἀνάγκη γὰρ εἶναι τινα. Φανερὸν δὲ καὶ ὅτι ἐπὶ μὲν τῶν καθ' ἐκαστον, ἐὰν ἄληθες ἐρωτηθέντα ἀποφήσαι, ὅτι καὶ κατα-25 φήσαι ἄληθες· οἷον ἄρα γε Σωκράτης σοφός; οὐ. Σωκράτης ἄρα οὐ σοφός. ἐπὶ δὲ τῶν καθόλου

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We must always beware in such cases of speaking of 'not every man.' For the 'not' must be added to 'man,' since the subject is not a universal in virtue of having an 'every,' but the adjective 'every' indicates that the subject, as such, is distributed. This will be seen from the following:

Man is healthy.   Man is not healthy.
Not-man is healthy. Not-man is not healthy.

These differ from the former propositions on account of their being indefinite and not universal in form. Thus the adjectives 'every' and 'no' signify nothing more than the fact, be the statement affirmative or negative, that the subject itself is distributed. The rest of the statement will, therefore, remain in all cases unchanged.

'Every animal is just' has for contrary the statement 'no animal is just'; it is clear, then, these two propositions can never hold good of one subject nor ever together be true. But their two contradictories will sometimes turn out to be both of them true. That is, 'not every animal is just' and 'some animals are just' are both true. Then from 'every man is not-just' there follows the statement that 'no man is just'; 'not every man is not-just,' its opposite, follows from 'some men are just.' For there must, indeed, be some just men.

When the subject is individual, provided a question is asked and the negative answer is true, then a certain affirmative statement must also manifestly be true. Take the question 'Is Socrates wise?' Let the negative answer be true. 'Socrates then is unwise' can at once be correctly inferred. In the case of universals, however, not a similar but a negative
οὐκ ἀληθῆς ἡ ομοίως λεγομένη, ἀληθῆς δὲ ἡ ἀπόφασις, οἷον ἀρά γε πᾶς ἄνθρωπος σοφός; οὐ. πᾶς ἄρα ἄνθρωπος οὐ σοφός· τοῦτο γάρ ψεύδος. 

30 ἀλλὰ τὸ οὐ πᾶς ἄρα ἄνθρωπος σοφός ἀληθῆς· αὕτη δὲ ἐστιν ἡ ἀντικειμένη, ἐκεῖνη δὲ ἡ ἐναντία. 

Αἱ δὲ κατὰ τὰ ἀόριστα ἀντικείμεναι ὁμοῦντα καὶ ῥήματα, οἷον ἀρά τοὐ μὴ ἄνθρωπος καὶ μὴ δίκαιος, ὧσπερ ἀποφάσεις ἄνευ ὀνόματος καὶ κρίματος δόξειαν ἐν εἶναι. οὐκ εἰσὶ δὲ· αἱ γὰρ ἀνθρωποὶ ἀνάγκη ἢ ψεύδεσθαι τὴν ἀπόφασιν, ό δὲ εἰτῶν οὐκ ἄνθρωπος οὐδὲν μᾶλλον τοῦ εἰπότος ἄνθρωπος ἀλλὰ καὶ ἦττον ἡμῖν ἐκεῖνε τῇ ἐφευρευτικῇ διὰ τὴν μῆτι προστηθῇ. σημαινεῖ δὲ τὸ ἐστι πᾶς οὐκ-ἄνθρωπος δίκαιος οὐδὲν μᾶλλον τοῦ εἰπότος ἄνθρωπος, οὐδὲ ἡ ἀντικειμένη ταύτη ἡ οὐκ ἐστι πᾶς οὐκ-ἄνθρωπος δίκαιος· τὸ δὲ πᾶς οὐ δίκαιος οὐκ ἄνθρωπος τῷ οὐδεὶς δίκαιος.

οὐκ ἄνθρωπος εἰ μήτι προστεθῇ. σημαίνει δὲ τὸ ἔστιν οὐκ-ἄνθρωπος δίκαιος ἕκαστο ταὐτῷ, οὐδὲ ἡ αὐτοὶ ἐστιν πᾶς οὐκ-ἄνθρωπος δίκαιος, οὐδὲ ἡ ἀντικειμένη ταύτη ἡ οὐκ ἔστι πᾶς οὐκ-ἄνθρωπος δίκαιος.

Μετατιθέμενα δὲ τὰ ὁμοῦντα καὶ τὰ ῥήματα ταῦτα σημαινεῖ, οἷον ἐστὶ λευκός ἄνθρωπος, ἐστὶν ἄνθρωπος λευκός· εἰ γὰρ μὴ τοῦτο ἐστὶ, τοῦ αὐτοῦ πλείους ἔσονται ἀποφάσεις. ἀλλʼ εἴδεικτο ὅτι μία μᾶς. τοῦ μὲν γὰρ ἐστὶ λευκός ἄνθρωπος. 

20 Αποφάσις τὸ οὐκ ἐστὶ λευκός ἄνθρωπος· τοῦ δὲ ἐστὶν ἄνθρωπος λευκός, εἰ μὴ ἡ αὕτη ἐστὶ τῇ ἐστὶ λευκός ἄνθρωπος· ἐστί τοῦ οὐκ ἐστὶν οὐκ ἄνθρωπος λευκός· τοῦ δὲ ἐστὶν αὐτὴ ἐστὶ τῇ ἐστὶ λευκός ἄνθρωπος.

 Meaning, of the positive answer to the question as opposed to the negative.

That is, 'man' is regarded in both as constituting the grammatical subject, the inversion being purely 'rhetorical.' The order of words would, however, depend in a definite context on the primary interest of the speaker. It depends
inference would rather appear to be true. If the negative answer is true to the question 'Is every man wise?' to infer that 'every man is unwise' would, in those circumstances, be false, and 'not every man is wise' is correct. The latter is the contradictory and the former the contrary statement.

Indefinite predicates and nouns, such, for instance, as 'not-man,' 'not-just,' might appear to be actual negations without any noun, any verb, as those terms are more properly used. This, however, is not really so. Of necessity every negation must either be true or be false, and whoever says 'not-man,' for instance, provided that nothing is added, is speaking not more but less truly or falsely than he who says 'man.' 'Every not-man is just' is a statement, which is not in its meaning equivalent to any proposition we mentioned, nor yet is its contradictory or 'not every not-man is just.' 'Every not-man is not just,' however, amounts to the same thing as saying that 'nothing that is not man is just.'

You can transpose the subject and predicate. No change in the meaning, however, of the sentence is thereby involved. Thus we say 'man is white,' 'white is man.' For, if these did not mean the same thing, we should have more negations than one corresponding to the same affirmation. But we showed there was one and one only. Of 'man is white,' that is to say, the negation is 'man is not white,' and of 'white is man,' if we suppose that it differs in some way in sense, 'white is not man' or 'white on his interest whether he will say in a definite context, 'So-and-so is Prime Minister of England,' or will put it the other way round. But to go into such points would raise the whole question of Aristotle's logic, its character and actual relation to concrete and live human thinking.
ἈΡΙΣΤΟΤΛΕ

20 b θρωπος λευκός. ἀλλ’ ἡ ἑτέρα μὲν ἐστιν ἀπόφασις τοῦ ἐστιν οὐκ ἄνθρωπος λευκός, ἡ ἑτέρα δὲ τοῦ ἐστι λευκός ἄνθρωπος, ὥστε ἑστιν ἀπὸ μᾶς. ὅτι μὲν οὖν μετατιθεμένου τοῦ ὀνόματος καὶ τοῦ ἰθματος ἡ αὐτὴ γίνεται κατάφασις καὶ ἀπόφασις, δῆλον.

XI. Τὸ δὲ ἐν κατὰ πολλῶν ἡ πολλὰ κἂν ἄνος καταφάναι ἡ ἀποφάναι, ἐὰν μὴ ἐν τί ἢ το ἐκ τῶν πολλῶν δηλούμενοι, οὐκ ἐστὶν κατάφασις μία οἷος ἀπόφασις. λέγω δὲ ἐν οὐκ ἐὰν ἄνομα ἐν ἡ κεὶ- μενον, μὴ ἢ δὲ ἐν τί ἢἐ ἐκείνων, οἰον ὁ ἄνθρωπος ἶσως ἐστι καὶ ἵφων καὶ δίπον καὶ ἐμερον, ἀλλὰ καὶ ἐν τί γίνεται ἐκ τούτων· ἐκ δὲ τοῦ λευκοῦ καὶ τοῦ ἄνθρωπου καὶ τοῦ βαδίζειν οὐχ ἐν. ὥστε οὐτ’ ἐὰν ἐν τί κατὰ τούτων καταφήσῃς τις μία κατάφασις, ἀλλὰ φωνὴ μὲν μία καταφάσεις δὲ πολλαί, οὕτε ἐὰν καθ’ ἕνος ταῦτα, ἀλλ’ ὀμοίως πολλαί.

Εἰ οὖν ἡ ἐρώτησις ἡ διαλεκτικὴ ἀποκρίσεις ἐστιν αἰτησὶς, ἡ τῆς προτάσεως ἡ θατέρου μορίου τῆς ἀντιφάσεως, ἡ δὲ προτάσεις ἀντιφάσεις μίας μόριον, οὐκ ἂν εἰς ἀπόκρισις μία πρὸς ταῦτα. οὕτε γὰρ η ἐρώτησις μία, οὕτε ἐὰν ἢ ἄλλης, εἴρηται δὲ ἐν τοῖς Τοπικοῖς περὶ αὐτῶν, ἀμα δὲ δηλον ὅτι οὐδὲ τὸ τί ἐστιν ἑρώτησις ἑστὶ διαλεκτικὴ· δει γὰρ δεδοσθαι εκ τῆς ἑρωτήσεως ἑλεσθαι ὁπότερον βούλεται τῆς ἀντιφάσεις μόριον ἀπο- φήμασθαι. ἀλλὰ δεὶ τὸν ἑρωτώντα προσδιορίζαι πότερον τόδε ἐστὶν ὁ ἄνθρωπος ἡ οὐ τοῦτο.

Ἰππεὶ δὲ τὰ μὲν κατηγορεῖται συνιδέμενα, ὡς

* viii. 7.

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is not not-man.’ For the former negates ‘man is white,’ and the latter negates ‘white is not-man.’ There will, therefore, be two contradictories of one and the same affirmation. To transpose the subject and predicate, therefore, makes no alteration in the sense of affirmations and denials.

XI. A proposition is not one but several that predicates one thing of many or many of one and the same in a positive or negative manner, unless what the many denote, in reality, is only one thing. I am not using ‘one’ of such things as do not, although having one name, coalesce into one total unity. Man is animal, biped, domesticated: these coalesce into one, whereas ‘white,’ ‘man’ and ‘walking’ do not. Should we predicate these of one subject or affirm a single predicate of them, the resulting proposition would be single in no sense except the linguistic.

If, then, the dialectical question consists in requesting an answer—the granting, that is, of a premiss or of one out of two contradictories (such as each premiss itself is)—the answer to any such question as contains the aforementioned predicates cannot be one proposition. Though the answer sought for may be true, yet the question is not one but several. But this I explained in my Topics. At the same time the question ‘what is it?’ is not a dialectical question. And this will be clear from the fact that the question ought so to be framed as to give the respondent the chance to enunciate whichever he pleases of two contradictory answers. The question must be made more specific, inquiring, for example, whether man has or has not some definite quality.

In certain combinations of predicates we find that
ἐν τὸ πᾶν κατηγόρημα τῶν χωρὶς κατηγορουμένων, τὰ δ’ οὖ, τίς ἡ διαφορά; κατὰ γὰρ τοῦ ἀνθρώπου ἀληθῆς εἰπεῖν καὶ χωρὶς ζῷον καὶ χωρὶς δίπουν, καὶ ταῦτα ὡς ἐν, καὶ ἀνθρωποῦ καὶ λευκοῦ, καὶ ταῦθ’ ὡς ἐν. ἀλλ’ οὐχί, εἰ σκυτεύς καὶ ἀγαθός, καὶ σκυτεύς ἀγαθός. εἰ γάρ, ὅτι ἐκάτερον ἀληθῆς, εἶναι δὲ καὶ τὸ συνάμφω, πολλὰ καὶ ἄτοπα ἔσται. κατὰ γὰρ τοῦ ἀνθρώπου καὶ τὸ ἀνθρωποῦ ἀληθῆς καὶ τὸ λευκὸν, ἕσται καὶ τὸ ἄπαν. πάλιν εἰ τὸ λευκὸν αὐτὸ, καὶ τὸ ἄπαν, ἕσται ἀνθρωποῦ λευκὸς λευκὸς, καὶ τοῦτο εἰς ἄτοπον. καὶ πάλιν μουσικὸς λευκὸς καὶ ταῦτα πολλάκις ἐπελεγμένα.1 εἰ οἱ Σωκράτης Σωκράτης καὶ ἀνθρωποῦ καὶ Σωκράτης ἀνθρωποῦ.2 καὶ εἰ ἄνθρωπος καὶ δίπους, καὶ ἀνθρωποῦ δίπους.3 "Ὅτι μὲν οὖν εἰ τίς ἁπλῶς φήσει τὰς συμπλοκὰς γίνεσθαι, πολλὰ συμβαίνει λέγειν ἄτοπα, δήλω, ὅπως δὲ θετέοι, λέγουμεν νῦν. Τῶν δὴ κατηγορουμένων, καὶ ἐφ’ οἷς κατηγορεῖ 10 σθαι συμβαίνει, ὅσα μὲν λέγεται κατὰ συμβεβηκός ἢ κατὰ τοῦ αὐτοῦ ἢ θάτερον κατὰ θατέρου, ταῦτα οὐκ ἔσται ἐν, οἷον ἀνθρωποῦ λευκὸς ἐστὶ καὶ μουσικός, ἀλλ’ οὐχ ἐν τὸ λευκὸν καὶ τὸ μουσικὸν συμβεβηκότα γὰρ ἁμφοῖ τῷ αὐτῷ. οὐδ’ εἰ τὸ λευκὸν μουσικὸν ἀληθῆς εἰπεῖν, ομοίως οὐκ ἔσται τὸ μουσικὸν λευκὸν ἐν τῇ κατὰ συμβεβηκός γὰρ 1 B. adds εἰς ἄτερον. 2 καὶ Σωκράτης Σωκράτης ἀνθρωποῦ B. 3 καὶ ἀνθρωποῦ ἀνθρωποῦ δίπου B.
the separate predicates fuse themselves into one predicate; in others, again, they do not. How, we ask, does this difference arise? We can either use two propositions and state, first, that man is an animal, secondly, that man is a biped, or, combining the two into one, state that man is a two-footed animal. So we may use ‘man’ and ‘white.’ This is not so with ‘cobbler’ and ‘good.’ Though a man is a cobbler and good, yet we cannot combine them together and pronounce him also ‘a good cobbler.’ For if we can say that, whenever both predicates, separately taken, are truly affirmed of one subject, both also, when taken together, are truly affirmed of that subject, then many absurdities follow. A man is a man and is white. He will, therefore, be also a white man. And, if he is white, then it follows the composite also is white, which will give us ‘a white, white man,’ and so we go on to infinity. Take ‘musical,’ ‘walking’ and ‘white’: these may all be combined many times. And of Socrates, too, we may say ‘he is Socrates,’ ‘he is a man,’ and is, therefore, the man Socrates. We may call him a man and a biped and, therefore, a two-footed man.

To maintain, then, that predicates can always be combined without any exception leads clearly to many absurdities. Let us, then, state the real case.

Predicates, if accidental to the subject or one to the other, do not coalesce into one. We may say ‘man is musical and white.’ Being musical and whiteness, however, do not coalesce into one, being both accidental to the subject. Nor, even if everything white could be truly said to be musical, would ‘musical’ and ‘white’ form a unity; for only, indeed, incidentally is that which is musical white.
Ἀριστοτέλης

21 a

tὸ μουσικὸν λευκὸν, ῥώστε οὐκ ἔσται τὸ λευκὸν μουσικὸν ἐν τι. διὸ οὐδ᾽ σκυτεύσ᾽ ἀπλῶς ἁγαθὸς, ἀλλὰ ζῴον δίπουν· οὗ γὰρ κατὰ συμβεβηκός.

"Ετι οὖδ᾽ ὥσα ἐνυπάρχει ἐν τῷ ἑτέρῳ. διὸ οὔτε τὸ λευκὸν πολλάκις οὔτε ὁ ἀνθρωπος ἀνθρωπος ζῷόν ἐστιν ἢ δίπουν· ἐνυπάρχει γὰρ ἐν τῷ ἀνθρώπῳ τὸ ζῷον καὶ τὸ δίπουν. ἀληθὲς δὲ ἔστιν εἰπεῖν κατὰ τοῦ τινὸς καὶ ἀπλῶς, οἷον τὸν τινὰ λευκὸν ἄνθρωπον ἄνθρωπον ἄνθρωπον· οὐκ οἶκ δε, ἀλλ᾽ ὅταν μὲν ἐν τῷ προσκειμένῳ ἐνυπάρχῃ ἕπεται ἀντίφασις, οὐκ ἀληθὲς ἀλλὰ ψεῦδος, οἷον τὸν τεθνεῶτα ἄνθρωπον εἰπεῖν, ὅταν δὲ μὴ ἐνυπάρχῃ, ἀληθές. ἦ ὅταν μὲν ἐνυπάρχῃ, ἀλλὰ οὐκ ἀληθὲς, ὅταν δὲ μὴ ἐνυπάρχῃ, οὗ ἀλλὰ ἀληθὲς, ὥσπερ Ὅμηρος ἐστὶ τι, οἷον ποιητής. ἄρ᾽ οὖν καὶ ἔστιν, ἢ οὔ; κατὰ συμβεβηκός γὰρ κατηγορεῖται τοῦ Ὅμηρου τὸ ἔστιν· ὅτι γὰρ ποιητής ἐστιν, ἀλλ᾽ οὐ καθ᾽ αὑτὸ, κατηγορεῖται κατὰ τοῦ Ὅμηρου τὸ ἔστιν.

"Ωστε ἐν ὅσαις κατηγορίαις μῆτε ἐναντιώτης ἐνεστιν, ἐὰν λόγοι ἀντ᾽ ὀνομάτων λέγωνται, καὶ καθ᾽ ἕνακτα κατηγορηται καὶ μὴ κατὰ συμβεβηκός.

1 ὁ σκυτεύσ B.
And so being musical and whiteness will not coalesce into one. If a man is both good and a cobbler, we cannot combine the two terms and thus call him also 'a good cobbler.' But we can combine 'animal' and 'biped' and call man a two-footed animal; for these terms are not accidental.

Again, predicates cannot form one, of which one is implied in the other. So we cannot combine 'white' repeatedly with that which already contains it or call a man animal-man, for example, or two-footed man. That is, 'animal' and 'biped' are notions already implicit in 'man.' But we certainly can use a predicate simply of one single case, saying this or that man is a man, a particular white man a white man. Not always is this so, however. When we find in the adjunct some opposite such as implies contradictories, we then should speak falsely, not truly, in making the simple predication, as in calling a dead man a man. Where there is, on the contrary, no opposite, the simple predication will be true. Or we might rather put the case thus. For, supposing that there is an opposite, we cannot make the simple predication; where, however, there is no such opposite, we still cannot always do so. For example, take 'Homer is something'—'a poet' will do for our purpose. But can we say also 'he is'? Or will that be incorrectly inferred? 'Is' was used incidentally here. For our statement was 'he is a poet,' and 'is' was not predicated of him in the substantive sense of the word.

Therefore, in those predications having no contradiction inherent, if nouns are replaced by definitions and the predicates are not accidental, belonging to
ἈΡΙΣΤΟΤΕΛΗΣ

21a ἐπὶ τούτων τὸ τὶ καὶ ἀπλῶς ἀληθὲς ἔσται εἰπεῖν. τὸ δὲ μὴ ὄν, ὅτι δοξαστόν, οὐκ ἀληθὲς εἰπεῖν ὅτι τὶ· δοξα γὰρ αὐτοῦ οὐκ ἔστιν ὅτι ἔστιν, ἀλλ' ὅτι οὐκ ἔστιν.

XII. Τούτων δὲ διωρισμένων σκεπτέον ὃπως ἔχουσιν αἱ ἀποφάσεις καὶ καταφάσεις πρὸς ἄλληλας αἱ τοῦ δυνατὸν εἶναι καὶ μὴ δυνατὸν καὶ ἐνδεχόμενον καὶ μὴ ἐνδεχόμενον, καὶ περὶ τοῦ ἀδυνάτου τὸ καὶ ἄναγκαιον· ἔχει γὰρ ἀπορίας τυχόν. εἰ γὰρ τῶν συμπλεκομένων αὐτὰ ἄλληλας ἀντίκεινται ἀντιφάσεις, ὅσα κατὰ τὸ εἶναι καὶ μὴ εἶναι τἀτ·

21b τούτων, οἷον τοῦ εἶναι ἀνθρωπὸν ἀπόφασις τὸ μὴ εἶναι ἀνθρωπὸν, οὐ τὸ εἶναι μὴ ἀνθρωπὸν, καὶ τοῦ εἶναι λευκὸν ἀνθρωπὸν τὸ μὴ εἶναι λευκὸν ἀνθρωπὸν, ἀλλ' οὐ τὸ εἶναι μὴ λευκὸν ἀνθρωπὸν. εἰ γὰρ κατὰ παντὸς ἡ καταφάσις ἡ ἀπόφασις, τὸ εὐλογοῦν ἔσται ἀληθὲς εἰπεῖν εἰναι μὴ λευκὸν ἀνθρωπὸν. εἰ δὲ τούτῳ οὕτως, καὶ ὅσοι τὸ εἶναι μὴ προστίθεται, τὸ αὐτὸ ποιήσει τὸ ἀντί τοῦ εἶναι λεγόμενον, οἷον τοῦ ἀνθρωπος βαδίζει οὐ τὸ οὐκ ἀνθρωπος βαδίζει ἀπόφασις ἔσται, ἀλλὰ τὸ οὐ βαδίζει ἀνθρωπος· οὐδὲν γὰρ διαφέρει εἰπεῖν ἂνθρωπον βαδίζειν ἢ ἂνθρωπον βαδίζοντα εἶναι, ὥστε εἰ οὕτως πανταχόο, καὶ τοῦ δυνατὸν εἰναι ἀπόφασις ἔσται τὸ δυνατὸν μὴ εἶναι, ἀλλ' οὐ τὸ μὴ δυνατὸν εἶναι.

Δοκεῖ δὲ τὸ αὐτὸ δύνασθαι καὶ εἶναι καὶ μὴ εἶναι· πάν γὰρ τὸ δυνατὸν τέμνεσθαι ἢ βαδίζειν

a 'A log is a white man' is false: the contradictory, then, must be true, or 'a log is a not-white man,' provided that 156
the things in themselves, the individual may well be the subject also of the simple propositions. As, however, for that which is not, it is not true to say it 'is' somewhat, because it is matter of opinion. The opinion about it is not that it is; it is that it is not.

XII. Having made the foregoing distinctions, we must prove the relations subsisting between affirmations and denials affirming or denying the possible, contingent, impossible, necessary—a question not wanting in difficulty. Grant that those composite expressions containing the verbs 'is' and 'is not' are mutually contradictory. Take, for example, 'man is'; 'man is not' is the true contradictory—\textit{not}, be it noted, 'not-man is.' Or take 'man is white'; then we have 'man is not white,' and \textit{not} 'man is not-white.' For, were this not so, inasmuch as the affirmative or negative statement is true of all subjects whatever, it would prove to be true to affirm that 'a log is a not-white man.'\textsuperscript{a}

All this may be readily granted, but what of those numerous statements that do not contain 'is' or 'is not,' some other verb taking its place? If the views just expressed are correct, then the latter performs the same function. 'Man walks' has for contradictory, in consequence, 'man does not walk.' And to say that 'not-man walks' is wrong. For the two propositions, 'man walks,' 'man is walking,' mean just the same thing. Now, if all this is always the case, it applies to 'it may be' as well. Not 'it cannot be' but 'it may \textit{not}-be' is, therefore, its true contradictory.

However, it certainly seems that the same thing may be and not be. Thus, for instance, whatever the statement 'man is white' could have 'man is not-white' for contradictory.
καὶ μὴ βαδίζειν καὶ μὴ τέμνεσθαι δυνατὸν. λόγος

δὲ, ὅτι ἀπαν τὸ ὀυτὼ δυνατὸν οὐκ ἄει ἐνεργεῖ,

ὡστε ὑπάρξει αὐτῷ καὶ ἡ ἀπόφασις δύναται γὰρ

καὶ μὴ βαδίζειν τὸ βαδιστικὸν καὶ μὴ ὀρᾶσθαι τὸ

ὀρατὸν.

'Αλλὰ μὴν ἀδύνατον κατὰ τὸν αὐτὸν ἀληθεύεσθαι

τὰς ἀντικειμένας φάσεις οὐκ ἄρα τὸν δυνατὸν

εἶναι ἀπόφασις ἐστὶ τὸ δυνατὸν μὴ εἶναι. συμ-

βαίνει γὰρ ἐκ τούτων ἡ τὸ αὐτὸ φάναι καὶ ἀπο-

φάναι ἀμα καὶ κατὰ τὸν αὐτοῦ, ἡ μὴ κατὰ τὸ

εἶναι καὶ μὴ εἶναι τὰ προστιθέμενα γίνεσθαι φάσεις

καὶ ἀποφάσεις. εἰ οὖν ἐκεῖνο ἀδύνατον, τούτ' ἂν

eἰη αἱρετόν·

'Εστιν ἀρα ἀπόφασις τοῦ δυνατὸν εἶναι τὸ μὴ

dυνατὸν εἶναι. ὁ δ' αὐτὸς λόγος καὶ περὶ τοῦ

ἐνδεχόμενον εἶναι καὶ γὰρ τούτου ἀπόφασις τὸ

μὴ εἶναι εἰσαγόμενον εἶναι. καὶ ἐπὶ τῶν ἄλλων

δὲ ὁμοιοτρόπως, οἶνον ἁναγκαίον τε καὶ ἀδυνάτων.

γίνεται γὰρ ὡσπερ ἐπ' ἐκείνων τὸ εἶναι καὶ τὸ

μὴ εἶναι προσθέσεις, τὰ δ' ὑποκείμενα πράγματα

tὸ μὲν λευκὸν τὸ δ' ἀνθρώπος, οὕτως ἐνταῦθα τὸ

μὲν εἶναι καὶ μὴ εἶναι ὡς ὑποκείμενον γίνεται, τὸ

δὲ δύνασθαι καὶ τὸ ἐνδεχεσθαι προσθήκες δι-

ορίζουσαι, ὡσπερ ἐπ' ἐκείνων τὸ εἶναι καὶ μὴ

eἶναι τὸ ἀληθὲς καὶ τὸ ψεῦδος, ὁμοίως αὐτὴν ἐπὶ

tοῦ εἶναι δυνατόν καὶ εἶναι οὐ δυνατόν.

Τοῦ δὲ δυνατοῦ μὴ εἶναι ἀπόφασις οὐ τὸ οὐ

dυνατὸν εἶναι, ἀλλὰ τὸ οὐ δυνατὸν μὴ εἶναι, καὶ

τοῦ δυνατοῦ εἶναι οὐ τὸ δυνατὸν μὴ εἶναι, ἀλλὰ

tὸ μὴ δυνατὸν εἶναι. διὸ καὶ ἀκολουθεῖν ἂν δόξειαν

a Grote has called these 'intermittent realities' (Aristotle, p. 128).

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may walk or be cut may not walk or be cut. And the reason for this is that such things as are in this manner potential do not at all times energize. Both the positive and negative statements will, therefore, be true in such cases. For that which may walk or be seen may, per contra, not walk nor be seen.

None the less, contradictory statements can never be true of one subject. And so we conclude that 'it may be' has not, after all, 'it may not be' by way of its proper negation. For it follows from our previous statements that we can at one time of one subject affirm and deny the same predicate or it is not, in reality, the adding the verb 'is' or 'is not' that makes an affirmation or denial. The former position is impossible; the latter must thus be adopted.

'It cannot be,' not 'it may not be,' is, therefore, the proper negation. With 'it is contingent it should be' we deal in a similar manner, its true contradictory being 'it is not contingent it should be.' So, too, with the like propositions, 'it is necessary,' 'it is impossible.' As in the earlier instances 'is' and 'is not' have been added to the underlying things, so to speak—otherwise, the two terms, 'white' and 'man'—so in these 'it should be,' 'it should not be,' are viewed as the things underlying, to which thereupon have been added 'is possible' and 'is contingent,' additions denoting that something is possible or is not possible, just as the 'is' or the 'is not' denoted in the earlier cases that something was true or was not.

The contradictory, then, of 'it may be' is 'it cannot be,' not 'it may not be,' of which the contradictory, in turn, is 'it cannot not be,' not 'it cannot be.' So on these grounds it appears that 'it may be'
ἈΡΙΣΤΟΤΛΟΣ

21 ἄλληλαις αἱ τοῦ δυνατοῦ εἶναι καὶ δυνατοῦ μὴ εἶναι· τὸ γὰρ αὐτὸ δυνατὸν εἶναι καὶ μὴ εἶναι· οὐ γὰρ ἀντιφάσεις ἄλληλων αἱ τοιαύται, τὸ δυνατὸν εἶναι καὶ δυνατὸν μὴ εἶναι. ἄλλα τὸ δυνατὸν εἶναι καὶ μὴ δυνατὸν εἶναι οὐδέποτε ἐπὶ τοῦ αὐτοῦ ἃμα ἀληθεύονται· ἀντίκεινται γὰρ. οὐδὲ γὰρ τὸ δυνατὸν μὴ εἶναι καὶ οὐ δυνατὸν μὴ εἶναι οὐδέποτε ἃμα ἐπὶ τοῦ αὐτοῦ ἀληθεύονται.

'Ομοίως δὲ καὶ τοῦ ἀναγκαῖον εἰναι ἀπόφασις ὅτι τὸ ἀναγκαῖον μὴ εἶναι, ἀλλὰ τὸ μὴ ἀναγκαῖον εἰναι· τοῦ δὲ ἀναγκαῖον μὴ εἰναι τὸ μὴ ἀναγκαῖον μὴ εἰναι· καὶ τοῦ ἀδύνατον εἰναι οὐ τὸ ἀδύνατον μὴ εἰναι, ἀλλὰ τὸ μὴ ἀδύνατον εἰναι· τοῦ δὲ ἀδύνατον μὴ εἰναι τὸ οὐκ ἀδύνατον μὴ εἰναι.

Καὶ καθόλου δὲ, ὡσπερ εἴρηται, τὸ μὲν εἶναι καὶ μὴ εἶναι δεῖ τιθέναι ὡς τὰ ὑποκείμενα, κατάφασιν δὲ καὶ ἀπόφασιν ταῦτα ποιοῦντα πρὸς τὸ εἶναι καὶ μὴ εἰναι συντάττειν. καὶ ταύτας οἴεσθαι χρὴ εἰναι τὰς ἀντικειμένας φάσεις, δυνατῶν—οὐ δυνατῶν, ἐνδεχόμενων—οὐκ ἐνδεχόμενοι, ἀδύνατον—οὐκ ἀδύνατον, ἀναγκαῖον—οὐκ ἀναγκαῖοι, ἀληθὲς—οὐκ ἀληθὲς.

XIII. Καὶ αἱ ἀκολούθησεις δὲ κατὰ λόγον γίνον-
ON INTERPRETATION, xii—xiii

implies 'it may not be,' as also the latter the former. These statements not being contradictory, the same thing may be and may not be. 'It may be,' however, 'it cannot be,' being contradictory statements, can never be both of them true of one subject at any one time. And the same may be said of the statements 'it cannot not be,' 'it may not be.'

Propositions concerning necessity are subject to similar rules—'it is necessary that it should be,' 'it is necessary that it should not be.' 'Not necessary that it should be' will provide the negation of the former, not 'necessary that it should not be.' We have, again, taking the latter, 'not necessary that it should not be.' So also with 'it is impossible that it should be' or 'should not be.' 'Not impossible that it should be' constitutes the denial of the former, not 'impossible that it should not be'; 'not impossible that it should not be' the proper denial of the latter.

Speaking generally, then, as we said, we must take as the things underlying all such propositions as these 'that it should be' and 'that it should not be' and add one or other of these, would we make affirmations or denials of those other terms that we mentioned, of 'possible,' 'contingent' and so on.

The following pairs must be reckoned as five contradictory pairs:

- It may be. It cannot be.
- It is contingent. It is not contingent.
- It is impossible. It is not impossible.
- It is necessary. It is not necessary.
- It is true. It is not true.

XIII. From these affirmations and negations set out in the foregoing manner certain consequences logically follow.
| 22 a | taι ouτω τιθεμένωις. τω μὲν γαρ δυνατὸν εἶναι τὸ ἐνδέχεσθαι εἶναι, καὶ τοῦτο ἐκεῖνῳ ἀντιστρέφει, καὶ τὸ μὴ ἀδύνατον εἶναι καὶ τὸ μὴ ἀναγκαῖον εἶναι: τῷ δὲ δυνατὸν μὴ εἶναι καὶ ἐνδεχόμενον μὴ εἶναι τὸ μὴ ἀναγκαῖον μὴ εἶναι καὶ τὸ οὐκ ἀδύνατον μὴ εἶναι, τῷ δὲ μὴ δυνατὸν εἶναι καὶ μὴ ἐνδεχόμενον εἶναι τὸ ἀναγκαῖον μὴ εἶναι καὶ τὸ ἀδύνατον μὴ εἶναι, τῷ δὲ δυνατὸν μὴ εἶναι καὶ μὴ ἐνδεχόμενον εἶναι τὸ ἀναγκαῖον μὴ εἶναι καὶ τὸ ἀδύνατον μὴ εἴναι. Θεωρείσθω δὲ ἐκ τῆς ὑπογραφῆς ὡς λέγομεν.

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* This is the wrong negation. From statements that follow we see that the table should be corrected and 'it is not necessary that it should be' and 'it is not necessary that it should not be' should be transposed.
ON INTERPRETATION, xiii

Propositions

1. It may be.
2. It is contingent.
3. It may not be (it is contingent that it should not be).
4. It cannot be (it is not contingent).
5. It cannot not be (it is not contingent that it should not be).

Implications

\[ \begin{align*}
\text{It may be.} & \quad \text{It is contingent.} \\
\text{It is contingent.} & \quad \text{It is not impossible.} \\
\text{It is not impossible that it should be.} & \quad \text{It is not necessary.} \\
\text{It is not necessary that it should be.} & \quad \text{It may be.} \\
\text{It is not necessary that it should not be.} & \quad \text{It is not impossible that it should not be.} \\
\text{It is not impossible that it should not be.} & \quad \text{It is necessary that it should not be.} \\
\text{It is necessary that it should not be.} & \quad \text{It is impossible that it should be.} \\
\text{It is impossible that it should be.} & \quad \text{It is necessary that it should not be.} \\
\text{It is necessary that it should not be.} & \quad \text{It is impossible that it should not be.} \\
\text{It is necessary that it should be.} & \quad \text{It cannot not be.} \\
\text{It is not contingent that it should not be.} & \quad \text{It is not contingent.} \\
\text{It is not impossible that it should not be.} & \quad \text{It is impossible that it should not be.} \\
\text{It is not necessary that it should not be.} & \quad \text{It is necessary that it should not be.} \\
\text{It is not necessary that it should not be.} & \quad \text{It cannot not be.}
\end{align*} \]

Consider these points more at length in the light of the table subjoined:—

1. It may be.
   It is contingent.
   It is not impossible that it should be.
   It is not necessary that it should be.

2. It cannot be.
   It is not contingent.
   It is impossible that it should be.
   It is necessary that it should not be.

3. It may not be.
   It is contingent that it should not be.
   It is not impossible that it should not be.
   It is not necessary that it should not be.

4. It cannot not be.
   It is not contingent that it should not be.
   It is impossible that it should not be.
   It is necessary that it should be.
Τὸ μὲν οὖν ἀδύνατον καὶ οὐκ ἀδύνατον τῷ ἐνδεχομένῳ καὶ δυνατῷ καὶ οὐκ ἐνδεχομένῳ καὶ μὴ δυνατῷ ἀκολουθεῖ μὲν ἀντιφατικῶς, ἀντεστραμμένως δὲ τῷ μὲν γὰρ δυνατὸν εἶναι ἡ ἀπόφασις τοῦ ἀδύνατον ἀκολουθεῖ, τῇ δὲ ἀποφάσει ἡ κατάφασις τῷ γὰρ οὐ δυνατὸν εἶναι τὸ ἀδύνατον εἶναι· κατάφασις γὰρ τὸ ἀδύνατον εἶναι, τὸ δ᾽ οὐκ ἀδύνατον εἶναι ἀπόφασις.

Τὸ δ᾽ ἀναγκαῖον πῶς, ὀπτέον. φανερῶν δὴ ὅτι οὐχ οὕτως ἔχει, ἀλλ᾽ αἱ ἐναντίαι ἐπονται· αἱ δ᾽ ἀντιφάσεις χωρίς. οὐ γὰρ ἐστιν ἀπόφασις τοῦ ἀνάγκη μὴ εἶναι τὸ οὐκ ἀνάγκη εἶναι· ἐνδέχεται γὰρ ἀληθεύεσθαι ἐπὶ τοῦ αὐτοῦ ἀμφότερας· τὸ γὰρ ἀναγκαῖον μὴ εἶναι οὐκ ἀναγκαῖον εἶναι· αὐτίον δὲ τοῦ μὴ ἀκολουθεῖν τὸ ἀναγκαῖον ὁμοίως τοῖς ἑτέροις, ὅτι ἐναντίως τὸ ἀδύνατον τῷ ἀναγκαίῳ ἀποδίδοται, τὸ αὐτὸ δυνάμενον. εἰ γὰρ ἀδύνατον εἶναι, ἀναγκαῖον τοῦτο οὐκ εἶναι ἀλλὰ μὴ εἶναι· εἰ δὲ ἀδύνατον μὴ εἶναι, τοῦτο ἀνάγκη εἶναι· ὡστε εἰ ἐκεῖνα ὁμοίως τῷ δυνατῷ καὶ μὴ, ταῦτα ἐξ ἑναντίας, ἐπεὶ οὐ σημαίνει γε ταὐτὸν τὸ τε ἀναγκαῖον καὶ τὸ ἀδύνατον, ἀλλ᾽ ὡστερ εἰρηται, ἀντεστραμμένως.
ON INTERPRETATION, xiii

Now, 'impossible that it should be,' 'not impossible that it should be' are implied in 'may be,' 'is contingent,' and 'cannot be,' 'is not contingent'—contradictorily but with inversion. For 'may be' implies 'not impossible' (denial, that is, of 'impossible'); 'impossible,' the positive, follows upon the denial of 'may be' or, that is to say, upon 'cannot be.'

Now let us see how things stand with propositions predicating necessity. Clearly the case here is different, and contrary statements will follow upon contradictory statements, which latter belong, in addition, to sequences which are distinct. For 'not necessary that it should be' cannot form the denial or negation of 'necessary that it should not be.' For both of these predicates well may hold good or be true of one subject, as what of necessity is not need not of necessity be. Now, what is the reason why all propositions predicating necessity do not in the same manner follow as the others with which we are dealing? The answer will be found in the fact that when used with a contrary subject, to predicate impossibility amounts to affirming necessity. Supposing, I mean, it impossible for something or other to be, it is necessary, not that it should be, but that it, per contra, should not be. Supposing, again, it impossible that something or other should not be, it must of necessity be. So, if those propositions affirming the impossible or the reverse will be found without change of their subject to follow from those predicating possibility or non-possibility, those predicating necessity will follow with the contrary subject. 'It is necessary,' 'it is impossible' are not of identical meaning and yet are connected inversely—a point upon which we have touched.
ἈΡΙΣΤΟΤΕΛΟΣ

22 b


'Απορήσειε δ' ἂν τις εἰ τῷ ἀναγκαῖον εἶναι τὸ ΑΡΙΣΤΟΤΕΛΟΣ
Or is it the fact that one cannot arrange in the foregoing manner contradictories predicking necessity? For that which must be also may be. For if not, the negative follows, since one or the other must follow. And so, if a thing is not possible, then must it needs be impossible. Hence we pronounce it impossible for that which must needs be to be. But that statement, of course, is absurd. Upon 'may be,' however, 'not impossible' follows in logical sequence, 'not necessary' upon 'not impossible,' and things that must needs be need not be—which statement, again, is absurd. 'It is necessary,' again, 'that it should be' cannot be inferred from 'it may be,' nor yet can the negative statement, 'it is necessary that it should not be.' I mean that 'it may be' implies a bilateral potentiality. Should one of the two propositions just mentioned, however, be true, there will then not be both the alternatives. The thing that may be yet may not be. But if we suppose for the moment it either must be or must not be, we rule one alternative out, and 'no need is there that it should not be' (which equally holds of what must be) must follow, therefore, from 'it may be.' We note, too, that this proposition negates that which follows on 'it cannot be,' since 'it is impossible' follows in logical sequence 'it cannot be,' just as there follows, in turn, 'it is necessary that it should not be,' and this proposition the one that we mentioned itself contradicts. So we see that in this case as well contradictories follow contradictories after the manner we mentioned, and, being arranged in that manner, they lead to no logical absurdities.

One may at this point raise the question, whether upon 'it is necessary' 'it may be' will logically
Mn δυνατὸν εἶναι ἐπεταί. εἰ τε γὰρ μὴ ἔπεται, ἡ ἀντίφασις ἀκολουθήσει, τὸ μὴ δυνατὸν εἶναι καὶ εἰ τις ταύτην μὴ φήσειεν εἶναι ἀντίφασιν, ἀνάγκη λέγειν τὸ δυνατὸν μὴ εἶναι ἀπέρ ἀμφω ψευδὴ κατὰ τοῦ ἀναγκαῖον εἶναι. ἀλλὰ μὴν πάλιν τὸ αὐτὸ εἶναι δοκεῖ δυνατὸν τέμνεσθαι καὶ μὴ τέμνεσθαι καὶ εἶναι καὶ μὴ εἶναι, ὡστε ἔσται τὸ ἀναγκαῖον εἶναι ἐνδεχόμενον μὴ εἶναι· τούτῳ δὲ ψεύδος, φανερὸν δὴ ὅτι αὐτὸ τὸ δυνατὸν ἢ εἶναι ἢ βαδίζειν καὶ τὰ ἀντικείμενα δύναται, ἀλλ᾽ ἐστῖν ἐφ᾽ ὃν οὐκ ἀληθὲς, πρῶτον μὲν ἐπὶ τῶν μὴ κατὰ λόγον δυνατῶν, ὕπον τὸ πῦρ θερμαντικὸν καὶ ἐχεῖ δύναμιν ἀλογον. αἱ μὲν οὖν μετὰ λόγον δυνάμεις αἱ αὐτοῖς πλειόνων καὶ τῶν ἐναντίων, αἱ δ᾽ ἀλογοὶ οὐ πᾶσαι, ἀλλ᾽ ὡσπερ εἴρηται, τὸ πῦρ οὐ δυνατὸν θερμαίνειν καὶ μὴ, οὐδ᾽ ὅσα ἐνεργεῖ δεῖ, ἐνια μέντοι δύναται καὶ τῶν κατὰ τὰς ἀλόγους δυνάμεις ἄμα τὰ ἀντικείμενα δέσασθαι. ἀλλὰ τούτῳ μὲν τούτω χάριν εἴρηται, ὅτι οὐ πᾶσα δύναμις τῶν ἀντικειμένων, οὐδ᾽ ὅσα λέγονται κατὰ τὸ αὐτὸ εἴδος.

"Ἐναι δὲ δυνάμεις ὁμώνυμοι εἰσώ. τὸ γὰρ δυνατὸν οὐχ ἀπλῶς λέγεται, ἀλλὰ τὸ μὲν ὅτι ἀληθὲς ὡς ἐνεργεία ὅν, οἶον δυνατὸν βαδίζειν ὅτι βαδίζει, καὶ ὅλως δυνατὸν εἶναι ὅτι ἢ ἐνεργείαν ὃ λέγεται εἶναι δυνατὸν, τὸ δὲ ὅτι ἐνεργείαν ἢς λέγεται ἔστι κατ᾽ ἐνεργείαν ὃ λέγεται εἶναι δυνατὸν, τὸ δὲ ὅτι ἐνεργείαν ἢς λέγεται ἔστι κατ᾽ ἐνεργείαν ἢς λέγεται εἶναι δυνατὸν, τὸ δὲ ὅτι ἐνεργείαν ἢς λέγεται ἔστι κατ᾽ ἐνεργείαν ἢς λέγεται εἶναι δυνατὸν, τὸ δὲ ὅτι ἐνεργείαν ἢς λέγεται ἔστι κατ᾽ ἐνεργείαν ἢς λέγεται εἶναι δυνατὸν, τὸ δὲ ὅτι ἐνεργείαν ἢς λέγεται εἶναι δυνατὸν, τὸ δὲ ὅτι ἐνεργείαν ἢς λέγεται ἔστι κατ᾽ ἐνεργείαν ἢς λέγεται εἶναι δυνατὸν, τὸ δὲ ὅτι ἐνεργείαν ἢς λέγεται ἔστι κατʻ ἐνεργείαν ἢς λέγεται εἶναι δυνατὸν, τὸ δὲ ὅτι ἐνεργείαν ἢς λέγεται ἔστι κατ᾽ ἐνεργείαν ἢς λέγεται εἶ

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follow. If not, must the contradictory, 'it cannot be,' logically follow or, supposing you say that this statement is not the correct contradictory, 'it may not be' logically follows. But both propositions are false as applied to what is of necessity. It seems the accepted opinion that things that may be or be cut may, per contra, not be or be cut. And we should in that case be concluding that that which must be may not be, which, it goes without saying, is false. It is clear that not everything capable of being or walking possesses the opposite potentiality. Cases there are to the contrary. First, there are those things which have a non-rational potentiality. Among such, for instance, is fire, which is capable of giving out heat—a non-rational potentiality. Rational potentialities issue in more than one way or in contrary results or directions. Not so all irrational ones. That is, fire, to repeat what we said, cannot both give and not give out heat, nor can anything else always actual have any such potentiality. Some irrational potentialities, however, allow of such issues. So much, then, by way of explaining that, even where 'potentiality' is quite unambiguously used, not every potentiality admits of such opposite issues.

But sometimes the term is ambiguous. 'Possible' itself is ambiguous. It is used, on the one hand, of facts and of things that are actualized; it is 'possible' for someone to walk, inasmuch as he actually walks, and in general we call a thing 'possible,' since it is now realized. On the other hand, 'possible' is used of a thing that might be realized; it is 'possible' for someone to walk, since in certain conditions he would. It is only to that which can move that this
μόνοις ἡ δύναμις, ἐκείνη δὲ καὶ ἐπὶ τοῖς ἀκινήτοις. ἀμφῶ δὲ ἀληθὲς εἰπεῖν τὸ μὴ ἀδύνατον εἰναι βαδί-
ζειν ἡ εἰναι, καὶ τὸ βαδίζον ἡδὴ καὶ ἐνεργοῦν καὶ τὸ βαδιστικὸν. τὸ μὲν οὖν οὐτῳ δυνατὸν οὐκ ἀληθὲς κατὰ τοῦ ἀναγκαῖου ἀπλῶς εἰπεῖν, θάτερον δὲ ἀληθὲς. ἠσθε ἐπεὶ τῷ ἐν μέρει τὸ καθόλου ἐπεται, τῷ εἰ ἀνάγκης ὦτι ἐπεται τὸ δύνασθαι εἰναι, οὐ μέντοι πάν. καὶ ἐστι δὴ ἀρχὴ Ἰσως τὸ ἀναγκαῖον καὶ μὴ ἀναγκαῖον πάντων η εἰναι η μὴ εἰναι, καὶ τάλλα ὡς τούτοις ἀκολουθοῦντα ἐπισκοπεῖν δεί.

Φανερὸν δὴ ἐκ τῶν εἰρημένων ὅτι τὸ εἰ ἀνάγκης ὅν κατ᾽ ἐνέργειαν ἐστιν, ὡστε εἰ πρότερα τὰ αἰώνια, καὶ ἡ ἐνέργεια δυνάμεως προτέρα. καὶ τὰ μὲν ἀνεν δυνάμεως ἐνέργειαι εἰσὶ, οἷον οἱ πρώται 25 οὐσίαι, τὰ δὲ μετὰ δυνάμεως, ἀ τῇ μὲν φύσει πρότερα τῷ δὲ χρόνῳ ἠσθε, τὰ δὲ οὐδέποτε ἐνέργειαι εἰσὶν ἁλλὰ δυνάμεις μόνον.

ΧΙ. Πότερον δὲ ἐναντία ἐστὶν ἣ κατάφασις τῇ ἀποφάσει ἢ τῇ κατάφασις τῇ καταφάσει, καὶ ὁ λόγος τῶ λόγῳ ὁ λέγων ὅτι πᾶς ἄνθρωπος δίκαιος τῷ οὐδεὶς ἄνθρωπος δίκαιος, ἢ τὸ πᾶς

a God and the intelligences moving the celestial or heavenly bodies. The argument implies that the necessary is also eternal. 'The main proof,' says Dr. Ross, 'of the priority of actuality is the following:—What is external is prior in nature to what is perishable; and nothing is eternal by virtue of potentiality. For that which has the potentiality of being has also the potentiality of not-being, while the eternal is that which from its very nature cannot fail to be. In a sense, therefore, all the primordial entities in the universe are free from potentiality. God is in the fullest sense actual, since He is always what He is at any time, and has no element of unrealized potentiality' (Aristotle, p. 177).
kind of capacity belongs, while the former may also belong to such things as have no power of motion. Both of that which is walking and actual and of that which is capable of walking but does not now actually walk, it holds good that it is not impossible that it should walk (or should be). Now, this latter potenti-
ality we cannot affirm of the necessary in its un-
qualified sense; but the other we can so affirm. In conclusion, then, as the universal must follow upon the particular, so will the possible follow on that which exists of necessity, although not in all of its senses. Of being, not-being, indeed, may necessity, I think, and its absence be properly called the first principles, so that all else must be viewed as but following or consequent on them.

It is evident from the foregoing that the necessary is also the actual. And the actual is prior to the potential, inasmuch as the eternal is prior. There are, first of all, those actualities entirely without possi-
bility, such as the primary substances. Then there is that class of things which are actual and also potential: actuality is prior to possibility with these in the order of nature, although it is not prior in time. There are finally those things also that remain but the barest possibilities and never become actualities.

XIV. Here arises a doubt as to whether an affirma-
tive statement is contrary to a negative statement or contrary to a second affirmation. Has the proposi-
tion ‘every man is just’ for its contrary ‘no man is

b Generated and perishable substances in the sublunary
world.

c Such as the largest number, the least magnitude and so on. These are never realized, though conceivable.
άνθρωπος δίκαιος τῷ πάσι ἀνθρωπος ἄδικος, οἶον ἐστὶ Καλλίας δίκαιος—οὐκ ἐστὶ Καλλίας δίκαιος—

Καλλίας ἄδικος ἐστι· ποτέρα δὴ ἐναντία τούτων; ἐὰν τὰ μὲν ἐν τῇ φωνῇ ἀκολουθεῖ τοῖς ἐν τῇ διανοίᾳ, ἐκεῖ δὲ ἐναντία δοξα ἡ τοῦ ἐναντίου, οἶον ὑπὸ πάντων ἀνθρωπος δίκαιος τῇ πάσι ἀνθρωπος ἄδικος,

καὶ ἐπὶ τῶν ἐν τῇ φωνῇ καταφάσεωι ἀνάγκη ὁμοίως ἔχειν. ἐὰν δὲ μὴ ἐκεῖ ἡ τοῦ ἐναντίου δοξα ἐναντία ἐστίν, οὔτε ἡ κατάφασις τῇ καταφάσει ἐσται ἐναντία, ἀλλ᾽ ἡ εἰρημένη ἀποφασις...

Τὸ μὲν δὴ τούτῳ οἴεσθαι τὰς ἐναντίας δοξας ὀρίσθαι, τῷ τῶν ἐναντίων εἰναι, ψεύδος· τοῦ γὰρ ἀγαθοῦ ὁτι ἀγαθον, ἀλλὰ δὲ ὃτι οὐκ ἀγαθον ψευδὴς, ἐτέρα δὲ ὃτι κακὸν. ποτέρα δὴ τούτων ἐναντία τῇ ἀληθείᾳ; καὶ ἐὰν ἐστιν ἡ ἐναντία; καὶ εἰ ἐστιν μία, καθ᾽ ὁποτέραν ἡ ἐναντία;

Τὸ μὲν δὴ τούτῳ οἰεσθαι τὰς ἐναντίας δοξας ὀρίσθαι, τῷ τῶν ἐναντίων εἰναι, ψεύδος· τοῦ γὰρ ἀγαθοῦ ὁτι ἀγαθον καὶ τοῦ κακοῦ ὁτι κακον ἡ ἀληθῆς ἐσται, εἴτε πλείους εἴτε μία ἐστίν. ἐναντία δὲ ταῦτα. ἀλλ᾽ οὐ τῷ ἐναντίων εἰναι ἐναντία, ἀλλὰ μᾶλλον τῷ ἐναντίως.

Εἰ δὴ ἐστι μὲν τοῦ ἀγαθοῦ ὁτι ἐστὶν ἀγαθον

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a Grote observes upon this that some of Aristotle's observations ' respecting the place and functions of the negative particle (οὐ), must be understood with reference to the variable order of words in a Greek or Latin sentence; for instance, the distinction between Kallias non est iustus and Kallias est non iustus does not suggest itself to one speaking English or French" (Aristotle, p. 137). But possibly this particular chapter is not by Aristotle himself.
just'? Or is 'every man is unjust' the contrary? 'Callias is just,' 'is not just,' 'is unjust' illustrate what I mean. Which of these propositions are contraries? Supposing that the verbal proposition corresponds with the intellectual judgement, and, further, that that judgement is contrary to a judgement asserting the contrary, as judging that every man is just is to judging every man is unjust, then the same thing assuredly holds of our verbal propositions as well. On the other hand, if we suppose that the judgement asserting the contrary is not, in the mind of the speaker, the contrary one to another, no longer will one affirmation be contrary unto another. The negation will be the true contrary. Which of the true judgements, then, is the contrary one to the false? Is it that which denies the false judgement? Or that which pronounces the contrary? Take, for example, three judgements concerning a thing that is good—a true judgement or that 'it is good,' a false judgement or 'it is not good,' and a third, quite distinct, 'it is bad.' Of the last two which constitutes really the contrary one to the true? Or supposing them one and the same, then which verbal expression is the contrary?

To fancy that contrary judgements are those that have contrary subjects is to take an erroneous view. For the judgement that a good thing is good and the judgement that a bad thing is bad may be possibly one and the same; one or more, they are both of them true. Yet the subjects are contrary here. But what constitutes judgements as contrary is having two contrary senses, not having two contrary subjects. Suppose that we have two opinions regarding a thing that is good, one opining that that thing is
δόξα, ἄλλη δ᾽ ὅτι οὐκ ἀγαθὸν, ἐστὶ δὲ ἄλλο τι ὁ
οὐχ ὑπάρχει οὐδ᾽ οἷόν τε ὑπάρξαι, τῶν μὲν δὴ
10 ἄλλων οὐδεμίαν θετέον, οὔτε ὅσαι ὑπάρχειν τὸ μὴ
ὑπάρχον δοξάζουσιν οὐθ᾽ ὅσαι μὴ ὑπάρχειν τὸ
ὑπάρχον (ἀπειροι γὰρ ἀμφότεροι, καὶ ὅσαι ὑπ-
άρχειν δοξάζουσι τὸ μὴ ὑπάρχον καὶ ὅσαι μὴ
ὑπάρχειν τὸ ὑπάρχον), ἀλλ᾽ ἐν ὅσαις ἐστὶν ἡ
ἀπάτη. αὐταί δὲ εἰσὶν ἐξ ὅν τιν αἰ γενέσεις. ἐκ τῶν
ἀντικειμένων δὲ αἰ γενέσεις, ὡστε καὶ αἰ ἀπάται.

Εἰ οὖν τὸ ἀγαθὸν καὶ ἀγαθὸν καὶ οὐ κακὸν ἐστι,
καὶ τὸ μὲν καθ᾽ ἑαυτὸ τὸ δὲ κατὰ συμβεβηκός
(συμβεβηκε γὰρ αὐτῷ οὐ κακῷ εἶναι), μᾶλλον δὲ
ἐκάστου ἀληθῆς ἡ καθ᾽ ἑαυτό, καὶ ψευδῆς, εἰπερ
καὶ ἀληθῆς. ἡ μὲν οὖν οτί οὐκ ἀγαθὸν τὸ ἀγαθὸν
τοῦ καθ᾽ ἑαυτὸ ὑπάρχοντος ψευδῆς, ἡ δὲ τοῦ οτι
20 κακὸν τοῦ κατὰ συμβεβηκός. ὡστε μᾶλλον ἂν
εἰ ἡ ψευδῆς τοῦ ἀγαθοῦ ἡ τῆς ἀποφάσεως ἡ ἡ τοῦ
ἐναντίου δόξα. διέψευσται δὲ μάλιστα περὶ ἐκα-
στον ὁ τῆς ἐναντίαν ἐχων δόξαν· τὰ γὰρ ἐναντία
τῶν πλείστων διαφερόντων περὶ τὸ αὐτό. εἰ οὖν
ἐναντία μὲν τούτων ἡ ἐτέρα, ἐναντιωτέρα δὲ ἡ
25 τῆς ἀντιφάσεως, δῆλον ὅτι αὐτή ἂν εἰ ἐναντία.
ἡ δὲ τοῦ ὅτι κακὸν τὸ ἀγαθὸν συμπεπλεγμένη

a In order to make this point clear, Aristotle, it seems,
should have added 'whereas there can be but one contrary.'

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good and the other one that it is not, and suppose there exist other qualities such as are neither inherent nor could be inherent in good, no opinion, notwithstanding, must be taken for the contrary one to the true that opines that some quality inheres, though it does not inhere, in the good or opines that it does not inhere, though it does so inhere, in the good, inasmuch as no limit of range is imposed on these types of opinion. We shall rather call contrary to the true ones those judgements, in which there is error. And these have to do with generation. Generation means passing or transition from one of two extremes to the other: hence error is such a transition.

What is good, then, is good and not bad. The one quality belongs to it essentially, the other by accident only. For by accident is it not bad. But supposing that judgement the truest that deals with a thing's actual essence, that false one is really most false, that in like manner deals with its essence. A false judgement, dealing with essence, is 'that which is good is not good.' 'It is bad,' though a false judgement also, concerns what is accidental only. So the judgement denying its goodness is falser than that predicing some other and contrary quality. And then most completely deceived is the man who on this or that point entertains an opinion or judgement which is contrary to that which is true. For contraries belong to those things that within the same class differ most. Supposing, then, that one of two judgements is contrary to that which is true but that that which is contradictory is even more contrary still, then the latter must be the real contrary. To judge that a good thing is bad is, moreover, a com-
ἐστι· καὶ γὰρ ὅτι οὐκ ἁγαθὸν ἀνάγκη ἵς ὑπο-
λαμβάνειν τῶν αὐτῶν.

"Ετι δὲ, εἰ καὶ ἐπὶ τῶν ἄλλων ὁμοιῶς δεῖ έχειν, καὶ ταύτη ἂν δόξειν καλῶς εἰρησθαι· ἡ γὰρ παν-
tαχοῦ τό τῆς ἀντιφάσεως ἢ οὐδαμοῦ. ὁσοῖς δὲ

30 μὴ ἐστιν ἑναντία, περὶ τούτων ἐστὶ μὲν ψευδῆς ἢ τῇ ἀληθεὶ ἀντικειμένη, οἷον ὁ τῶν ἄνθρωπο
μιᾶς οὐκ ἄνθρωπον οἴόμενος διέφευσται. εἰ οὖν αὕται ἑνα-
tίαι, καὶ αἱ ἄλλαι αἱ τῆς ἀντιφάσεως.

"Ετι ομοιῶς ἐχεὶ ἡ τοῦ ἁγαθοῦ ὅτι ἁγαθὸν καὶ ἡ τοῦ μὴ ἁγαθοῦ ὅτι οὐκ ἁγαθὸν, καὶ πρὸς ταύτας ἡ τοῦ ἁγαθοῦ ὅτι οὐκ ἁγαθὸν καὶ ἡ τοῦ μὴ ἁγαθοῦ ὅτι ἁγαθὸν. τῇ οὖν τοῦ μὴ ἁγαθοῦ ὅτι οὐκ ἁγαθὸν ἀληθεὶς ὑποθῇ δόξῃ τίς ἂν εἰ ἡ ἑναντία; οὔ γὰρ δὴ ἡ λέγουσα ὅτι κακὸν· ὅμως γὰρ ἂν ποτε εἰ ἡ ἀληθῆς, οὐδέποτε δὲ ἡ ἀληθῆς ἀληθεὶ ἑναντία. ἐστὶ γὰρ τῇ μὴ ἁγαθὸν κακὸν, ἀληθεὶς εἶναι. αὐτὸ τῆς ὅτι οὐκ κακὸν· ἀληθῆς ὅτι οὐκ ἁγαθὸν κακὸν. γὰρ καὶ αὐτῆ. ἀμα γὰρ καὶ ταύτα ἂν εἰ. λείπε-
tαι οὖν τῇ τοῦ μὴ ἁγαθοῦ ὅτι οὐκ ἁγαθὸν ἑναντία

24 a ἡ τοῦ μὴ ἁγαθοῦ ὅτι ἁγαθὸν· ψευδῆς γὰρ αὐτῆ. ἀμα γὰρ καὶ ταύτα ἂν εἰ. λείπε-

24 ταὶ οὐ τῇ τοῦ μὴ ἁγαθοῦ ὅτι οὐκ ἁγαθὸν ἑναντία

Φανερὸν δὲ ὅτι οὐδὲν διοίσει οὐδ᾽ ἂν καθόλου

5 τιθῶμεν τήν κατάφασιν· ἡ γὰρ καθόλου ἀπόφασις

5 ἑναντία ἐσται, οὐ φῇ δῷ τῇ δόξῃ τῇ δόξαζουσῃ ὅτι πᾶν ὁ ἂν ἡ ἁγαθὸν ἁγαθὸν ἐστιν ἡ ὑπὸ τό ὁ ἁγαθὸν ἁγαθὸν ἐστιν ἡ ὑπὸ τό ὁ ἁγαθὸν 176
posite judgement. For the man who thus judges, I think, must as certainly judge it not good.

Then again, the contradictory judgement is the contrary always or never. And if this holds good in all others, so must it in this case as well, and the view that we took was correct. In the case of things having no contraries we hold that that judgement is false which denies what the true one asserts. Thus a man is, for instance, deceived who supposes a man not a man. If the contraries here are the negatives, so, we conclude, are they always.

Then, that what is not good is not good is a similar or parallel judgement to one that a good thing is good, and that that which is good is not good is a parallel judgement to judging that that which is not good is good. What is contrary, then, to the true one that what is not good is not good? Not, at any rate, that it is bad; that might well at the same time be true, and true judgements can never be contrary. Some things that are not good are bad, so that both may together be true. Nor is judging it not bad the contrary, seeing that, too, may be true, since both attributes might be compresent. And so in the case of the judgement that what is not good is not good we are driven at last to conclude that the contrary is that it is good. For that judgement, of course, is a false one. Again, in a similar manner of the judgement that a good thing is good the true contrary is that it is not.

To make the affirmation universal will evidently not alter matters. The universal negative judgement will then be the obvious contrary. Suppose, for example, a man judges everything good to be good: then the contrary of this is his judging that nothing
ἀγαθὸν. ἡ γὰρ τοῦ ἀγαθοῦ ὅτι ἀγαθὸν, εἰ καθόλου τὸ ἀγαθὸν, ἡ αὐτὴ ἐστὶ τῇ ὅτι ὃ ἂν ἢ ἀγαθὸν δοξαζούσῃ ὅτι ἀγαθὸν· τούτο δὲ οὐδὲν διαφέρει τοῦ ὅτι πᾶν ὃ ἂν ἢ ἀγαθὸν ἀγαθὸν ἐστὶν. ὁμοίως δὲ καὶ ἐπὶ τοῦ μὴ ἀγαθοῦ.

Ωστε εἰπερ ἐπὶ δόξης οὕτως ἔχει, εἰσὶ δὲ αἱ ἐν τῇ φωνῇ καταφάσεις καὶ ἀποφάσεις σύμβολα τῶν ἐν τῇ ψυχῇ, δήλον ὅτι καὶ καταφάσει ἐννοία μὲν ἀποφάσις ἢ περὶ τοῦ αὐτοῦ καθόλου, οἷον τῇ ὅτι πᾶν ἀγαθὸν ἀγαθὸν ἢ ὧτι πᾶς ἀνθρώπος ἢ ἀγαθὸς ἢ ὧτι οὐδὲν ἢ οὐδεὶς, ἀντιφατικῶς δὲ ὅτι ὃ ὥσπερ οὐ πᾶν ἢ οὐ πᾶς. φανερὸν δὲ ὅτι καὶ ἀληθῆ ἀληθεὶ οὐκ ἐνδέχεται ἐννοίαν εἶναι οὐτε δόξαν οὐτε ἀπόφασιν. ἐννοία μὲν γὰρ αἱ περὶ τὰ ἀντικείμενα, περὶ ταῦτα δὲ ἐνδέχεται ἀληθεύειν τὸν αὐτὸν ἄμα δὲ οὐκ ἐνδέχεται τὰ ἐννοία ὑπ-άρχειν τῷ αὐτῷ.
of that kind is good. For the judging what is good to be good, if the subject be taken universally, amounts to a judgement pronouncing whatever is good to be good, and the latter in turn to a judgement pronouncing good everything good. And the same is the case with the not good.

If this is the case with our judgements and verbal affirmations and denials are symbols of those mental judgements, it is clear the universal denial, when the subject is one and the same, is the positive statement's true contrary. For instance, propositions affirming every good, every man to be good have for contraries propositions affirming no man, nothing good to be good. Contradictories, however, have for subjects 'not every man,' 'not every good.' It is manifest, too, that true judgements and true propositions can never be contrary one to another. While two propositions that are true can together be truly asserted, two contrary propositions must predicate contrary qualities, and these in the selfsame subject can never together inhere.
THE PRIOR ANALYTICS
INTRODUCTION

I. The Development of Aristotle’s Logic

The invention of the syllogism, or rather the systematic treatment of the laws of inference, was perhaps Aristotle’s greatest and most original achievement. It stands to reason that his approach to logical studies must have been through the Dialectic of the Academy; but although we can see something of the practical application of Plato’s theories in such dialogues as the Theaetetus, Parmenides, Sophist and Politicus, there is little ground for supposing that they were ever fully developed on the formal side. Indeed our evidence points the other way. When Aristotle is consciously building upon Plato’s foundations, or upon those of any other philosophical school, he is accustomed to point out and account for the mistakes of his predecessors; but in the Analytics the only overt reference to Plato (46 a 31) concerns the practice of definition by dichotomy (as exemplified in the last two dialogues mentioned above), and his description of it as “a kind of weak syllogism” seems to imply that it was Plato’s nearest approach in this direction. It is moreover intrinsically probable that the systematic treatment of the inferential process should be attributed to Aristotle’s own remarkable powers of analysis.
PRIOR ANALYTICS

The theory of syllogism, as we find it expressed in the Prior Analytics, is clearly the result of long study and experiment. Attempts have been made in recent years by two German scholars, F. Solmsen (Die Entwicklung der aristotelischen Logik und Rhetorik, conveniently summarized by Professor J. L. Stocks in C.Q., 1933, pp. 115-124) and P. Gohlke (Die Entstehung der aristotelischen Logik) to trace the development of the theory. Solmsen arranges the main logical works in the following order: (1) Topics I-VII; (2) Posterior Analytics I; (3) Topics VIII and IX (De Sophisticis Elenchis); (4) Posterior Analytics II; (5) Prior Analytics. Dr Gohlke on the other hand holds that the received order of the two Analytcs is correct, and that Topics VIII and IX presuppose the Analytics. I do not find his arguments entirely convincing. Certainty about such a point is perhaps unattainable, but I am strongly inclined towards the view that the Prior Analytics contains at least some of Aristotle's maturest logical thought.

Of course the problem is complicated by the fact that the logical works as we possess them are almost certainly compilations from notes or rough drafts for Aristotle's discourses. The material is not always well arranged (e.g. chs. xv-xxii of An. Pr. II would come more naturally in the Topics, and there is no reason to suppose that the present arrangement has any chronological significance. It is moreover highly probable that corrections and afterthoughts have been inserted in the text without complete assimilation; and that many of the minor inconsistencies are due to this procedure. Dr Gohlke's attempt to identify these later passages, and so to distinguish the different strata of thought, is attractively worked
out; but his results must as yet be regarded as conjectural.

II. The Theory of Syllogism in the Prior Analytic s

Summary of the contents

The first book of the Prior Analytics falls into two halves. The first 26 chapters are devoted to the formal statement of the theory: the enunciation and demonstration of the laws of syllogistic reasoning, and the analysis of the various forms which the syllogism can take. The last 20 chapters contain instructions for the construction of syllogisms, either in general or for special purposes, and a number of practical directions and warnings to students.

Aristotle begins naturally by defining his subject and explaining his terminology. It is worth noting in this connexion that the use of the words ὅρος (bound or limit), ἄκρον (extreme) and μέσον (middle) to describe the terms, and of διάστημα (interval) as an alternative to πρότασις or premiss, suggests that Aristotle was accustomed to employ some form of blackboard diagram, as it were, for the purpose of illustration. A premiss was probably represented by a line joining the letters chosen to stand for the terms. How quality and quantity were indicated can only be conjectured. These distinctions are stated in ch. ii. The quantitative analysis of judgements was almost certainly Aristotle's discovery; there is no trace of it in Plato, and it is certainly not explicit in the Categories; it is first formulated in ch. vii of the De Interpretatione. The point is, of course, vital to the theory.
PRIOR ANALYTICS

of syllogism (cf. An. Pr. I. xxiv and xxxiii). The rest of the chapter gives the rules for conversion of assertoric premisses. Ch. iii. deals with the conversion of apodeictic and problematic premisses, which are now mentioned for the first time. It is extremely probable that this “chapter” did not form part of the original course on the syllogism, but was “added” after Aristotle had outlined his theory of modality.

Chs. iv-vi describe the valid moods in the three figures. It should be observed that Aristotle did not recognize the fourth or “Galenian” figure (at any rate as a separate type); in which he was probably right. Ch. vii sums up the findings of the three previous chapters, and shows how all syllogisms can be reduced to the universal syllogisms of the first figure.

Chs. viii-xxii are devoted to the analysis of modal syllogisms. This part of Aristotle’s theory is full of difficulties, and is discussed in a separate section (pp. 189-193).

In ch. xxiii Aristotle returns to his main theory, and distinguishing logical proofs as either ostensive or hypothetical, proceeds to examine the mechanism of syllogism. He first explains the function of the middle term, and shows that the three figures exhaust the possible ways of relating the middle to the extreme terms. Hence all ostensive syllogisms are effected by these three figures. But hypothetical syllogisms also depend upon ostensive proof; and therefore all syllogisms are effected by the three figures and are ultimately reducible to the universal syllogisms of the first figure.

Ch. xxiv points out that in every syllogism (1) one premiss at least must be affirmative, and (2) one
premiss at least must be universal: i.e. the middle term must be distributed.

Ch. xxv lays down the materials necessary for drawing a syllogistic inference, viz. two premisses containing three terms. This doctrine is of course implicit from the beginning, but it is first clearly stated here. Ch. xxvi sums up the facilities for constructive and destructive proof.

The second section of Book I begins with an explanation, in chs. xxvii-xxx, of the method of finding premisses by selecting consequents and antecedents of the major and minor terms; and how the method is to be applied in the case of different propositions. Ch. xxxi criticizes the Platonic method of definition by dichotomy. Ch. xxxii shows how to reduce arguments to syllogistic form in the several figures.

In chs. xxxiii-xl iii we find a series of warnings against errors in selecting or enunciating terms and premisses. Ch. xliv shows how far hypothetical proofs admit of reduction, and ch. xlv treats of the resolution of one figure into another. Finally ch. xlvi explains the true form of contradictory statements.

Book II discusses various aspects and properties of the syllogism and similar methods of reasoning. The first chapter explains that more than one conclusion can be drawn from the same premisses, and the next three show how true conclusions can be drawn from false premisses. Chs. v-vii describe circular or reciprocal proof, chs. viii-x deal with the conversion of syllogisms, and chs. xi-xiii with reduction *ad impossibile* in the three figures. Ch. xiv compares the procedure of ostensive proof with that of reduction *ad impossibile*, and ch. xv considers the question of drawing
conclusions from contrary and contradictory premises. Chs. xvi and xvii are devoted to the fallacies of *petitio principii* and false cause, while in ch. xviii Aristotle points out that falsity in an argument depends upon the first false statement which it contains. Chs. xix and xx treat of the syllogism in argument and refutation. Ch. xxi shows the possibility of being mistaken in a particular judgement even when one has knowledge of the universal truths upon which that judgement, when properly conceived, depends. Ch. xxii deals with the convertibility of terms, and with the comparison of desirable and undesirable objects. The last five chapters treat of argument by induction, by example, by reduction, by objection, and by probabilities or "signs."

*Aristotle's view of the syllogism*

The formulation of a logical system which in spite of modifications—some of which are questionable improvements—remains the basis of all subsequent logic, was so great a feat that criticism seems almost ungenerous, especially when we consider that here as elsewhere we are compelled to judge Aristotle, as it were, at second hand. If he himself had edited the logical works for publication, he would doubtless have removed many of the imperfections and inconsistencies which can be observed in our text. There are, however, certain defects which call for notice.

A purely formal logic which is detached from reality is a worthless instrument indeed; and since Aristotle's logic is avowedly the instrument of the mind in search of truth, we do not look in it for any such detachment. But there is reason to suppose
that he expected more correspondence between the conclusion of a syllogism and objective reality than is compatible with the conception of the syllogism as a process of thought. At any rate in 34 b 14 ff. he apparently denies the validity of a syllogism because the conclusion which follows from a pair of premisses stating a narrowly restricted relation proves less than could be inferred from complete knowledge of the facts. The premisses are:

Everything which moves may (at a given time) be an animal.

All men may move.

The conclusion, says Aristotle, is apodeictic, not problematic, because man is necessarily an animal; and since an apodeictic conclusion cannot be drawn from problematic premisses, Aristotle decides that the syllogism is invalid. The same arbitrary objection occurs in lines 32-37. These are certainly extreme examples; they come in a passage which is so hastily expressed that it appears to be an afterthought designed to meet certain practical difficulties; and I have observed no exact parallel to them. But the general practice of rebutting the validity of a syllogism by selecting concrete examples (however natural and unobjectionable it may be in itself) suggests a tendency to look for objective truth in the conclusion. The careful discussion of the possibility of drawing a true conclusion from false premisses (An. Pr. II. ii-iv) may perhaps point in the same direction.

Elsewhere, too, Aristotle seems to emphasize the apodeictic function of the syllogism by regarding the conclusion as something distinct from the premisses rather than as potentially latent in them. The very
definition of syllogism in 24 b 18 stresses the former aspect; and throughout the early chapters of An. Pr. I, when he is establishing the valid moods of the three figures, he proceeds by taking different pairs of premisses and then considering what conclusion if any can be drawn from them. Of course this is quite legitimate, but it is one-sided; and it comes almost as a surprise when in ch. xiii ad fin. he reverses the process and analyses the conclusion into its premisses. Moreover, he is led to change his normal practice here by a special motive: the desire to show that a problematic conclusion can be drawn either from two problematic premisses or from one problematic and one assertoric premiss. Here again the section in question has the air of an afterthought; at least it is curious that the point was not raised before. It is a similar failure to regard the syllogism as a coherent whole that leads to the errors which I have noted on 34 b 2 and 7. It is only fair, however, to add that in An. Pr. II. xxi, especially 67 a 33-b 11, the true relation of conclusion to premisses is made quite explicit.

The Modal Analysis and its defects

The whole section (An. Pr. I. viii-xxii) on modal syllogisms shows signs of superficial treatment. It seems clear to me that Aristotle either found this part of his theory unsatisfactory and left it incomplete (we know from Alexander and various scholia that Theophrastus and Eudemus lost no time in modifying it); or that he merely sketched it in outline and gave the task of working it out in detail to his pupils. The latter hypothesis is attractive, since it would account better for the lack of proper syn-
thesis, but in default of linguistic or stylistic evidence it can only be entertained as a remote possibility.

In the first place Aristotle never makes clear what he means by the apodeictic, assertoric and problematic relations. It is practically certain that he considers the distinction to be grounded upon something objective, yet he uses the same terms "animal" and "man" in 25 a 25, 26 a 8, b 7, and 28 a 32 to illustrate an assertoric, and in 30 a 24, b 33, 31 b 41, 32 b 6 etc. to illustrate an apodeictic relation. One might suppose the analysis of premisses as apodeictic, assertoric and problematic to refer to the predication of the definitory genus or differentia, of the property, and of the accident; but the only evidence for this correspondence seems to be in 43 b 6 ff. The association of the accident with problematic predication might perhaps also be inferred from a comparison of Topics 102 b 6 with An. Pr. 32 b 10. But it is a serious defect that so important a point should receive no explicit treatment, and the omission in itself justifies us in supposing that the modal system was never brought to perfection.

The whole question of the problematic relation is very difficult, and we can hardly acquit Aristotle of entertaining inconsistent views about it. Three conceptions of the "possible" appear in the Analytics. (1) That which is not impossible. This of course excludes neither the actual nor the necessary (25 a 38). (2) That which is neither impossible nor necessary, i.e. that which is neither necessarily so nor necessarily not so. This still does not exclude the assertoric relation (cf. 34 a 36-38), though it is doubtless generally intended to do so. It is the "definition" to which Aristotle frequently refers (33 b 23, 30 etc.); and
which underlies the main development of the modal analysis. But we also find (24 b 14, 32 b 4) the possible described as (3) that which, as contrasted with the purely contingent, obtains generally but not necessarily, i.e. the probable. It has been supposed that this is merely a particular case of (2); that indeed it is the normal case of that type, since the purely contingent is outside the proper range of logical science. Aristotle's language (32 b 13-22) certainly suggests this at first sight. But on this view the "problematic conversion" which holds good of (2) is hard to justify. If "all A may be B" is possible qua probable, "no A may be B" is possible only qua improbable; the two judgements differ fundamentally in implication, and the substitution of one for the other cannot but affect the inference to be drawn. Indeed in the "earlier" passage (which is probably a later addition) Aristotle states definitely that a universal negative premiss of type (3) is not convertible, although a similar premiss of type (2) follows the general rule. Dr Gohlke thinks (pp. 73 ff.) that Aristotle was driven to restrict the sense of the problematic premiss so as to preclude conversion of the universal negative by the awkward results which would otherwise have followed in the second figure. This seems extremely probable. At least it seems obvious that the non-convertibility of such premisses ought to have been demonstrated in ch. iii, if the doctrine formed part of the original system.

An even greater mystery surrounds Aristotle's attitude towards the convertibility of the particular negative problematic premiss. The question is discussed at length by both Maier and Becker, but it can only be briefly considered here. The main point
is this: why is it that Aristotle, after expressly ad-
mitting its convertibility (25 b 13; Maier appears to
overlook this statement—at least I cannot find that
he refers to it), apparently never avails himself of it?  
Becker (pp. 60-63) shows that while in certain of
Maier's examples there is a definite reason for not
employing this form of conversion, in others no such
reason can be quoted, so that the failure to employ it
appears to be a genuine oversight. Gohlke dismisses
the difficulty by supposing 25 b 13 to be a late addi-
tion. I cannot quite follow his theory of the de-
velopment of Aristotle's idea of possibility.
In point of fact the problematic premiss of type
(2) will not fit consistently into Aristotle's system.
One of its most awkward features is that it has no
single contradictory, and so resists the process of
proof per impossibile; and so in ch. xv we find that it
gives place to type (1). It is moreover almost value-
less for purposes of argument. Why then did
Aristotle adopt it as the normal type? Presumably
because he felt that to call anything "possible"
which was in reality necessary was an intolerable
looseness of terminology. At the same time a desire
for symmetrical tripartition induced him to frame a
system in which apodeictic and problematic should
show a perfectly antithetical correspondence about
the assertoric mean. The attempt was bound to
fail, because objectively there is no mean between
the necessary and the not-necessary; the two con-
ceptions together are exhaustive.
It follows that any satisfactory threefold system
must depend upon a subjective distinction of modal-
ity. A judgement is apodeictic if it rests on de-
monstrable grounds, assertoric if the fact is appre-
hended but the grounds are unknown, and problematic if the fact is regarded as capable of realization. But even so the dividing line between the first two is hard to draw; and the universal problematic judgement is more naturally expressed as a particular assertoric. When we say "all men may be white," we presumably mean "some men are white, some are not-white; but we know no reason why the not-white men should necessarily exist."

Thus the modal analysis, which depends for its value upon genuine distinctions, becomes practically useless. It was continued, with modifications, by Aristotle's immediate successors, but being little more than a formal exercise it fell more and more into neglect.

III. Manuscripts and Other Sources

The chief manuscripts for this part of the Organon are the following:

A Urbinas 35 saec. ix-x ineunt.
B Marcianus 201 an. 955
C Coislinianus 333 saec. xi
D Laurentianus 72.5 ,, x ?
N Ambrosianus L. 93 saec. x-xi
F Marcianus App. IV. 5 an. 1320
U Basileensis F. 11.21 saec. xi-xii
M Ambrosianus Q. 87 saec. xv
A Angelicus C. 3.13 ?
c Vaticanus 1024 "satis uetustus"
i Laurentianus 72.15 saec. xiv

Of these the first two are by far the best. Bekker preferred A; Waitz showed that B is generally more
accurate, and this view is now generally accepted. C is considerably inferior to either, but it sometimes preserves the true reading. Of the others only d and n have much independent value; the rest are sometimes of use to decide a doubtful point. Light is also thrown on the text by the commentaries of Alexander, Philoponus, Themistius and Pacius, and the Latin versions of Boethius and the uetus interpres Latinus.

The present translation aims at preserving something of the effect of the original without too great a sacrifice of English idiom. I have tried to escape the anachronism of interpreting Aristotle's meaning too much in the terms of contemporary logic, of which indeed I do not profess to have an exhaustive knowledge; I have therefore avoided technicalities except such as are sanctioned by tradition, and have attempted to examine the arguments, where comment seemed necessary, in the light of what I conceive to be common sense.

Apart from the ancient commentators, the most helpful authorities which I have used are Waitz's admirable edition of the Organon and Maier's treatise (see Bibliography). I have often consulted the Oxford Translation; and the new French version by M. Tricot appeared just in time for me to refer to it on certain points. I am especially obliged to Dr. A Becker for sending me his most instructive monograph on the modal syllogisms; to my friend and former colleague Dr. B. M. Laing for discussing various points with me; and to Professor T. M. Knox of St. Andrews University for much excellent advice and criticism.

I much regret that sheer lack of time has prevented me from doing greater justice to a subject which has
PRIOR ANALYTICS

received little systematic treatment in this country for many years. It became apparent, however, that the appearance of this volume, already long overdue, would be indefinitely delayed if I attempted to examine all the points which interested me, and I felt that I could not tax the patience of the editors by keeping it back any longer. I hope that even in its present form it calls attention to some points which have not been noticed before.
SELECT BIBLIOGRAPHY

I append a short list of the principal editions, translations and works of reference which are likely to be most useful to the student of the Analytics.

Editions

Since the publication of Bekker's text (Berlin 1831, Oxford 1837) there has been only one critical edition of the Organon, that of T. Waitz (Leipzig 1844–1846).

Translations


Criticism and Interpretation

THE TRADITIONAL MOOD-NAMES

For the benefit of those who are forgetful or who are not familiar with the mnemonic mood-names for the various syllogisms, I give a list of them with a brief explanation:

Fig. 1 (direct) Barbara, Celarent, Darii, Ferio.
(indirect) Baralipton, Celantes, Dabitis, Fapesmo, Frisesomorum.
Fig. 2 Cesare, Camestres, Festino, Baroco.
Fig. 3 Darapti, Felapton, Disamis, Datisi, BocardO, Ferison.
Fig. 4 Bramantip, Camenes, Dimaris, Fesapo, Fresison.

The first three vowels of each word show the quality and quantity of the premises and conclusion, A standing for the universal and I for the particular affirmative, E for the universal and O for the particular negative. The consonants indicate the rules for reduction. The initial letters correspond in every case to those of the mood-names of the direct syllogisms of the first figure. The letters which immediately follow the significant vowels give the necessary procedure.

m (muta) means that the premises must be transposed.

s (simpliciter) means that the premiss denoted by the preceding vowel must be converted simply.

p (per accidens) means that the premiss must be converted by limitation.

c (conversio) means that for the premiss the contradictory of the conclusion must be substituted.
ΑΝΑΛΥΤΙΚΩΝ ΠΡΟΤΕΡΩΝ

A

24 a 10 I. Πρωτον εἶπεῖν περὶ τι καὶ τίνος ἐστὶν ἡ σκέψις, ὅτι περὶ ἀπόδειξιν καὶ ἐπιστήμης ἀποδεικτικῆς· εἶτα διορίσαι τί ἐστιν πρότασις καὶ τί ὅρος καὶ τί συλλογισμός, καὶ ποίος τέλειος καὶ ποίος ἀτελής, μετὰ δὲ ταῦτα τί τὸ ἐν ὕλῳ εἶναι ἢ μὴ εἶναι τόδε τῷδε, καὶ τί λέγομεν τὸ κατὰ παντὸς ἢ μηδενὸς κατηγορεῖσθαι.

Πρότασις μὲν οὖν ἐστὶ λόγος καταφατικὸς ἢ ἀποφατικὸς τινὸς κατὰ τινὸς· οὕτως δὲ ἡ καθόλου ἢ ἐν μέρει ἡ ἀδιόριστος. λέγω δὲ καθόλου μὲν τὸ παντὶ ἢ μηδενὶ ὑπάρχειν, ἐν μέρει δὲ τὸ τινὶ ἢ μὴ τινὶ ἢ μὴ ὑπάρχειν, ἀδιόριστον δὲ τὸ ὑπάρχειν ἢ μὴ ὑπάρχειν ἄνευ τοῦ καθόλου ἢ κατὰ μέρος, οἷον τὸ τῶν ἐναντίων εἶναι τὴν αὐτὴν ἐπιστήμην ἢ τὸ τῆς ἡδονῆς μὴ εἶναι ἀγαθὸν.

Διαφέρει δὲ ἡ ἀποδεικτικὴ πρότασις τῆς διαλεκτικῆς, ὅτι ἡ μὲν ἀποδεικτικὴ λήψις θατέρου μορίου τῆς ἀντιφάσεως ἐστὶν (οὐ γὰρ ἔρωτά ἄλλα
I. Our first duty is to state the scope of our inquiry, and to what science it pertains: that it is concerned with demonstration, and pertains to a demonstrative science. Next we must define the meaning of 'premiss' and 'term' and 'syllogism,' and distinguish between a perfect and an imperfect syllogism; and after this we must explain in what sense one term is said to be or not to be 'wholly contained' in another; and what we mean by 'predicated of all' or 'of none.'

A premiss is an affirmative or negative statement of something about some subject. This statement may be universal or particular or indefinite. By universal I mean a statement which applies to all, or to none, of the subject; by particular, a statement which applies to some of the subject, or does not apply to some, or does not apply to all; by indefinite, a statement which applies or does not apply without reference to universality or particularity, e.g., 'contraries are studied by the same science' or 'pleasure is not good.'

The premiss of demonstration differs from the premiss of dialectic in that the former is the assumption of one member of a pair of contradictory statements (since the demonstrator does not ask a question...
ARISTOTLE

24 a

λαμβάνει ὁ ἀποδεικνύων), ἢ δὲ διαλεκτικὴ ἐρώτησις ἀντιφάσεως ἑστιν. οὐδὲν δὲ διοίσει πρὸς τὸ γενέσθαι τὸν ἐκατέρων συλλογισμὸν καὶ γὰρ ὁ ἀποδεικνύων καὶ ὁ ἐρωτῶν συλλογίζεται λαβών τι κατὰ τινὸς ὑπάρχειν ἢ μὴ ὑπάρχειν. ὡστε ἔσται συλλογιστικὴ μὲν πρότασις ἀπλῶς κατάφασις ἢ ἀπόφασις τινὸς κατὰ τινὸς τὸν εἰρημένον τρόπον, ἀποδεικτικὴ δὲ ἐὰν ἀληθῆς ἢ καὶ διὰ τῶν ἐξ ἀρχῆς ὑποθέσεων εἰλημμένη, διαλεκτικὴ δὲ πυθανομένῳ μὲν ἐρώτησις ἀντιφάσεως, συλλογιζομένῳ δὲ λήμμας τοῦ φαινομένου καὶ ἐνδόξου, καθάπερ ἐν τοῖς Τοπικοῖς εἰρηται.

Τί μὲν οὖν ἐστὶ πρότασις, καὶ τί διαφέρει συλλογιστικὴ καὶ ἀποδεικτικὴ καὶ διαλεκτικὴ, διὰ ἀκριβείας μὲν ἐν τοῖς ἑπομένοις ἡμῖν διωρίσθω τὰ νῦν.

"Ορον δὲ καλῶ εἰς ὃν διαλύεται ἡ πρότασις, οἷον τὸ τε κατηγοροῦμενον καὶ τὸ καθ᾽ οὗ κατηγορεῖται, ἢ προστιθεμένου ἢ διαιρουμένου τοῦ εἶναι καὶ μὴ εἶναι.

Συλλογισμὸς δὲ ἐστὶ λόγος ἐν ᾧ τεθέντων τινῶν ἕτερόν τι τῶν κειμένων ἐξ ἀνάγκης συμβαίνει τῷ ταύτα εἶναι. λέγω δὲ τῷ ταύτα εἶναι τὸ διὰ ταύτα

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a i.e. that which is either self-evident or accepted as true for the immediate inquiry. Cf. An. Post. i. ix.: Topica, 100 a 27.
b A dialectical premiss may be either the alternative chosen by an actual opponent in answer to a question of the form ‘Is X Y or not Y?’ or the assumption of one alternative by a person reasoning independently.

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but makes an assumption), whereas the latter is an answer to the question which of two contradictory statements is to be accepted. This difference, however, will not affect the fact that in either case a syllogism results; for both the demonstrator and the interrogator draw a syllogistic conclusion by first assuming that some predicate applies or does not apply to some subject. Thus a syllogistic premiss will be simply the affirmation or negation of some predicate of some subject, in the way already described; the premiss will be demonstrative if it is true and based upon fundamental postulates; while the dialectical premiss will be, for the interrogator, an answer to the question which of two contradictory statements is to be accepted, and for the logical reasoner, an assumption of what is apparently true and generally accepted,—as has been stated in the Topics.

What is meant by a premiss, and what difference there is between syllogistic, demonstrative and dialectical premisses, will be explained with exactness later; but for our immediate requirements the present definition may be taken as sufficient.

By a term I mean that into which the premiss can be analysed, viz., the predicate and the subject, with the addition or removal of the verb to be or not to be.

A syllogism is a form of words in which, when certain assumptions are made, something other than what has been assumed necessarily follows from the fact that the assumptions are such. By 'from the fact that they are such' I mean that it is because

\[ 104a 8; \text{ cf. also } 100a 29. \]

\[ \text{ Demonstrative in } An. \text{ Post. I. vi.-ix.; dialectical in } Topics. \]
συμβαίνειν, τὸ δὲ διὰ ταῦτα συμβαίνειν τὸ μηδενὸς ἕξωθεν ὅρου προσδεῖν πρὸς τὸ γενέσθαι τὸ ἀναγκαῖον.

Τέλειον μὲν οὖν καλὸν συλλογισμὸν τὸν μηδενὸς ἀλλον προσδεόμενον παρὰ τὰ εἰλημμένα πρὸς τὸ 25 φανῆναι τὸ ἀναγκαῖον, ἀτελῆ δὲ τὸν προσδεόμενον ἢ ἕνος ἢ πλειόνων, ἡ ἐστὶ μὲν ἀναγκαῖα διὰ τῶν ύποκειμένων ὅρων, οὐ μὴν εὐληπται διὰ προτάσεων.

Τὸ δὲ ἐν ὅλῳ εἶναι ἑτέρω καὶ τὸ κατὰ παντὸς κατηγορεῖσθαι θατέρου θάτερον ταύτον ἐστὶν. λέγομεν δὲ τὸ κατὰ παντὸς κατηγορεῖσθαι 30 ὅταν μηδὲν ἢ λαβεῖν τῶν τοῦ ύποκειμένου καθ᾽ οὐθάτερον οὐ λεχθῆσεται· καὶ τὸ κατὰ μηδενὸς ὁσαύτως.

25 a II. Ἐπεὶ δὲ πᾶσα πρότασις ἐστὶν ἢ τοῦ ύπάρχειν ἢ τοῦ ἐξ ἀνάγκης ύπάρχειν ἢ τοῦ ἐνδέχεσθαι ύπάρχειν, τοῦτων δὲ αἱ καταφατικαὶ αἱ δὲ ἀποφατικαὶ καθ᾽ ἐκάστην πρόσρησιν, πάλιν δὲ τῶν 5 καταφατικῶν καὶ ἀποφατικῶν αἱ μὲν καθόλου αἱ δὲ ἐν μέρει αἱ δὲ ἀδιόριστοι, τὴν μὲν ἐν τῷ ύπάρχειν καθόλου στερητικῆν ἀνάγκη τοῖς ὅροις ἀντιστρέφειν, οἷον εἰ μηδεμία ἡδονή ἀγαθόν, οὐδ᾽ ἀγαθόν οὐδὲν ἐσται ἡδονή· τὴν δὲ κατηγορικῆν ἀντιστρέφειν μὲν ἀναγκαῖον, οὐ μὴν καθόλου ἀλλ᾽ ἐν μέρει, οἷον εἰ πᾶσα ἡδονή ἀγαθόν, καὶ ἀγαθόν 10 τὶ εἶναι ἡδονήν· τῶν δὲ ἐν μέρει τὴν μὲν καταφατικῆν ἀντιστρέφειν ἀνάγκη κατὰ μέρος (εἰ γὰρ ἡδονή της ἀγαθόν, καὶ ἀγαθόν τι ἐσται ἡδονή), τὴν 202
of them that the conclusion follows; and by this I mean that there is no need of any further term to render the conclusion necessary.

I call a syllogism perfect if it requires nothing, apart from what is comprised in it, to make the necessary conclusion apparent; imperfect if it requires one or more propositions which, although they necessarily follow from the terms which have been laid down, are not comprised in the premisses.

For one term to be wholly contained in another is the same as for the latter to be predicated of all of the former. We say that one term is predicated of all of another when no examples of the subject can be found of which the other term cannot be asserted. In the same way we say that one term is predicated of none of another.

II. Now every premiss is of the form that some attribute applies, or necessarily applies, or may possibly apply, to some subject. These three types are divided into affirmative and negative in accordance with each mode of attribution; and again of affirmative and negative premisses some are universal, others particular and others indefinite. In universal statement the negative premiss is necessarily convertible in its terms: *e.g.*, if no pleasure is good, neither will anything good be pleasure; but the affirmative, though necessarily convertible, is so not as a universal but as a particular statement: *e.g.*, if every pleasure is good, some good must also be pleasure. In particular statements the affirmative premiss must be convertible as particular, for if some pleasure is good, some good will also be pleasure; but the

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This modal analysis is rejected by many modern logicians. *Cf.* Introd. pp. 189-193.
ARISTOTLE

25 a
de στερητικὴν οὐκ ἀναγκαῖον· οὐ γὰρ εἰ ἀνθρωπος μὴ ὑπάρχει τινὶ ζῷῳ, καὶ ζῷον οὐχ ὑπάρχει τινὶ ἀνθρώπων.

Πρῶτον μὲν οὖν ἐστὶν στερητικὴ καθόλου ἡ

15 AB πρότασις. εἰ οὖν μηδενὶ τῶν B τὸ A ὑπάρχει, οὐδὲ τῶν A οὐδενὶ ὑπάρξει τὸ B. εἰ γὰρ τινὶ, οἷον τῷ Γ, οὖν ἀληθὲς ἐσται τὸ μηδενὶ τῶν B τὸ A ὑπάρχειν· τὸ γὰρ Γ τῶν B τί ἐστιν. εἰ δὲ παντὶ τὸ A τῷ B, καὶ τὸ B τινὶ τῷ A ὑπάρχει. εἰ γὰρ μηδενὶ, οὐδὲ τὸ A οὐδενὶ τῷ B ὑπάρξει· ἀλλ' ὑπέκειτο παντὶ ὑπάρχειν. ὃμοιως δὲ καὶ εἰ κατὰ μέρος ἐστὶν ἡ πρότασις. εἰ γὰρ τὸ A τινὶ τῶν B, καὶ τὸ B τινὶ τῶν A ἀνάγκη ὑπάρχειν· εἰ γὰρ μηδενὶ, οὐδὲ τὸ A οὐδενὶ τῶν B. εἰ δὲ γε τὸ A τινὶ τῶν B μὴ ὑπάρχει, οὐκ ἀνάγκη καὶ τὸ B τινὶ τῷ A μὴ ὑπάρχειν, οἷον εἰ τὸ μὲν B ἐστὶ ζῷον τὸ δὲ A ἀνθρωπος· ἀνθρωπος μὲν γὰρ οὐ παντὶ ζῴῳ, ζῷον δὲ παντὶ ἀνθρώπῳ ὑπάρχει.

III. Τὸν αὐτὸν δὲ τρόπον ἐξει καὶ ἐπὶ τῶν ἀναγκαίων προτάσεων· ἴδε μὲν γὰρ καθόλου στερητικὴ καθόλου ἀντιστρέφει, τῶν δὲ καταφατικῶν κατὰ μέρος. εἰ μὲν γὰρ ἀνάγκη τὸ A τῷ B μηδενὶ ὑπάρχειν, ἀνάγκη καὶ τὸ B τῷ A μηδενὶ ὑπάρχειν· εἰ γὰρ τινὶ ἐνδέχεσθαι, καὶ τὸ A τῷ B τινὶ ἐνδέχοιτο ἄν. εἰ δὲ εὖς ἀνάγκης τὸ A παντὶ ἦ τινι τῷ B ὑπάρχει, καὶ τὸ B τινὶ τῷ A ἀνάγκη ὑπάρχειν· εἰ γὰρ μὴ ἀνάγκη, οὐδὲ ἄν τὸ A τινὶ τῶν B εὖς ἀνάγκης ὑπάρχοι. τὸ δὲ ἐν μέρει στερητικῶν οὐκ ἀντιστρέφει διὰ τὴν αὐτὴν αἰτίαν δι᾽ ἣν καὶ προτερον ἔφαμεν.

1 τῷ C1, Bekker.
2 τῶν B ὑπάρξει codd. dett.

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negative is not necessarily convertible; for it does not follow that if 'man' does not apply to some animal, neither will 'animal' apply to some man.

First, then, let us take a negative universal premiss having the terms A and B. Then if A applies to no B, neither will B apply to any A; for if it applies to some, e.g. C, it will not be true that A applies to no B, because C is a B. If on the other hand A applies to all B, B also applies to some A; for if it applies to none, neither will A apply to any B; but ex hypothesi it applies to all B. Similarly too if the premiss is particular. For if A applies to some B, B must also apply to some A; since if it applies to none, neither will A apply to any B. But if A does not apply to some B, it does not necessarily follow that B does not apply to some A; e.g., if B is 'animal' and A 'man'; for 'man' does not apply to every animal, but 'animal' applies to every man.

III. The same principle will also obtain in the case of apodeictic premisses. The universal negative converts universally, whereas each of the affirmatives converts as a particular premiss. For if A necessarily applies to no B, B also necessarily applies to no A; for if it may apply to some, A might also apply to some B. But if A necessarily applies to all or some of B, B must also apply to some A; for if this is not necessarily so, neither will A necessarily apply to some B. The particular negative statement is not convertible, for the same reason which we have already stated.

* Sc. of the assertoric type.

It must be noted that in the Aristotelian formula the predicate regularly comes before the subject. The modern equivalent is 'No B is A.'

Ch. ii. *ad fin.*
ARISTOTLE

25 a Ἐπὶ δὲ τῶν ἐνδεχομένων, ἐπειδὴ πολλαχῶς λέγεται τὸ ἐνδέχεσθαι (καὶ γαρ τὸ ἀναγκαῖον καὶ τὸ μὴ ἀναγκαῖον καὶ τὸ δυνατὸν ἐνδέχεσθαι λέγομεν), ἐν μὲν τοῖς καταφατικοῖς ὁμοίως ἐξει κατὰ τὴν ἀντιστροφὴν ἐν ἀπασον· εἰ γαρ τὸ Α

25 b παντὶ ἠ τινὶ τῶ Β ἐνδέχεται, καὶ τὸ Β τινὶ τῶ Λ ἐνδέχοντο ἄν (εἰ γαρ μηδενὶ, οὐδέ ἄν τὸ Λ οὔδεν τῶ Β· δεδεικται γαρ τοῦτο πρότερον). ἐν δὲ τοῖς ἀποφατικοῖς οὐχ ὡσαύτως, ἀλλ` ὥσα μὲν ἐνδεχε- σθαι λέγεται ἠ τῳ ἐξ ἀνάγκης ὑπάρχειν ἢ τῳ μη ἐξ ἀνάγκης ὑπάρχειν, ὁμοίως οἷον εἰ τις φαίη τὸν ἀνθρωπὸν ἐνδέχεσθαι μὴ εἰσαί ἢ πον η τὸ λευκὸν μηδενὶ ἶματι παρχειν· τούτων γαρ τὸ μὲν ἐξ ἀνάγκης οὐχ ὑπάρχει, τὸ δὲ ὅχ ἀνάγκης ὑπάρχει, καὶ ὁμοίως ἀντιστρέφει ἢ πρότασις· εἰ γαρ ἐν-

10 δέχεται μηδενὶ ἀνθρώπω ἢ πον· καὶ ἀνθρώπῳ ἐγχωρεῖ μηδενὶ ἢ πον· καὶ εἰ τὸ λευκὸν ἐγχωρεῖ μηδενὶ ἶματι· καὶ τὸ ἰματιον ἐγχωρεῖ μηδενὶ λευκῳ· εἰ γαρ τᾳ ἀνάγκη, καὶ τὸ λευκόν ἰματιον τᾳ ἐσται ἐξ ἀνάγκης· τοῦτο γαρ δεδεικται πρό- τερον· ὁμοίως δὲ καὶ ἐπὶ τῆς ἐν μέρει ἀποφατικης· ὅσα δὲ τῳ ὃς ἐπὶ πολυ καὶ τῳ πεφυκέναι λέγεται ἐνδέχεσθαι, καθ' ὃν τρόπον διορίζομεν τὸ ἐνδεχο- μενον, οὐχ ὁμοίως ἐξει ἐν ταῖς στερητικαῖς ἀντι- στροφαῖς, ἀλλ' ἦ μὲν καθόλου στερητικῆς πρότασις

1 ὑπάρχειν ΑΒ (μὴ supra lineam praefixo) Phil., Waitz: μὴ ὑπάρχειν recce.

* This is obviously a loose application of the term, and one which Aristotle does not always admit: cf. 32 a 18-21 and De Interp. 22 a 16. For a discussion of his treatment of problematic syllogism see Introd. pp. 190-192.
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With regard to possible premisses, since the term 'possible' is used in several senses (for we call possible both that which is necessary and that which is not necessary and that which is capable of being), in all affirmative statements conversion will take place under the same conditions as before. For if A may apply to all or some of B, B might also apply to some A; for if it could apply to none, neither could A apply to any B. This has been proved above. But in negative statements the case is not the same. In all examples which are said to be possible in the sense that the statement is necessarily true, or is not necessarily true, the conditions are similar to those already stated; e.g., if it were said to be possible that a man should not be a horse, or that 'white' should apply to no coat. For in the former example the predicate necessarily does not apply to the subject, and in the latter it does not necessarily apply; and the premiss converts like other negatives. For if it is possible for 'horse' to apply to no man, it is also possible for 'man' to apply to no horse; and if it is possible for 'white' to apply to no coat, it is also possible for 'coat' to apply to nothing white. For if it must apply to something that is white, 'white' will also necessarily apply to some coat; this has been proved above. Similar conditions govern the conversion of particular negative premisses.

But in such premisses as are said to be possible in the sense that they are generally or naturally true (for we define the possible in this way), the conditions for the conversion of negatives will not be the same as before. The universal negative premiss does not
οὐκ ἀντιστρέφει, ἢ δὲ ἐν μέρει ἀντιστρέφει. τοῦτο
dὲ ἐσται φανερὸν ὅταν περὶ τοῦ ἐνδεχομένου
λέγωμεν.
Νῦν δὲ τοσούτον ἦμιν ἐστιν πρὸς τοῖς εἰρημένοις
dήλων, ὅτι τὸ ἐνδεχεσθαι μηδενὶ ἦ τινι, μη ὑπάρχειν
catataphatikon ἐχει τὸ σχῆμα· τὸ γὰρ ἐνδέχεται τῷ
ἐστιν ὁμοίως τάττεται, τὸ δὲ ἐστὶν, οἷς ἂν προο-
catηγορήται, κατάφασιν ἂεί ποιεῖ καὶ πάντως,
oiων τὸ ἐστιν οὐκ ἀγαθὸν ἢ ἐστιν οὐ λευκὸν ἢ
ἀπλῶς τὸ ἐστιν οὐ τούτο. δειχθησεται δὲ καὶ τοῦτο
dia τῶν ἐπομένων. κατὰ δὲ τὰς ἀντιστροφὰς
ὁμοίως ἐξουσι ταῖς ἀλλαίς.
IV. Διωρισμένων δὲ τούτων λέγομεν ἢδη διὰ
tῶν καὶ πότε καὶ πῶς γίγνεται πᾶς συλλο-
gυσμός· ύστερον δὲ λεκτέον δὲ πρότερον δὲ περὶ
συλλογισμοῦ λεκτέον ἢ περὶ
ἀποδείξεως διὰ τὸ καθὸλου μᾶλλον εἶναι τὸν
συλλογισμόν· ἢ μὲν γὰρ ἀπόδειξις συλλογισμὸς τις,
ὁ συλλογισμὸς δὲ οὐ πᾶς ἀπόδειξις.
"Ωταν οὖν ὁροὶ τρεῖς οὔτως ἔχωσι πρὸς ἀλλήλους
وحدة τὸν ἐσχατὸν ἐν ὅλω εἶναι τῷ μέσῳ καὶ τὸν
μέσον ἐν ὅλω τῷ πρῶτῳ ἢ εἶναι ἢ μή εἶναι,
ἀνάγκη τῶν ἀκρών εἶναι συλλογισμὸν τελειων.
καλῶ δὲ μέσον μὲν ὁ καὶ αὐτὸ ἐν ἀλλῷ καὶ
ἀλλὸ ἐν τούτῳ ἐστὶν, ὁ καὶ τῇ θέσει γίγνεται μέσον
άκρα δὲ τὸ αὐτὸ τε ἐν ἀλλῷ οὐ καὶ ἐν ὃ ἄλλο
ἐστίν. εἰ γὰρ τὸ A κατὰ παντὸς τοῦ Β καὶ τὸ
Β κατὰ παντὸς τοῦ Γ, ἀνάγκη τὸ A κατὰ παντὸς
tοῦ Γ κατηγορεῖσθαι· πρότερον γὰρ εἴρηται πῶς

* Chs. xiii. ff.  
* Ch. xlvi.  
* In the Posterior Analytics.  
* 24 b 28.
convert, whereas the particular negative does. This will become clear when we discuss the possible.

For the present we may regard this much as clear, in addition to what we have already said: that the statement 'it is possible for A to apply to no B' or 'not to apply to some B' is affirmative in form; for the expression 'is possible' corresponds to 'is,' and the word 'is,' to whatever terms it is attached in predication, has always and without exception the effect of affirmation: e.g., 'is not good' or 'is not white' or in general 'is not X.' This also will be proved later. In respect of conversion these premises will be governed by the same conditions as other affirmatives.

IV. Having drawn these distinctions we can now state by what means, and when, and how every syllogism is effected. Afterwards we must deal with demonstration. The reason why we must deal with the syllogism before we deal with demonstration is that the syllogism is more universal; for demonstration is a kind of syllogism, but not every syllogism is a demonstration.

When three terms are so related to one another that the last is wholly contained in the middle and the middle is wholly contained in or excluded from the first, the extremes must admit of perfect syllogism. By 'middle term' I mean that which both is contained in another and contains another in itself, and which is the middle by its position also; and by 'extremes' (a) that which is contained in another, and (b) that in which another is contained. For if A is predicated of all B, and B of all C, A must necessarily be predicated of all C. We have already explained what we mean by saying that one term
κατὰ παντὸς λέγομεν. ὃμοιώς δὲ καὶ εἰ τὸ μὲν Α κατὰ μηδενὸς τοῦ B τὸ δὲ B κατὰ παντὸς τοῦ Γ, ὅτι τὸ A οὐδένι τῷ Γ ὑπάρξει.

Εἰ δὲ τὸ μὲν πρῶτον παντὶ τῷ μέσῳ ὑπάρχει, τὸ δὲ μέσον μηδενὶ τῷ ἐσχάτῳ ὑπάρχει, οὐκ ἔσται συλλογισμὸς τῶν ἄκρων· οὐδέν γὰρ ἀναγκαῖον δυναῖν ταῦτα εἶναι· καὶ γὰρ παντὶ καὶ μηδενὶ ἐνδέχεται τὸ πρῶτον τῷ ἐσχάτῳ ὑπάρχειν, ὥστε οὔτε τὸ κατὰ μέρος οὔτε τὸ καθόλου γέγονεν ἀναγκαῖον· μηδενὸς δὲ ὅπως ἀναγκαῖον διὰ τούτων οὐκ ἔσται συλλογισμός. ὅροι τοῦ παντὶ ὑπάρχειν ζῷον—ἀνθρώπως—ίππος, τοῦ μηδενὶ ζῷον—ἀνθρώπως—λίθος.

Οὐδ᾽ ὅταν μήτε τὸ πρῶτον τῷ μέσῳ μήτε τὸ μέσον τῷ ἐσχάτῳ μηδενὶ ὑπάρχει· οὐδ' οὔτως ἔσται συλλογισμός. ὅροι τοῦ ὑπάρχειν ἐπιστήμη—γραμμή—ἰατρική, τοῦ μη ὑπάρχειν ἐπιστήμη—γραμμή—μονάς.

Καθόλου μὲν οὖν οὔτως τῶν ὄρων δῆλον ἐν τούτῳ τῷ σχήματι πότε ἔσται καὶ πότε οὐκ ἔσται συλλογισμός, καὶ ότι οὔτος τε συναγωγῖα τοὺς ὅρους ἀναγκαῖον ἔχειν ἡς εἶπομεν, ἂν θ' οὔτως ἔχουσιν, ὅτι ἔσται συλλογισμός.

Εἰ δ' ὁ μὲν καθόλου τῶν ὄρων ο ὁ δ' ἐν μέρει πρὸς τὸν ἐπεροῦν, ὅταν μὲν τὸ καθόλου τεθῇ πρὸς τὸ μεῖζον ἀκρον ἡ κατηγορικὸν ἡ στερητικῶν, τὸ δὲ ἐν μέρει πρὸς τὸ ἔλαττον κατηγορικῶν, ἀνάγκη συναγωγικῶν εἶναι τέλειον, ὅταν δὲ πρὸς τὸ ἔλαττον ἡ καὶ ἄλλως πως ἔχουσιν οἱ ὄροι,
is predicated of all of another. Similarly too if A is predicated of none of B, and B of all of C, it follows that A will apply to no C.

If, however, the first term applies to all the middle, and the middle to none of the last, the extremes cannot admit of syllogism; for no conclusion follows necessarily from the fact that they are such, since it is possible for the first term to apply either to all or to none of the last, and so neither a particular nor a universal conclusion necessarily follows; and if no necessary conclusion follows from the premisses there can be no syllogism. The positive relation of the extremes may be illustrated by the terms animal—man—horse; the negative relation by animal—man—stone.

Again, when the first applies to none of the middle, and the middle to none of the last, here too there can be no syllogism. The positive relation of the extremes may be illustrated by the terms science—line—medicine; the negative relation by science—line—unit.

Thus if the terms are in a universal relation it is clear, so far as this figure is concerned, when there will be a syllogism and when there will not. It is clear also that if there is a syllogism the terms must be related as we have said; and that if they are so related, there will be a syllogism.

If, however, one of the terms is in a universal and the other in a particular relation to the remaining term, when the universal statement, whether affirmative or negative, refers to the major term, and the particular statement is affirmative and refers to the minor term, there must be a perfect syllogism; but when the universal statement refers to the minor term, or the terms are related in any
ἀδύνατον. λέγω δὲ μείζον μὲν ἁκρον ἐν ὑπὸ τοῦ μέσου ἐστὶν, ἐλαττον δὲ τὸ ὑπὸ τὸ μέσον ὀν. ὑπαρχέτω γὰρ τὸ μὲν Α παντὶ τῷ Β, τὸ δὲ Β τῷ Γ. οὐκοῦν εἰ ἔστι παντὸς κατηγορεῖσθαι τὸ ἐν ἀρχῇ λεχθέν, ἀνάγκη τὸ Α τῷ Γ ὑπάρχειν. καὶ εἰ τὸ μὲν Α μηδενὶ τῷ Β ὑπάρχει τὸ δὲ Β τῷ Γ, ανάγκη τὸ Α τῷ Γ μη ὑπάρχειν ὁρισται γὰρ καὶ τὸ κατὰ μηδενὸς πῶς λέγομεν· ἦστε ἐσται συλλογισμὸς τελειος. ὁμοιως δὲ καὶ εἰ ἀδιαοριστῶν εἰη τὸ ΒΓ κατηγορικὸν ὁν· ὁ γὰρ αὐτὸς ἐσται συλλογισμὸς ἀδιαοριστὸν τε καὶ ἐν μέρει ληφθέντος.

Εάν δὲ πρὸς τὸ ἐλαττον ἁκρον τὸ καθὸλου τεθη̊ῃ κατηγορικὸν ὁ στερητικὸν, οὐκ ἐσται συλλογισμός, οὔτε καταφατικόν, οὔτε ἀποφατικόν του ἀδιαοριστου ἂν κατὰ μέρος ὄντος, οὐ χει τὸ μὲν Α τω τῷ Β ὑπάρχει ἡ μη ὑπάρχει, τὸ δὲ Β παντὶ τῷ Γ ὑπάρχει· ὁροι τοιυ ὑπάρχειν ἄγαθον—ἐξισ—φρόνησις, τοι μη ὑπάρχειν ἄγαθον—ἐξισ—ἀμαθία.

Πάλιν εἰ τὸ μὲν Β μηδενὶ τῷ Γ, τὸ δὲ Α τῳ τῷ Β ὑπάρχει ἡ μη ὑπάρχει ἡ μη παντι ὑπάρχει, οὐδ' οὕτως ἐσται συλλογισμός. ὁροι λευκῶν—ιππος—κύκνος, λευκῶν—ιππος—κόραξ. οι αὐτοι δε καὶ εἰ τὸ ΑΒ ἀδιαοριστων.

Οὐδ' ὅταν τὸ μὲν πρὸς τῷ μείζον ἁκρον καθὸλου γένηται ἡ κατηγορικὸν ἡ στερητικὸν, τὸ δὲ πρὸς τῷ ἐλαττονι στερητικὸν κατὰ μέρος, οὐκ ἐσται συλλογισμός, τοῦ εἰν φρόνησις, τοῦ μὴ ὑπάρχειν.

1 του f, Waitz: οὔτε.

a Aristotle’s wording is a little unfortunate. He does not, of course, mean that the relation of the major to the middle or of the middle to the minor term is always that of genus to
other way, this is impossible. (By the major term I mean that in which the middle is contained, and by the minor that which falls under the middle term.) For let A apply to all B, and B to some C. Then if 'to be predicated of all' means what we stated at the beginning, A must apply to some C. And if A applies to no B, but B applies to some C, A must necessarily not apply to some C (we have also defined what we mean by 'to be predicated of none'). Thus we shall have a perfect syllogism. Similarly too supposing the proposition BC to be indefinite, provided that it is affirmative; for we shall have the same syllogism whether BC is indefinite or particular.

If, however, the universal statement, whether affirmative or negative, refers to the minor term, there will be no syllogism, whether the indefinite (or particular) statement is affirmative or negative; e.g., if A applies or does not apply to some B, and B applies to all C. The positive relation of the extremes may be illustrated by the terms good—state—intelligence; the negative relation by good—state—ignorance.

Again, if B applies to no C, and A applies to some, or does not apply to some or all of B; in this case too there will be no syllogism. We may take as terms white—horse—swan, white—horse—crow. The same terms will also serve if the proposition AB is indefinite.

Furthermore, when the statement relating to the major term is universal, whether affirmative or negative, and that relating to the minor is negative and particular, there will be no syllogism, whether the species, but merely that the predicate is naturally a more comprehensive notion than the subject.

b 24 b 28. c 24 b 30.
ΑΡΙΣΤΟΤΛΗ

26 b λογισμός αδιορίστου τε καὶ ἐν μέρει ληφθέντος, οἷον εἰ τὸ μὲν Α παντὶ τῷ Β ύπάρχει, τὸ δὲ Β ύπάρχει τῷ Γ μή, ἢ εἰ μὴ παντὶ ύπάρχει· φαρ ἂν τινὶ μὴ ύπάρχῃ τὸ μέσον, τούτῳ καὶ παντὶ καὶ οὐδενὶ ἀκολουθήσει τὸ πρῶτον. ὑποκείσθωσιν γὰρ οἱ ὅροι ζώον—ἄνθρωπος—λευκόν· εἰτα καὶ ἂν μὴ κατηγορεῖται λευκῶν ὁ ἄνθρωπος εἰλήφθω κύκνος καὶ χιών· οὔκοιν τὸ ζώον τοῦ μὲν παντὸς κατηγορεῖται τοῦ δὲ οὐδενὸς, ὡστε οὐκ ἔσται συλλογισμός. πάλιν τὸ μὲν Α μηδενὶ τῷ Β ύπαρχέτω, τὸ δὲ Β τινὶ τῷ Γ μὴ ύπαρχέτω, καὶ οἱ ὅροι ύπάρχονται ἄφυγον—ἄνθρωπος—λευκόν· εἰτα εἰλήφθωσιν, ἂν μὴ κατηγορεῖται λευκῶν ὁ ἄνθρωπος, κύκνος καὶ χιών· τὸ γὰρ ἄφυγον τοῦ μὲν παντὸς κατηγορεῖται τοῦ δὲ οὐδενοῦ.

15 'Ετε ἐπεὶ αδιορίστον τὸ τινὶ τῷ Γ τὸ Β μὴ ύπάρχειν, ἀληθεύεται δὲ καὶ εἰ μηδενὶ ύπάρχει καὶ εἰ μὴ παντὶ ύπάρχει, ληφθέντων δὲ τοιούτων ὁρών ὡστε μηδενὶ ύπάρχειν οὐ γίγνεται συλλογισμός (τούτῳ γὰρ εἰρηταὶ πρότερον), φανερὸν οὖν ὅτι τῷ οὐτῷς ἔχειν τοῦς ὁρῶς οὐκ ἔσται συλλογισμός· ἢ γὰρ ἂν καὶ ἐπὶ τούτων. ὁμοίως δὲ δειχθήσεται καὶ εἰ τὸ καθόλου τεθεὶ στερητικόν.

Οὐδὲ γ’ ἐὰν ἄμφω τὰ διαστήματα κατὰ μέρος ἢ κατηγορικῶς ἢ στερητικῶς, ἢ τὸ μὲν κατηγορικῶς τὸ δὲ στερητικῶς λέγηται, ἢ τὸ μὲν αδιορίστον τὸ δὲ διωρισμένον, ἢ ἁμφω ἀδιορίστα, οὐκ ἔσται συλλογισμός οὐδαμῶς. ὁροὶ δὲ κοινοὶ πάντων ζώον—λευκόν—ἵππος, ζώον—λευκόν—λίθος.

Φανερὸν οὖν ἐκ τῶν εἰρημένων ὡς ἐὰν ἦ ἱσυλ-
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minor premiss is indefinite or particular; e.g., if $A \alpha_{10}$-applies to all $B$, and $B$ does not apply to some or all of $C$; for where the middle term does not apply to some of the minor, the major term may be associated with all or with none of the minor. Let us assume the terms animal—man—white; next as examples of white things of which 'man' is not predicated let us take 'swan' and 'snow.' Then 'animal' is predicated of all the former, but of none of the latter. Thus there will be no syllogism. Again, let $A$ apply $\varepsilon_{10}$-to no $B$, and let $C$ not apply to some $B$; let the terms be inanimate—man—white; next take as examples of white things of which 'man' is not predicated 'swan' and 'snow.' 'Inanimate' is predicated of all the latter, but of none of the former.

Further, since the statement ' $B$ does not apply to some $C$' is indefinite, and the statement is true whether $B$ applies to no $C$ or does not apply to all $C$; and since when such terms are chosen that $B$ applies to no $C$, we get no syllogism (this has been stated above $a$): it is obvious that with the terms in this relation there will be no syllogism; otherwise there would have been one with the terms which we selected. There will be a similar proof if the universal statement is taken as negative.

Also, if both the attributive relations are particular, and both affirmative or both negative, or one affirmative and the other negative; or if one is indefinite and the other definite; or if both are indefinite: in no case will there be a syllogism. Terms applicable to all these cases are animal—white—horse or animal—white—stone.

It is evident, then, from what we have said, that

$^a$ 26 a 2.
λογισμὸς ἐν τούτῳ τῷ σχήματι κατὰ μέρος, ὃτι ἀνάγκη τούς ὅρους ὅτως ἔχειν ὡς εἰπομεν· ἀλλὰς γὰρ ἑχόντων οὐδαμῶς γίγνεται. δὴ λοιπών καὶ ὅτι πάντες οἱ ἐν αὐτῷ συλλογισμοὶ τελειοὶ εἰσὶ πάντες γὰρ ἑπιτελοῦνται διὰ τῶν ἐξ ἀρχῆς ληφθέντων· καὶ ὅτι πάντα τὰ προβλήματα δείκνυται διὰ τούτου τοῦ σχήματος· καὶ γὰρ τὸ παντὶ καὶ τὸ μηδενὶ καὶ τὸ τινὶ καὶ τὸ μὴ τινὶ ὑπάρχειν. καλῶ δὲ τὸ τοιοῦτον σχῆμα πρῶτον.

V. Ὅταν δὲ τὸ αὐτὸ τῷ μὲν μηδὲν ὑπάρξῃ· ἐκατέρω παντὶ ἡ μηδενὶ, τὸ μὲν σχῆμα τὸ τοιοῦτον καλῶ δεύτερον, μέσον δὲ ἐν αὐτῷ λέγω τὸ κατηγορούμενον ἀμφότερον, ἀκρα δὲ καθ' ὅλων ἔλεγεται τοῦτο, μέσον δὲ ἀκρα γυνόμενον τὸ πρὸς τῷ μέσῳ κείμενον, ἐλαττον δὲ τὸ πορρωτέρω τοῦ μέσου. τίθεται δὲ τὸ μέσον ἐξ ὃ μὲν τῶν ἀκρῶν, πρῶτον δὲ τῇ θέσει.

27 a Τέλειος μὲν οὖν οὐκ ἔσται συλλογισμὸς οὐδαμῶς ἐν τούτῳ τῷ σχήματι, δυνατὸς δὲ ἔσται καὶ καθ' ὅλου καὶ μὴ καθ' ὅλου τῶν ὅρων ὅντων. καθ' ὅλου μὲν οὖν ὅντων ἔσται συλλογισμὸς ὅταν τὸ μέσον τῷ μὲν παντὶ τῷ δὲ μηδενὶ ὑπάρχῃ, ἀν τρόσ ὁποτερῶν ἦ το στερητικόν· ἀλλὰς δὲ οὐδαμῶς, κατηγορεῖσθαι γὰρ τὸ Μ τοῦ μὲν Ν μηδενὸς τοῦ δὲ Ξ παντός· ἐτει ὃν ἀντιστρέφει τὸ στερητικόν, οὐδὲν τῷ Μ ὑπάρξῃ τὸ Ν· τὸ δὲ γε τὸ Μ παντὶ τῷ Ξ ὑπέκειτο· ὥστε τὸ Ν οὐδενὶ τῷ Ξ· τοῦτο γὰρ δέδεκται πρότερον. πάλιν εἰ τὸ Μ τῷ μὲν Ν παντὶ τῷ δὲ Ξ μηδενὶ, οὐδὲ τῷ Ξ τῷ Ν οὐδενὶ ὑπάρξῃ· εἰ γὰρ τὸ Μ οὐδενὶ τῷ Ξ, οὐδὲ τῷ Ξ

1 τῷ Ξ τῷ Ν Α2, Philoponus (?), Waitz: τῷ Ν τῷ Ξ μιου, Trendelenburg: τῷ Ξ τῷ Ν BCdf.

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if a syllogism in this figure has a particular conclusion, its terms must be related as we have described; for if they are related otherwise there can in no case be a syllogism. It is clear also that all syllogisms in this figure are perfect (since they are all completed by means of the original assumptions); and that all kinds of propositions can be proved by this figure; for it proves both universal and particular conclusions, whether affirmative or negative. I call this kind of figure the First.

V. When the same term applies to all of one subject and to none of the other, or to all or none of both, I call this kind of figure the Second; and in it by the middle term I mean that which is predicated of both subjects; by the extreme terms, the subjects of which the middle is predicated; by the major term, that which comes next to the middle; and by the minor that which is more distant from it. The middle is placed outside the extreme terms, and is first by position.

Now there can in no case be a perfect syllogism in this figure; but there can be a valid\(^a\) syllogism, whether the terms are universal or not. If they are universal, there will be a syllogism when the middle applies to all of one subject and to none of the other, whichever of the two subjects is negated; but in no other case. E.g., let \(M\) be predicated of no \(N\), but of all \(O\). Then since the negative premiss is convertible, \(N\) will apply to no \(M\). But ex hypothesi \(M\) applies to all \(O\). Therefore \(N\) applies to no \(O\) (this has been proved above \(^b\)). Again, if \(M\) applies to all \(C\) but to no \(O\), \(N\) will apply to no \(O\). For if \(M\) applies

\(^a\) i.e. imperfect; 24 b 22 ff.
\(^b\) In Celarent, 25 b 40.
οὐδενὶ τῷ Μ' τὸ δέ γε Μ παντὶ τῷ Ν ὑπάρξει: γεγένηται γὰρ πάλιν τὸ πρῶτον σχήμα. ἐπεὶ δὲ ἀντιστρέφει τὸ στερητικὸν, οὐδὲ τὸ Ν οὐδενὶ τῷ Ξ ὑπάρξει, ὥστ' ἔσται ὁ αὐτὸς συλλογισμός. ἔστι δὲ δεικνύων ταῦτα καὶ εἰς τὸ ἀδύνατον ἀγοντας.

Ὅτι μὲν οὖν γίγνεται συλλογισμός οὕτως ἐχόντων τῶν ὄρων, φανερὸν, ἀλλ' οὐ τέλειος· οὐ γὰρ μόνον ἐκ τῶν εὖ ἀρχῆς ἀλλὰ καὶ ἐξ ἀλλών ἐπιτελεῖται τὸ ἀναγκαῖον.

Ἐὰν δὲ τὸ Μ παντὸς τοῦ Ν καὶ τοῦ Ξ κατηγορήται, οὔκ ἔσται συλλογισμός. ὅροι τοῦ ὑπάρχειν οὐσία—ζῷον—ἄνθρωπος, τοῦ μὴ ὑπάρχειν οὐσία—ζῷον—ἀριθμός· μέσον οὐσία. οὐδ' ὅταν μήτε τοῦ Ν μήτε τοῦ Ξ μήτε τοῦ ὑπάρχειν γραμμή̣—ζῷον—ἀνθρώπως, τοῦ μὴ ὑπάρχειν γραμμή—ζῷον—λίθος.

Φανερὸν οὖν ὅτι ἂν ἡ συλλογισμός καθόλου τῶν ὄρων οὕτως, ἀνάγκη τοὺς ὅρους εἶχει ως ἐν ἀρχῇ εἴπομεν· ἀλλος γὰρ ἐχόντων οὐ γίγνεται τὸ ἀναγκαῖον.

Ἐὰν δὲ πρὸς τὸν Ĥτερον ἡ καθόλου τὸ μέσον, ὅταν μὲν πρὸς τὸν μέιξω γένηται καθόλου ἡ κατηγορικῶς ἡ στερητικῶς, πρὸς δὲ τὸν ἐλάττων κατὰ μέρος καὶ ἀντικειμένως τῷ καθόλου (λέγω δὲ τὸ

— Sc. which proves the conclusion. Both Cesare and Camestres are proved by Celarent.

— By assuming in each case the contradictory of the conclusion, viz., that N applies to some O, and combining this with the major premiss. The resulting syllogisms (in Perio
to no \(O\), \(O\) will apply to no \(M\). But \textit{ex hypothesi} \(M\) applies to all \(N\). Therefore \(O\) will apply to no \(N\); for again we have the first figure. And since the negative statement is convertible, \(N\) will also apply to no \(O\). Thus it will be the same syllogism as before.\(^a\) It is also possible to prove these results by reduction \textit{ad impossibile}.\(^b\)

Thus it is evident that with the terms in this relation we get a syllogism, but not a perfect one; because the necessary conclusion is completed not only by means of the original premisses but by others as well.

If, however, \(M\) is predicated of all \(N\) and all \(O\), \textit{AA}—there can be no syllogism. The positive relation of the extremes is illustrated by the terms substance—animal—man; the negative relation by substance—animal—number (substance is the middle term). Nor can there be a syllogism if \(M\) is predicated of no \(N\) and of no \(O\). The positive relation of the extremes \textit{EE}—is illustrated by the terms line—animal—man; the negative relation by line—animal—stone.

Thus it is evident that if there is a syllogism where the terms are universally related, the terms must be related as we stated at the beginning \(^c\); for if they are otherwise related no conclusion follows by logical necessity.

If on the other hand the middle term is universally related to \textit{one} of the others, when it is in a universal relation, either positive or negative, to the major term, and in a particular relation in the opposite sense to that of the universal relation (by ‘in the opposite and Darii) give conclusions which are incompatible with the respective minor premisses.

\(^a\) 27 a 3.
λατινής

ΑΡΙΣΤΟΤΕΛΗΣ.

27 a

ἀντικειμένως, εἰ μὲν τὸ καθόλου στερητικὸν, τὸ ἐν μέρει καταφατικὸν εἰ δὲ κατηγορικὸν τὸ καθόλου, τὸ ἐν μέρει στερητικὸν), ἀνάγκη γίγνεσθαι συλλογισμὸν στερητικὸν κατὰ μέρος. εἰ γὰρ τὸ M τῷ μὲν N μηδενὶ τῷ δὲ Ξ τινὶ ὑπάρχει, ἀνάγκη τὸ N τινὶ τῷ Ξ μὴ ὑπάρχειν. ἐπεὶ γὰρ ἀντιστρέφει τὸ στερητικὸν, οὐδενὶ τῷ M ὑπάρχει τὸ N τὸ δὲ γε M ὑπέκειτο τινὶ τῷ Ξ ὑπάρχειν· ἀνάγκη τὸ N τινὶ τῷ Ξ οὐχ ὑπάρχει· γίγνεται γὰρ συλλογισμὸς διὰ τοῦ πρῶτου σχήματος. πάλιν εἰ τὸ μὲν N παντὶ τῷ M τῷ δὲ Ξ τινὶ μὴ ὑπάρχει, ἀνάγκη τὸ N τινὶ τῷ Ξ μὴ ὑπάρχειν· εἰ γὰρ παντὶ ὑπάρχει κατηγορεῖται δὲ καὶ τὸ M παντὸς τοῦ N, ἀνάγκη τὸ M παντὶ τῷ Ξ ὑπάρχειν· ὑπέκειτο δὲ τινὶ μὴ ὑπάρχειν. καὶ εἰ τὸ M τῷ μὲν Ν παντὶ ὑπάρχει τῷ δὲ Ξ μὴ παντὶ, ἔσται συλλογισμὸς ὅτι οὐ παντὶ τῷ Ξ τῷ Ξ τοῦ Ν άποδειξες δ’ ἡ αὐτή. εὰν δὲ τοῦ μὲν Ε παντὸς τοῦ δὲ Ν μὴ παντὸς κατηγορηται, οὐκ ἔσται συλλογισμὸς. ὅροι ζῷον—οὐσία—κόραξ, ζῷον—λευκὸν—κόραξ. οὐδ’ ὅταν τοῦ μὲν Ξ μηδενὸς τοῦ δὲ Ν τινός. ὁροὶ τοῦ ὑπάρχειν ζῷον—οὐσία—μονάς, τοῦ μη ὑπάρχειν ζῷον—οὐσία—ἐπιστήμη.

"Ὅταν μὲν οὖν αὐτὸς ἐκείμενος ἦ τὸ καθόλου τῷ καθόλου τῷ μέρος, εἰρήται πότ’ ἐσται καὶ πότ’ οὐκ ἔσται συλλογισμὸς· ὅταν δὲ ὁμοιοσχήμονες ὡς οἱ προτάσεις, οἱ οὐκ ἀμφότεροι στερητικοί ἢ καταφατικοὶ, οὐδαμῶς ἔσται συλλογισμὸς. ἔστωσαν γὰρ πρῶτον στερητικοὶ, καὶ τὸ καθόλου κείσθω πρὸς τὸ μείζον

* Viz. in Ferio, 26 a 25.
* In point of fact it is the same syllogism. There is no
sense 'I mean that if the universal relation is negative the particular relation is positive, and *vice versa*) to the minor term, the result must be a syllogism which is negative and particular. E.g., if *M* applies to no *N* but to some *O*, it must follow that *N* does not apply to some *O*. For since the negative statement is convertible, *N* will apply to no *M*. But *ex hypothesi* *M* applies to some *O*, and so *N* will not apply to some *O*; for we get a syllogism by means of the first figure.

Again, if *M* applies to all *N*, but does not apply to some *O*, it must follow that *N* does not apply to some *O*. For if it applies to all, and *M* is predicated of all *N*, *M* must apply to all *O*. But *ex hypothesi* it does not apply to some. And if *M* applies to all *N* but not to all *O*, there will be a syllogism to the effect that *N* does not apply to all *O*. The proof is the same as before. If, however, *M* is predicated of no *O* but not of all *N*, there will be no syllogism. Terms to illustrate this case are animal—substance—crow, animal—white—crow. Nor will there be a syllogism when *M* is predicated of no *O* but of some *N*. The positive relation of the extremes may be illustrated by the terms animal—substance—unit; the negative relation by animal—substance—science.

Thus we have stated under what conditions there will or will not be a syllogism when the universal is opposite in sense to the particular statement. When the premisses are similar in form, *i.e.* both negative or both affirmative, there will in no case be a syllogism. Let us first take them both as negative, and let the *universal* relation belong to the major term; *viz.*, let

real distinction between ' *M* does not apply to some *O* ' and ' *M* does not apply to all *O*.'

* i.e. not of some *N* ; *cf*. previous note.
ἄκρον, οἷον τῷ Μ τῷ μὲν Ν μηδενὶ τῷ δὲ Ξ τινὶ

15 μὴ ὑπάρχετω. ἐνδέχεται δὴ καὶ παντὶ καὶ μηδενὶ
tῷ Ξ τῷ Ν ὑπάρχειν. ὅροι τοῦ μὲν μὴ ὑπάρχειν
μέλαν—χιών—ζῷον· τοῦ δὲ παντὶ ὑπάρχειν οὐκ
ἔστι λαβεῖν, εἰ τῷ Μ τῷ Ξ τινὶ μὲν ὑπάρχει τινὶ δὲ
μῆ. εἰ γὰρ παντὶ τῷ Ξ τῷ Ν τό δὲ Μ μηδενὶ τῷ
Ν, τῷ Μ οὐδενὶ τῷ Ξ ὑπάρξει· ἀλλ᾿ ὑπέκειτο τινὶ

20 ὑπάρχειν· οὐτω μὲν οὖν οὐκ ἐγχωρεῖ λαβεῖν ὅρους,
ἐκ δὲ τοῦ ἀδιορίστου δεικτέον· ἐπεὶ γὰρ ἀληθεύεται
tῷ τινὶ μὴ ὑπάρχειν τῷ Μ τῷ Ξ καὶ εἰ μηδενὶ
ὑπάρχει, μηδενὶ δὲ ὑπάρχουσα οὐκ ἄν συλλο-

γισμός, φανερὸν ὅτι οὐδὲ νῦν ἔσται.

Πάλιν ἐστωσαν κατηγορικαί, καὶ τὸ καθόλου
25 κείσθω ὁμοίως, οἷον τῷ Μ τῷ μὲν Ν παντὶ τῷ
dὲ Ξ τινὶ ὑπάρχετω. ἐνδέχεται δὴ τῷ Ν τῷ Ξ καὶ
παντὶ καὶ μηδενὶ ὑπάρχειν. ὅροι τοῦ μηδενὶ ὑπ-

άρχειν λευκόν—κύκνος—λίθος· τοῦ δὲ παντὶ οὐκ
ἔσται λαβεῖν διὰ τὴν αὐτὴν αἰτίαν ἣν πρότερον,

30 ἀλλ᾽ ἐκ τοῦ ἀδιορίστου δεικτέον.

Εἰ δὲ τὸ καθόλου πρὸς τὸ ἐλαττὸν ἄκρον ἐστὶ
kαὶ τῷ Μ τῷ μὲν Ξ μηδενὶ τῷ δὲ Ν τινὶ μὴ

35 ὑπάρχει, ἐνδέχεται τῷ Ν τῷ Ξ καὶ παντὶ καὶ μη-

δενὶ ὑπάρχειν. ὅροι τοῦ ὑπάρχειν λευκόν—ζῷον—κόραξ·
tοῦ μὴ ὑπάρχειν λευκόν—λίθος—κόραξ. εἰ δὲ κατηγορικαί 

40 αἱ προτάσεις, ὅροι τοῦ μὴ ὑπάρχειν λευκόν—ζῷον—χιών, τοῦ ὑπάρχειν λευκόν

45—ζῷον—κύκνος.
M apply to no N, and not apply to some O. Then it is possible both for N to apply to all O and for it to apply to no O. The negative relation of the extremes may be illustrated by the terms black—snow—animal; but we cannot find terms to illustrate the positive universal relation, since M applies to some O although it also does not apply to some. For if N applies to all O, and M to no N, M will apply to no O; but ex hypothesi it applies to some. Thus it is not possible to find terms under these conditions, and our proof must be drawn from the indefinite nature of the particular premiss. For since it is true to say that M does not apply to some O if it in fact applies to none, and we saw that when it applies to none there is no syllogism, evidently there will be no syllogism in the present case either.

Again, let us take the premisses as affirmative, and let the universal relation be the same as before; i.e. let M apply to all N and to some O. Then it is possible both for N to apply to all O and for it to apply to no O. Examples of terms where it applies to none are white—swan—stone; but it will be impossible to find examples where it applies to all O, for the same reason as before; and our proof must be drawn from the indefinite nature of the particular premiss.

If the universal relation belongs to the minor term, i.e. if M applies to no O and does not apply to some N, it is possible both for N to apply to all O and for it to apply to no O. Examples of terms where it does apply are white—animal—crow; where it does not apply, white—stone—crow. If the premisses are affirmative, examples of terms where the relation of the extremes is negative are white—animal—snow; where it is positive, white—animal—swan.
27 b  Φανερὸν οὖν, ὅταν ὁμοιοσχήμονες ὄσιν αἱ προ-
τάσεις καὶ ὁ μὲν καθόλου ἢ δ’ ἐν μέρει, ὦτι οὐδαμῶς
γίγνεται συλλογισμός· ὄλλ’ οὖδ’ εἰ τιν ἐκατέρω
ὑπάρχει ἤ μὴ ὑπάρχει, ἤ τῷ μὲν τῷ δὲ μῆ, ἤ
μηδετέρῳ1 παντὶ, ἢ ἀδιορίστως. ὥροι δὲ κοινοὶ
πάντων λευκῶν—ζων—ἀνθρώπως, λευκῶν—ζων—
ἀθυγη.

28 a  Φανερὸν οὖν ἐκ τῶν εἰρημένων ὅτι ἐάν τε ὦτις
ἐξωσιν οἱ ὥροι πρὸς ἀλλήλους ὡς ἑλέχθη, γίγνεται
συλλογισμός εξ ἀνάγκης, ἢ τ’ ἢ συλλογισμός,
ἀνάγκη τούς ὥρους ὦτις ἐχειν. δῆλον δὲ καὶ ὦτι
5 πάντες ἀτελεῖς εἰσιν οἱ ἐν τούτῳ τῷ σχήματι συλ-
λογισμοί (πάντες γὰρ ἐπιτελοῦνται προσλαμβανο-
μένων τμῶν, ἢ ἐνυπάρχει τοῖς ὥροις εξ ἀνάγκης
ἢ τίθενται ὡς ὑποθέσεις, οἷον ὅταν διὰ τοῦ ἀθυ-
γητοῦ δεικνύμεν), καὶ ὦτι οὐ γίγνεται καταφατικὸς
συλλογισμός διὰ τούτου τοῦ σχήματος, ἀλλὰ πάντες
στερητικοὶ, καὶ οἱ καθόλου καὶ οἱ κατὰ
10 VI. Ἐάν δὲ τῷ αὐτῷ τὸ μὲν παντὶ τὸ δὲ μηδενὶ
ὑπάρχῃ, ἢ ἀμφω παντὶ ἢ μηδενὶ, τὸ μὲν σχήμα
τοῦ τουτοῦν καλῶ τρίτον, μέσον δ’ ἐν αὐτῷ λέγω
καθ’ οὐ ἀμφω τὰ κατηγοροῦμενα, ἄκρα δὲ τὰ κατ-
ηγοροῦμενα, μεῖζον δ’ ἄκρον τὸ πορρώτερον τοῦ
μέσου, ἔλαττον δὲ τὸ ἐγγύτερον τίθεται δὲ τὸ
15 μέσον ἐξω μὲν τῶν ἄκρων ἐσχατον δ’ τῇ θέσει.
Τέλειος μὲν οὖν οὐ γίγνεται συλλογισμός οὐδ’
ἐν τούτῳ τῷ σχήματι, δυνατὸς δ’ ἐσται καὶ καθόλου

1 μηδ’ ἔτερφ ὦ, Waite.

a 27 a 3-5, 26-32.
b Aristotle has in mind the formula which he uses in 1. 18,
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Thus it is evident that when the premisses are similar in form and when one is universal and the other particular, in no case do we get a syllogism; nor again if the middle term applies or does not apply to some of each subject, or applies to some of one but not to some of the other, or does not apply to all of either, or is related to them indefinitely. Examples of terms which are applicable to all these cases are white—animal—man, white—animal—inanimate.

Thus it is evident from the foregoing analysis that if the terms are related to one another in the manner described, a syllogism necessarily follows; and that if there is a syllogism, the terms must be thus related. It is obvious also that all syllogisms in this figure are imperfect (since they are all completed by assuming certain additional premisses which are either necessarily implicit in the terms or assumed as hypotheses, e.g., when we prove our result by reduction ad impossibile) and that we do not get an affirmative syllogism by this figure; all the syllogisms are negative, whether universal or particular.

VI. If one of the terms applies to all and the other to none of the same subject, or if both terms apply to all or none of it, I call this kind of figure the Third; and in it by the middle I mean that of which both the predications are made; by extremes the predicates; by the major term that which is the middle; and by the minor that which is nearer to it. The middle is placed outside the extremes, and is last by position.

Now we do not get a perfect syllogism in this figure either; but there will be a valid syllogism whether

where P stands for the major, R for the minor and S for the middle term.

\(3\) Other combinations of premisses.

\(1\) Both premisses universal.

\(c\) i.e. imperfect.

\(225\)
καὶ μὴ καθόλου τῶν ὅρων ὅντων πρὸς τὸ μέσον. καθόλου μὲν οὖν ὅντων, ὅταν καὶ τὸ Π καὶ τὸ Ρ παντὶ τῷ Σ υπάρχῃ, ὅτι τινὶ τῷ Ρ τὸ Π υπάρξει 20 ἐξ ἀνάγκης· ἐπεὶ γὰρ ἀντιστρέφει τὸ κατηγορικόν, υπάρξει τὸ Σ τινὶ τῷ Ρ, ὡσ' ἐπεὶ τῷ μὲν Σ παντὶ τὸ Π τῷ δὲ Ρ τινὶ τῷ Σ, ἀνάγκη τὸ Π τινὶ τῷ Ρ υπάρχει· γίγνεται γὰρ συλλογισμὸς διὰ τοῦ πρώτου σχήματος. ἐστὶ δὲ καὶ διὰ τοῦ ἀδυνάτου καὶ τῷ ἐκθέσθαι ποιεῖν τὴν ἀπόδειξιν· εἰ γὰρ ἀμφω 25 παντὶ τῷ Σ υπάρχει, ἀν λήφθη τι τῶν Σ οἷον τὸ Ν, τούτῳ καὶ τὸ Π καὶ τὸ Ρ υπάρξει, ὡστε τινὶ τῷ Ρ τὸ Π υπάρξει.

Καὶ ἂν τὸ μὲν Ρ παντὶ τῷ Σ τὸ δὲ Π μηδενὶ υπάρχῃ, ἔσται συλλογισμὸς ὅτι τὸ Π τινὶ τῷ Ρ οὐχ υπάρξει ἐξ ἀνάγκης· δ' ἐπεὶ ἀντιστραφείσης τῆς PX προτάσεως. 30 δειχθεὶς δ' ἂν καὶ διὰ τοῦ ἀδυνάτου, καθάπερ ἐπὶ τῶν προτέρων.

Εὰν δὲ τὸ μὲν Ρ μηδενὶ τὸ δὲ Π παντὶ υπάρχῃ τῷ Σ, οὐκ ἔσται συλλογισμός. ὁροὶ τοῦ υπάρχειν ζῷον—ιππος—ἀνθρωπος, τοῦ μὴ υπάρχειν ζῷον—ἀψυχον—ἀνθρωπος. οὐδ' ὅταν ἀμφω κατὰ μη-δενος τοῦ Σ λέγηται, οὐκ ἔσται συλλογισμός. 35 ὁροὶ τοῦ υπάρχειν ζῷον—ιππος—ἀψυχον, τοῦ μὴ υπάρχειν ἀνθρωπος—ἱππος—ἀψυχον· μέσον ἀψυχον.

Φαινεῖσθαι οὖν καὶ ἐν τούτῳ τῷ σχήματι ποτέ ἔσται καὶ πότ' οὐκ ἔσται συλλογισμός καθόλου τῶν ὅρων ὅντων. ὅταν μὲν γὰρ ἀμφότεροι οἱ ὁροὶ ὤσι κατηγορικοί, ἔσται συλλογισμός ὅτι τινὶ υπάρχει 40

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* In Darii, 26 a 23.

This does not, of course, mean that the conclusion is apodeictic, but that it follows necessarily from the premisses.
the terms are in a universal relation to the middle or not. If they are in a universal relation, when both \( P \) and \( R \) apply to all \( S \), it will necessarily follow that \( P \) applies to some \( R \); for since the affirmative statement is convertible, \( S \) will apply to some \( R \), and so since \( P \) applies to all \( S \) and \( S \) to some \( R \), \( P \) must apply to some \( R \); for we get a syllogism by means of the first figure.\(^a\) It is also possible to prove this by reduction ad impossibile, and by exposition; for where both terms apply to all \( S \), if we take one of the \( S \)s, e.g. \( N \), both \( P \) and \( R \) will apply to it, and so \( P \) will apply to some \( R \).

Also if \( R \) applies to all \( S \), and \( P \) to none, there will be a syllogism to the effect that \( P \) necessarily \(^b\) does not apply to some \( R \). The method of proof is the same as before, the premiss \( R S \) being converted.\(^c\) The result could also be proved by reduction ad impossibile, as in the former examples.

If, however, \( R \) applies to no \( S \) and \( P \) to all \( S \), there \( AE \) will be no syllogism. Examples of terms where the relation of the extremes is positive are animal—horse—man; where it is negative, animal—inanimate—man. Nor will there be a syllogism when both terms \( EE \) are predicated of no \( S \). Examples of terms where the relation of the extremes is positive are animal—horse—inanimate; where it is negative, man—horse—inanimate. Here 'inanimate' is the middle term.

It is evident, then, in this figure also when there will or will not be a syllogism if the terms are universally related. When both the terms are affirmative,\(^d\) there will be a syllogism to the effect that one extreme

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\(^a\) This gives a syllogism in Ferio, 26 a 25.

\(^b\) A loose and, strictly speaking, meaningless expression. Aristotle should have said 'when both premisses are affirmative.'
28 b τὸ ἄκρον τῷ ἄκρῳ, ὅταν δὲ στερητικοὶ, οὐκ ἔσται τὸ ἄκρον τῷ ἄκρῳ, ὅταν δ᾽ ὁ μὲν ἢ στερητικὸς ὁ δὲ καταφατικός, εἶν μὲν ὁ μεῖζων γένηται στερητικός ἀτερος δὲ καταφατικός, ἐσται συλλογισμός ὅτι τινὶ οὐχ ὑπάρχει τὸ ἄκρον τῷ ἄκρῳ, εὰν δ᾽ ἀνάπαλιν, οὐκ ἔσται.

Εὰν δ᾽ ὁ μὲν ἢ καθόλου πρὸς τὸ μέσον ὁ δὲ ἐν μέρει, κατηγορικῶς μὲν ὀντων ἀμφοῖν ἀνάγκη γίγνεσθαι συλλογισμόν, ἂν ὁ προτεροσοῦν ἢ καθόλου τών ὥρων. εἰ γὰρ τὸ μὲν Ρ παντὶ τῷ Σ τὸ δὲ Π τινὶ, ἀνάγκη τὸ Π τινὶ τῷ Ρ ὑπάρχει· ἐπεὶ γὰρ ἀντιστρέφει τὸ καταφατικὸν, ὑπάρχει τὸ Σ τινὶ τῷ Π, ὡστε ἐπεὶ τὸ μὲν Ρ παντὶ τῷ Σ τὸ δὲ Σ τινὶ τῷ Π, καὶ τὸ Π τινὶ τῷ Ρ, πᾶλιν εἰ γὰρ μὲν Ρ τινὶ τῷ Σ τὸ δὲ Π παντὶ ὑπάρχει, ἀνάγκη τὸ Π τινὶ τῷ Ρ ὑπάρχει· ὁ γὰρ αὐτὸς τρόπος τής ἀποδείξεως. ἐστὶ δ᾽ ἀποδείξαι καὶ διὰ τοῦ ἀδυνάτου καὶ τῇ ἕκθεσει, καθάπερ ἐπὶ τῶν προτέρων.

Εὰν δ᾽ ὁ μὲν ἢ κατηγορικός ὁ δὲ στερητικός, καθόλου δὲ ὁ κατηγορικός, ὅταν μὲν ὁ ἑλάττων ἢ κατηγορικός, ἐσται συλλογισμός· εἰ γὰρ τὸ Ρ παντὶ τῷ Σ τὸ δὲ Π τινὶ μὴ ὑπάρχει, ἀνάγκη τὸ Π τινὶ τῷ Ρ μὴ ὑπάρχει, εἰ γὰρ παντὶ, καὶ τὸ Ρ παντὶ τῷ Σ, καὶ τὸ Π παντὶ τῷ Σ ὑπάρξει· ἀλλ' οὐχ ὑπάρχει· δεῖκνυται καὶ ἀνεύ τῆς ἀπαγωγῆς, εἰν ληφθῇ τί τῶν Σ ὃ τὸ Π μὴ ὑπάρχει· ὅταν δ᾽ ὁ μεῖζων ἢ κατηγορικός, οὐκ ἔσται συλλογισμός, οἶον εἰ τὸ μὲν Π παντὶ τῷ Σ τὸ δὲ Ρ τινὶ τῷ Σ μὴ ὑπάρχει. ὁροι τοῦ παντὶ ὑπάρχεις ἐμψυχον—

*a By Darii in the first figure.
*b Sc. by converting the premiss RS, which again gives a syllogism in Darii.

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applies to some of the other; but when they are negative there will be no syllogism. When one term is negative and the other affirmative, if the major is negative and the other affirmative, there will be a syllogism to the effect that one extreme does not apply to some of the other; but with the opposite arrangement there will be no syllogism.

If, however, one of the terms is in a universal and the other in a particular relation to the middle, where both are affirmative a syllogism must follow, whichever of the two terms is universal. For if R applies to all S and P to some S, P must apply to some R; for since the affirmative premiss is convertible, S will apply to some P, and so since R applies to all S and S to some P, R will also apply to some P, and so P will apply to some R. Again, if R applies to some S and P to all S, P must apply to some R. The method of proof is the same as before. It is also possible to prove this result by reduction ad impossibile and by exposition, just as in the previous examples.

If one term is affirmative and the other negative, and the former is universal, when the minor term is affirmative there will be a syllogism. For if R applies to all S, and P does not apply to some S, it necessarily follows that P does not apply to some R. For if it applies to all R, and R to all S, P will also apply to all S; but ex hypothesi it does not. This can also be proved without reduction ad impossibile if we take some S to which P does not apply. But when the major is affirmative, there will be no syllogism; e.g., if P applies to all S and R does not apply to some S. Examples of terms where the relation of the extremes is universal and positive are animate—man—animal;

Barbara.
ξώον—ἀνθρωπός—τῶν ὅρων, εἰ τινὶ μὲν ὑπάρχει τῷ Σ τὸ Ρ τινὶ δὲ μὴ· εἰ γὰρ παντὶ τὸ Π τῷ Σ ὑπάρχει, τὸ δὲ Ρ τινὶ τῷ Σ, καὶ τὸ Π τινὶ τῷ Ρ ὑπάρξει· ὑπέκειτο δὲ μηδὲν ὑπάρχειν. ἀλλ᾽ ὥσπερ ἐν τοῖς πρότεροι ληπτέων· ἀδιορίστου γὰρ οὖσα τοῦ τινὶ μὴ ὑπάρχειν καὶ τὸ μηδὲν ὑπάρχον ἀληθὲς εἰπεῖν τινὶ μὴ ὑπάρχειν· μηδὲν δὲ ὑπάρχοντος οὐκ ἢν συλλογισμὸς. φανερὸν οὖν ὅτι οὐκ ἔσται συλλογισμὸς.

Εὰν δ᾽ ὁ στερητικὸς ἢ καθόλου τῶν ὅρων, ὅταν μὲν ὁ μεῖζων ἢ στερητικὸς ὁ δὲ ἐλάττων κατηγορικός, ἦν συλλογισμός· εἰ γὰρ τὸ Π μηδὲν τῷ Σ τὸ τῷ Ρ τίνι ὑπάρχει τῷ Σ, τὸ πρῶτον σχῆμα τῆς PX ἐπιστήμης ὑπάρχειν ζῷον—ἄνθρωπος—ἄγριον, τοῦ μὴ ὑπάρχειν ζώον—ἐπιστήμη—ἄγριον· μέσου εἴναμφοι τῷ ἀγριόν.

Ὡς ὅταν ἀμφότεροι στερητικοὶ τεθῶσι, ἡ δ᾽ ὁ μὲν καθόλου ὁ δ᾽ ἐν μέρει. ὅροι ὅταν ὁ ἐλάττων ἢ καθόλου πρὸς τὸ μέσον, ζῶον—ἐπιστήμη—ἄγριον, ζῶον—ἀνθρωπός—ἄγριον· ὅταν δ᾽ ὁ μεῖζων, τοῦ μὲν μὴ ὑπάρχειν κόραξ—χιών—λευκόν· τοῦ δ᾽ ὑπάρχειν οὐκ ἔστιν λαβεῖν, εἰ τὸ Ρ τινὶ μὲν ὑπάρχει τῷ Σ τινὶ δὲ μὴ ὑπάρχει (εἰ γὰρ τὸ Π παντὶ τῷ 1 εἴ om. Cm.

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*a i.e. on the assumption that the relation of the extremes is universal and negative.
but we cannot find terms where the relation is universal and negative, since \( R \) applies to some \( S \) although it also does not apply to some. For if \( P \) applies to all \( S \), and \( R \) to some \( S \), then \( P \) will apply to some \( R \). But *ex hypothesi* it applies to none. The explanation must be apprehended as in the former examples; for since the statement that one term does not apply to another is indefinite, it is true to say that that which applies to none does not apply to some; but we saw that when \( R \) applies to no \( S \) there is no syllogism. Thus it is evident that there will be no syllogism in this case.

If, however, the negative term is universal, when the major is negative and the minor affirmative, there will be a syllogism. For if \( P \) applies to no \( S \), and \( R \) applies to some \( S \), \( P \) will not apply to some \( R \); for we shall have the first figure again when the premiss \( RS \) is converted. But when the minor term is negative there will be no syllogism. Examples of terms where the relation of the extremes is positive are animal—man—wild; where it is negative, animal—science—wild. In both cases 'wild' is the middle term.

Nor will there be a syllogism when both terms are taken negatively, and one is universal and the other particular. Examples of terms when it is the minor term that is in a universal relation to the middle are animal—science—wild, animal—man—wild. When it is the major that is in this relation, examples of terms where the relation of the extremes is negative are crow—snow—white; but where it is positive terms cannot be found, since \( R \) applies to some \( S \) although it also does not apply to some (for if \( P \)

\(^{b} 27 \) b 20, 28. \(^{c} 28 \) a 30. \(^{d} \) In Ferio, 26 a 25. 

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Δηλοῖ δὲ καὶ ὅτι ἐν ἅπασι τοῖς σχήμασιν, ὅταν μὴ γίγνηται συλλογισμός, κατηγορικῶν ἢ στερητικῶν ᾠδηκὼν τῶν ὅρων οὐδὲν ὅλως γίγνεται ἀναγκαῖον, κατηγορικοῦ δὲ καὶ στερητικοῦ, καθόλου ληφθέντος τοῦ στερητικοῦ ἀεὶ γίγνεται συλλογισμός τοῦ ἐλάττωσος ἀκροῦ πρὸς τὸ μεῖζον, οἷον ἀεὶ τὸ μὲν Α παντὶ τῷ Β ἢ τῷ, τὸ δὲ Β μηδενὶ τῷ Γ· ἀντιστρεφομένων γάρ
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applies to all \( R \), and \( R \) to some \( S \), \( P \) also applies to some \( S \); but \( \textit{ex hypothesi} \) it applies to none); the proof must be drawn from the indefinite nature of the particular premiss.\(^a\)

Furthermore, if both terms apply or do not apply to some of the middle, or if one applies to some and the other does not, or if one applies to some and the other does not apply to all, or if they are related to the middle indefinitely, there will in no case be a syllogism. Examples of terms common to all these cases are animal—man—white, animal—inanimate—white.

Thus it is evident in this figure also when there will or will not be a syllogism; and that where the terms are related in the manner described \( b \) a syllogism necessarily follows; and that if there is a syllogism the terms must be so related. It is evident also that all the syllogisms in this figure are imperfect (since they are all completed by assuming certain additional premisses); and that it will be impossible to reach a universal conclusion, either negative or affirmative, by means of this figure.

VII. It is clear also that in all the figures, whenever we get no (direct) syllogism, where the terms are both affirmative or both negative, there is no necessary conclusion at all; but where one term is affirmative and the other negative, if the negative term is universal we always get a syllogism establishing a relation of the minor to the major extreme.\(^c\) \( E.g. \), if \( A \) applies to all \( d \) or some \( e \) \( B \), and \( B \) to no \( C \); for if

\[ \begin{align*}
\text{a} & \quad \text{Cf. 27 b 20.} \\
\text{b} & \quad 28 \text{ a 18, 26, 28 b 5, 15, 31.} \\
\text{c} & \quad \text{The minor being the predicate and the major the subject.} \\
\text{d} & \quad \text{Fapesmo in the first, Fesapo in the fourth figure.} \\
\text{e} & \quad \text{Frisesomorum in the first, Fresison in the fourth figure.}
\end{align*} \]
τῶν προτάσεων ἀνάγκη τὸ \( \Gamma \) τινὶ τῷ \( \Lambda \) μὴ ὑπάρχειν. ὁμοίως δὲ κατὶ τῶν ἐτέρων σχημάτων: ἂει γὰρ γίγνεται διὰ τῆς ἀντιστροφῆς συλλογισμὸς. δῆλον δὲ καὶ ὅτι τὸ ἀδιόριστον ἀντὶ τοῦ κατηγορικοῦ τοῦ ἐν μέρει τιθέμενον τῶν αὐτῶν ποιῆσει συλλογισμὸν ἐν ἀπασὶ τοῖς σχήμασιν.

80 Ἐστὶ δὲ καὶ ἀναγαγεῖν πάντας τοὺς συλλογισμούς εἰς τοὺς ἐν τῷ πρώτῳ σχῆματι καθόλου συλλογισμούς. οἱ μὲν γὰρ ἐν τῷ εὐυτέρῳ φανερὸν ὅτι δι᾽ ἐκείνων τελειοῦνται, πλὴν οὐχ ὁμοίως πάντες, ἀλλ᾽ οἱ μὲν καθόλου στερητικοῦ ἀντιστροφῆς, τῶν δὲ ἐν μέρει ἐκάτερος διὰ τῆς εἰς τὸ ἀδύνατον ἀπαγωγῆς. οἱ δὲ ἐν τῷ πρῶτῳ οἱ κατὰ μέρος επιτελοῦνται μὲν καὶ δι᾽ αὐτῶν, ἐστὶ δὲ καὶ διὰ

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* In either case we get by conversion: C applies to no B, B applies to no A.

* C does not apply to some A (Perim).

* In the second and third figures this is effected simply by
the premisses are converted it necessarily follows that C does not apply to some A. Similarly too in the other figures, for we always get a syllogism by the process of conversion. It is obvious also that in all the figures if the particular affirmative is replaced by the indefinite the result will be the same syllogism.

It is evident also that all imperfect syllogisms are completed by means of the first figure. For all the conclusions are reached either by demonstration or by reduction ad impossibile, and in both cases we get the first figure: in the case of those which are completed by demonstration because, as we have seen, all the conclusions are reached by means of conversion, and the conversion produces the first figure; and in the case of those which are demonstrated by reduction ad impossibile because if a false premiss is assumed we get the syllogism by means of the first figure. E.g., in the last figure, if A and B apply to all C, we get a syllogism to the effect that A applies to some B; for if it applies to no B, and B applies to all C, A applies to no C. But ex hypothesi it applies to all C. Similarly too in the other cases.

It is possible also to reduce all syllogisms to the universal syllogisms in the first figure. Those in the second figure are obviously completed by their help, but not all in a similar manner: the universal syllogisms are completed by the conversion of the negative statement, and each of the particular ones by a reduction ad impossibile. The particular syllogisms in the first figure are indeed completed by means of themselves, but it is possible also to prove them by means transposing the premisses. AE gives Cesare and Felapton; IE gives Festino and Ferison.

In Darapti.
τού δευτέρου σχήματος δεικνύναι εἰς ἀδύνατον ἀπ’Αρίστολος, οἷον εἰ τὸ Α παντὶ τῷ Β τὸ δὲ Β τινὶ
10 τῷ Γ, ὅτι τὸ Α τινὶ τῷ Γ. εἰ γὰρ μηδενὶ, τῷ δὲ Β παντὶ, οὐδενὶ τῷ Γ τὸ Β υπάρξει· τούτῳ γὰρ

υσμεν διὰ τοῦ δευτέρου σχήματος. ὅμοιως δὲ καὶ ἐπὶ τοῦ στερητικοῦ ἐσται ἡ ἀπόδειξις. εἰ γὰρ τὸ
Α μηδενὶ τῷ Β τὸ δὲ Β τινὶ τῷ Γ υπάρξει, τὸ Α
twi τῷ Γ οὖχ υπάρξει· εἰ γὰρ παντὶ, τῷ δὲ Β

μηδενὶ υπάρχει, οὐδενὶ τῷ Γ τὸ Β υπάρξεi· τούτο

d’ ἂν τὸ μέσον σχήμα. ὥστε ἐπει οἱ μὲν εἰ τῷ
mites σχήματι συλλογισμοὶ πάντες ἀνάγονται εἰς
tous εἰ τῷ πρώτῳ καθόλου συλλογισμοὺς, οἱ δὲ
cata μέρος εἰ τῷ πρῶτῳ εἰς τοὺς εἰ τῷ μέσῳ,

φανερὸν ὅτι καὶ οἱ κατὰ μέρος ἀναχθήσονται εἰς
tous εἰ τῷ πρώτῳ σχήματι καθόλου συλλογισμοὺς.

20 Οἱ δ’ εἰ τῷ τρίτῳ καθόλου μὲν ὅτι εἰς τῶν ὅρων

εὔθυς ἐπιτελοῦνται δι’ ἐκείνων τῶν συλλογισμῶν, ὅταν δ’ εἰ μέρει ληφθῶσι, διὰ τῶν ἐν μέρει συλ-

λογισμῶν τῶν ἐν τῷ πρώτῳ σχήματι: οὕτω δὲ

ἀνήχθησαν εἰς ἐκείνους, ὥστε καὶ οἱ εἰ τῷ τρίτῳ

σχήματι οἱ κατὰ μέρος. φανερὸν οὖν ὅτι πάντες

ἀναχθήσονται εἰς τοὺς εἰ τῷ πρώτῳ σχήματι
catholou syllogismou. Οἱ μὲν οὖν τῶν συλλογισμῶν υπάρχειν ἡ μὴ
υπάρχειν δεικνύντες εἰρηταὶ πῶς ἔχουσι, καὶ καθ’
autois oi eik to autoi schhamatos kai prois allhous

οi ek tων eteρων schhamaton.1

VIII. Ἔπει δ’ ἐτερὸν ἐστὶν υπάρχειν τε καὶ ἐς

1 schhamatwn om. d.

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1 Camestres.
b 26 b 34.
c i.e. the universal syllogisms of the first figure.
of the second figure if we employ reduction *ad impossibile*; e.g., if A applies to all B, and B to some C, to prove that A applies to some C. For if it applies to no C, but to all B, B will apply to no C; for we know this by means of the second figure.*

The proof will take a similar form also in the case of the negative relation. For if A applies to no B, and B applies to some C, A will not apply to some C. For if it applies to all C, but to no B, B will apply to no C; and this is of the form which we described as the middle figure. And so since the syllogisms in the middle figure can all be reduced to the universal syllogisms in the first figure, and the particular syllogisms in the first figure to the universal syllogisms in the second, it is evident that the particular syllogisms (in the first figure) can also be reduced to the universal syllogisms in that figure.

As for the syllogisms in the third figure, when the terms are universal, they are completed directly by means of the syllogisms mentioned above; but when the terms are particular, they are completed by means of the particular syllogisms in the first figure. But these, as we have seen, can be reduced to those mentioned above; and therefore so can the particular syllogisms in the third figure. Thus it is evident that all syllogisms can be reduced to the universal syllogisms in the first figure.

Thus we have stated, with reference to those syllogisms which demonstrate that a predicate simply applies or does not apply to a subject, how those of the same figure are related among themselves, and how those of different figures are related to one another.

VIII. Since 'to apply' is not the same as 'neces-
ARISTOTLE

30 ἀνάγκης ὑπάρχειν καὶ ἐνδέχεσθαι ὑπάρχειν (πολλὰ γὰρ ὑπάρχει μὲν, οὐ μέντοι ἐξ ἀνάγκης· τὰ δ’ οὔτ’ ἐξ ἀνάγκης οὐθ’ ὑπάρχει οἷς, ἐνδέχεται δ’ ὑπάρχειν), δὴλον ὅτι καὶ συλλογισμὸς ἐκαστοῦ τούτων ἐτερος ἔσται, καὶ οὐχ ὀμοίως ἐχὸντων τῶν ὀρων, ἀλλ’ ὁ μὲν ἐξ ἀναγκαίων ὁ δ’ ἐξ ὑπαρχόντων ὀδ’ ἐξ ἐνδεχομένων.

Ἐπὶ μὲν οὖν τῶν ἀναγκαίων σχέδον ὀμοίως ἔχει καὶ ἐπὶ τῶν ὑπαρχόντων· ὅσαῦτως γὰρ τιθεμένων τῶν ὀρων ἐν τῇ τῷ ὑπάρχειν καὶ τῷ ἐξ ἀνάγκης ὑπάρχειν ἡ μὴ ὑπάρχειν ἔσται τῇ καὶ οὐκ ἔσται συλλογισμὸς, πλὴν διοίκεισθαι τοῖς ὀροις τὸ ἐξ ἀνάγκης ὑπάρχειν ἡ μὴ ὑπάρχειν τῷ τῇ γὰρ στερητικῶν ὀσαύτως ἀντιστρέφει, καὶ τῷ ἐν οἷον εἶναι καὶ τῷ κατὰ παντὸς ὀμοίως ἀποδώσομεν.

Ἐν μὲν οὖν τοῖς ἀλλοις τῶν αὐτῶν τρόπων δει-κεῖσται διὰ τῆς ἀντιστροφῆς τὸ συμπέρασμα ἀναγκαίον ὑσπερ ἐπὶ τῷ ὑπάρχειν· ἐν δὲ τῷ μέσῳ σχήματι ὅταν ἡ τῷ καθόλου καταφατικῶν τῷ δ’ ἐν μέρει στερητικῶν, καὶ πάλιν ἐν τῷ τρίτῳ ὅταν τῷ μὲν καθόλου κατηγορικῶν τῷ δ’ ἐν μέρει στερητικῶν, οὐχ ὀμοίως ἔσται ἡ ἀπόδειξις, ἀλλ’ ἀνάγκη ἐκθεμένους ὃ τινὶ ἑκάτερον μὴ ὑπάρχει, κατ’ τοῦτο ποιεῖν τὸν συλλογισμὸν ἔσται γὰρ ἀναγ-

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* Cf. note on 25 a 2.
5 Cf. 25 a 5.
* 24 b 26.
4 The syllogisms in Baroco and Bocardo, when assertoric, are proved by reduction ad impossibile, i.e. by assuming the contradictory of the conclusion which it is required to prove (27 a 38, 28 b 19). But the contradictory of an apodeictic judgement is problematic; and the combination of an apo-

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sarily to apply ' or ' possibly to apply ' (because there are many predicates which apply, but not necessarily; and others neither apply necessarily nor indeed apply at all, but it is possible that they should apply), it is clear that the syllogism also is different in each of these cases, and that the terms are not related in the same way, but that one type of syllogism is composed of apodeictic, another of assertoric, and another of problematic premisses. If the premisses are apodeictic the conditions are, roughly speaking, the same as when they are assertoric. When the terms are related in the same way, then both in assertoric and in apodeictic propositions, whether affirmative or negative, a syllogism will or will not result in the same way. The only difference will be that the terms will have attached to them the words ' necessarily applies ' or ' necessarily does not apply. ' For the negative premiss converts in the same way, and we shall give the same explanation of the expression ' to be wholly contained in ' or ' to be predicated of all.'

Thus in all the other cases the conclusion will be shown to be necessary in the same way as in an assertoric syllogism, by means of conversion; but in the middle figure, when the universal statement is affirmative and the particular negative, and again in the third figure when the universal statement is affirmative and the particular negative, the proof will not take the same form. We must take examples of that portion of its subject to which each predicate does not apply, and draw the conclusion from this; for with this combination of terms we shall get a deictic with a problematic premiss cannot give an apodeictic conclusion (ch. xvi).
καίως ἐπὶ τούτων εἰ δὲ κατὰ τοῦ ἐκτεθέντος ἐστὶν ἀναγκαῖος, καὶ κατ᾽ ἐκείνων τινὸς τὸ γάρ ἐκτεθέν ὀπερ ἐκεῖνο τί ἐστίν. γίγνεται δὲ τῶν συλλογισμῶν ἐκάτερος ἐν τῷ οἴκειῳ σχήματι.

15 IX. Συμβάινει δὲ ποτε καὶ τῆς ἐτέρας προτάσεως ἀναγκαίας οὕσης ἀναγκαίον γίγνεσθαι τῶν συλλογισμῶν, πλὴν οὐχ ὀποτέρας ἐτυχεῖν, ἀλλὰ τῆς πρὸς τὸ μείζον ἄκρον οἷον εἰ τὸ μὲν Α τῷ Β εξ ἀνάγκης εἰληπται ύπάρχον (ἡ μὴ ύπάρχον), τὸ δὲ Β τῷ Γ ύπάρχον μονον' οὕτως γὰρ εἰλημμένων τῶν προτάσεων εξ ἀνάγκης τὸ Α τῷ Γ ύπάρχει (ἡ οὐχ ύπάρχει)· ἐπεὶ γὰρ παντὶ τῷ Β εξ ἀνάγκης ύπάρχει (ἡ οὐχ ύπάρχει) τὸ Α, τὸ δὲ Γ τὶ τῶν Β ἑστὶ, φανερὸν οτί καὶ τῷ Γ εξ ἀνάγκης ἑσται θάτερον τούτων.

Εἰ δὲ τὸ μὲν ΑΒ μὴ ἐστιν ἀναγκαῖον τὸ δὲ ΒΓ ἀναγκαῖον, οὐκ ἑσται τὸ συμπέρασμα ἀναγκαῖον. εἰ γὰρ ἑστὶ, συμβήσεται τὸ Α τὶν τῷ Β ύπάρχειν εξ ἀνάγκης διὰ τε τοῦ πρῶτου καὶ διὰ τοῦ τρίτου σχήματος. τούτο δὲ ψεῦδος· ενδέχεται γὰρ τοινῦτον εἶναι τὸ Β ὡς ἐγχωρεῖ τὸ Α μὴδεν ύπάρχειν. ἐτι καὶ ἐκ τῶν ὅρων φανερὸν ὅτι οὐκ ἑσται τὸ συμπέρασμα ἀναγκαῖον, οἴον εἰ τὸ μὲν Α εἰη κύνησις, τὸ δὲ Β ζῶον, ἐφ' ὡς δὲ τὸ Γ ἄνθρωπος· ζῶον μὲν γὰρ ὁ ἄνθρωπος εξ ἀνάγκης ἑστὶ, κινεῖται δὲ τὸ ζῶον οὐκ εξ ἀνάγκης, οὐδ' ὁ ἄνθρωπος.

1 τῷ ABIC: τῷ B2 diu.
2 ἑστὶ ABdu: ἑσται Ch.

a e.g., we have in Baroco M necessarily applies to all N M necessarily does not apply to some O.
PRIOR ANALYTICS, I. viii–ix

necessary conclusion. And if the conclusion is necessarily true of the selected examples, then it will be necessarily true of some of the original term, since that is identical with the selected example.* Each of these syllogisms is effected in its own figure.b

IX. It sometimes happens that we get an apodeictic syllogism even when only one of the premisses—not either of the two indifferently, but the major premiss—is apodeictic: e.g., if A has been taken as necessarily applying or not applying to B, and B as simply applying to C. If the premisses are taken in this way A will necessarily apply (or not apply) to C. For since A necessarily applies (or does not apply) to all B, and C is some B, obviously A must also apply (or not apply) to C.c

If, however, the premiss AB is not apodeictic, but BC is, the conclusion will not be apodeictic. If it is, it must follow, both by the first and by the third figure, that A applies to some B. But this is false; for B may be such that it is possible for A to apply to no B. Further, it is also evident from a consideration of the terms that the conclusion will not be apodeictic: e.g., supposing A to be ‘motion,’ B ‘animal,’ and C ‘man.’ Man is necessarily an animal, but the animal is not necessarily moved; nor is the man. Similarly

If we take part of O, P, such that M necessarily applies to no P, and substitute this for the minor premiss, we can infer that N necessarily applies to no P; i.e., necessarily does not apply to some O. Similarly with Bocardo.b

Baroco by Camestres, and Bocardo by Felapton.

c The argument is fallacious, and Bekker’s defence of it (A.T.M. p. 39) depends upon a symbolism which obscures the real issue. The relation of A to C cannot be apodeictic unless C is necessarily ‘some B.’ Aristotle does not distinguish clearly between assertoric and apodeictic relations; cf. Introd. p. 190.

An apodeictic major premiss sometimes gives an apodeictic conclusion even if the minor premiss is assertoric.

First figure.

(a) Universal syllogisms.
ομοίως δὲ καὶ εἰ στερητικὸν εἰη τὸ ΑΒ· ἣ γὰρ 
αὐτῇ ἀπόδειξις.

'Επὶ δὲ τῶν ἐν μέρει συλλογισμῶν, εἰ μὲν τὸ 
καθόλου ἐστὶν ἀναγκαῖον, καὶ τὸ συμπέρασμα ἐσται 
ἀναγκαῖον, εἰ δὲ τὸ κατὰ μέρος, οὐκ ἀναγκαῖον, 
οὔτε στερητικῆς οὔτε κατηγορικῆς οὔσης τῆς 
καθόλου προτάσεως. ἦστω δὴ πρῶτον τὸ καθόλου 
ἀναγκαῖον, καὶ τὸ μὲν Α παντὶ τῷ Β ύπαρχέτω εἰς 
ἀνάγκης, τὸ δὲ Β τυι τῷ Γ ύπαρχέτω μόνον.

ἀνάγκη δὴ τὸ Α τυι τῷ Γ ύπάρχειν εἰς ἀνάγκης· 
τὸ γὰρ Γ ύπὸ τὸ Β ἐστὶ, τῷ δὲ Β παντὶ τὸ Α' 
ὑπήρχεν εἰς ἀνάγκης. ομοίως δὲ καὶ εἰ στερητικὸς 
εἴη ὁ συλλογισμός· ἢ γὰρ αὐτῇ ἦσται ἀπόδειξις.
εἰ δὲ τὸ κατὰ μέρος ἐστὶν ἀναγκαῖον, οὐκ ἦσται 
τὸ συμπέρασμα ἀναγκαῖον· οὐδὲν γὰρ ἀδύνατον συμ-
πέτει, καθάπερ οὖδ' ἐν τοῖς καθόλου συλλογισμοῖς.
ομοίως δὲ καὶ τῶν στερητικῶν. ὁροι κύνησις—
ζωον—λευκόν.

Χ. 'Επὶ δὲ τοῦ δευτέρου σχήματος, εἰ μὲν ἡ 
στερητικὴ πρότασις ἐστὶν ἀναγκαία, καὶ τὸ συμ-
πέρασμα ἐσται ἀναγκαῖον, εἰ δ' ἡ κατηγορικὴ, οὐκ
10 ἀναγκαῖον. ἦστω γὰρ πρῶτον ἡ στερητικὴ ἀνα-
γκαία, καὶ τὸ Α τῷ μὲν Β μηδενί εἰ ἐνδεχέσθω, τῷ 
δὲ Γ ύπαρχέτω μόνον. ἐπεὶ οὖν ἀντιστρέφει τὸ 
στερητικὸν, οὐδὲ τὸ Β τῷ Α οὐδὲν εἰ ἐνδέχεται· 
τὸ δὲ Α παντὶ τῷ Γ ύπάρχει, ὡστ' οὐδὲν τῷ Γ τὸ 
Β ἐνδέχεται· τὸ γὰρ Γ ύπὸ τῷ Α ἐστίν. ἦσταις 
δὲ καὶ εἰ πρὸς τῷ Γ τεθείη 2 τὸ στερητικὸν· εἰ γὰρ
15 τὸ Α μηδενί τῷ Γ ἐνδέχεται, οὐδὲ τὸ Γ οὐδὲν τῷ 
Α ἐγχωρεῖ· τὸ δὲ Α παντὶ τῷ Β ύπάρχει, ὡστ'

2 τεθείη Alexander, Philoponus, Themistius: τεθ' codd.

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also if the premiss AB is negative, for the proof is the same.

In particular syllogisms, if the universal premiss is (b) apodeictic, the conclusion will also be apodeictic; but if it is the particular premiss that is apodeictic, the conclusion is not apodeictic, whether the universal premiss is negative or affirmative. Let us first take the universal premiss as apodeictic, and let A necessarily apply to all B, and B simply apply to some C. Then it must follow that A necessarily applies to some C. For C falls under B, and ex hypothesi A applies necessarily to all B. Similarly too if the syllogism is negative; for the proof will be the same. But if the particular premiss is apodeictic, the conclusion will not be apodeictic; for there is no impossibility involved (if it is not true), just as there was none in the universal syllogisms. Similarly too in the case of negative premisses. Examples of terms are motion—animal—white.

X. In the second figure, if the negative premiss is apodeictic, the conclusion will also be apodeictic; but not if the affirmative premiss is apodeictic. First let the negative premiss be apodeictic, and let it be impossible for A to apply to any B, but let it simply apply to C. Then since the negative premiss is convertible, it is also impossible for B to apply to any A. But A applies to all C. Therefore B cannot apply to any C; for C falls under A. The same also holds good if the negative statement refers to C. For if A cannot apply to any C, neither can C apply to any A. But A applies to all B. Therefore C cannot

\[ a \text{ Cf. 26 a 22 note; and for the fallacy see note on 30 a 15-23.} \]
\[ b \text{ i.e. when one of the premisses is negative.} \]
\[ c \text{ Cf. notes on 26 a 22, 30 a 15-23.} \]
οὔδενὶ τῶν Β τὸ Γ ἐνδέχεται· γίγνεται γὰρ τὸ πρῶτον σχῆμα πάλιν. οὐκ ἄρα οὔδε τὸ Β τῷ Γ· ἀντιστρέφει γὰρ ὁμοίως.

Εἰ δὲ ἡ κατηγορικὴ πρότασίς ἐστιν ἀναγκαία, οὐκ ἐσται τὸ συμπέρασμα ἀναγκαίον. ύπαρχέτω γὰρ τὸ Α παντὶ τῷ Β εξ ἀνάγκης, τῷ δὲ Γ μηδενὶ ύπαρχέτω μόνον. ἀντιστραφέντος οὖν τοῦ στερητικοῦ τὸ πρῶτον γίγνεται σχῆμα· δεδεικται δὲ ἐν τῷ πρῶτῳ ὅτι μὴ ἀναγκαίας ὅπους τῆς πρὸς τὸ μείζον στερητικῆς οὔδε τὸ συμπέρασμα ἐσται ἀναγκαίον, ὥστ᾽ οὔδ᾽ ἐπὶ τούτων ἐσται εξ ἀνάγκης.

Εἰ δ᾽ εἰ τὸ συμπέρασμα ἐστιν ἀναγκαίον, συμβαίνει τὸ Γ τω λ ἀνάγκης εξ ἀνάγκης· εἰ γὰρ τὸ Β τῷ Γ μηδενὶ ὑπάρχει εξ ἀνάγκης, οὔδε τὸ Γ τῷ Β οὔδεν ὑπάρχει εξ ἀνάγκης· τὸ δὲ γε Β τοῦ τῷ Α ἀνάγκης ὑπάρχειν, εἴπερ καὶ τὸ Α παντὶ τῷ Β εξ ἀνάγκης ὑπήρχειν, ὥστε τὸ Γ ἀνάγκη

τούτων ληφθῆναι ὥστε τὸ Γ ἐνδέχεται ὑπάρχειν. ἐπὶ κἂν ὅρους ἐκθέμενον εἰς δείξαι ὅτι τὸ συμπέρασμα οὐκ ἐστιν ἀναγκαίον ἀπλῶς, ἀλλὰ τούτων ὅντων ἀναγκαίον. οἰον ἐστω τὸ Α ζῷον, τὸ δὲ Β ἄνθρωπος, τὸ δὲ Γ λευκόν, καὶ αἰ προτάσεις ὁμοίως εἰλήφθωσαν· ἐνδέχεται γὰρ τὸ ζῷον μηδενὶ λευκῷ ὑπάρχειν. οὐχ ὑπάρχει δὴ οὔδ᾽ ὁ ἄνθρωπος οὔδεν λευκῷ, ἀλλ᾽ οὐκ εξ ἀνάγκης· ἐνδέχεται γὰρ ἄνθρωπον γενέσθαι λευκῶν, οὐ μέντοι ἐως ἃν ζῷον μηδενὶ λευκῷ ὑπάρχῃ. ὥστε τούτων μὲν ὅντων ἀναγκαίον ἐσται τὸ συμπέρασμα, ἀπλῶς δὲ οὐκ ἀναγκαίον.

'Ομοίως δ' ἐξει καὶ ἐπὶ τῶν εν μέρει συλλογι-
apply to any B, for we get the first figure again; and so neither can B apply to C, for the premiss is convertible as before.

But if the affirmative premiss is apodeictic, the conclusion will not be apodeictic. (1) Let A necessarily apply to all B, and let it merely apply to no C. Then by the conversion of the negative statement we get the first figure; and it has been proved in the first figure that if the negative major premiss is not apodeictic, the conclusion will not be apodeictic either. Therefore it will not be apodeictic in the present example.

(2) Further, if the conclusion is apodeictic, it follows that C necessarily does not apply to some A. For if B necessarily applies to no C, C will also necessarily apply to no B. But B must apply to some A, that is if A ex hypothesi must apply to all B. Therefore C necessarily does not apply to some A. There is, however, no reason why A should not be so taken that C may possibly apply to all of it.

(3) Further, it can be shown by taking examples of terms that the conclusion is necessary, not absolutely, but given certain conditions. E.g., let A be 'animal,' B 'man,' and C 'white'; and let the premisses be taken in the same way as before; for it is possible that 'animal' should apply to nothing that is white. Then 'man' too will apply to nothing that is white. But this will not be so of necessity, for a white man may come into being, but not so long as 'animal' applies to nothing that is white. Thus given these conditions the conclusion will be necessary; but it will not be absolutely necessary.

The same principle will obtain in the case of

a 30 a 23 ff.  b In 30 b 20.
ἈΡΙΣΤΟΤΕΛΕΣ

31 a

σμῶν. ὅταν μὲν γὰρ ἡ στερητικὴ πρότασις καθόλου τ' ἦ καὶ ἀναγκαία, καὶ τὸ συμπέρασμα ἔσται ἀναγκαῖον. ὅταν δὲ ἡ κατηγορικὴ καθόλου ἢ δὲ στερητικὴ κατὰ μέρος, οὐκ ἔσται τὸ συμπέρασμα ἀναγκαῖον. ἔστω δὴ πρῶτον ἡ στερητικὴ καθόλου τε καὶ ἀναγκαία, καὶ τὸ Α τῷ μὲν Β μηδενὲ ἐν- 

dεχέσθω ὑπάρχειν, τῷ δὲ Γ τινὶ ὑπάρχετω. ἐπεὶ οὖν ἀντιστρέφει τὸ στερητικὸν, οὔδε τὸ Β τῷ Α οὔδενι ἐνδεχομαι τὸν ὑπάρχειν τὸ δὲ γε Α τινὶ τῷ Γ 

ὑπάρχει. ὥστε ἐκ τῶν ὑπάρξεως τὸν Α τῷ Β οὐχ ὑπάρξει τῷ Β. πάλιν ἔστω ἡ κατηγορικὴ καθόλου τε καὶ ἀναγκαία, καὶ κείσθω πρὸς τῷ Β τὸ κατηγορικὸν- 

eί δὴ τὸ Α παντὶ τῷ Β ἐξ ἀνάγκης ὑπάρχει τῷ δὲ Γ τινὶ μὴ ὑπάρχει, ὅτι μὲν οὖν ὑπάρξει τῷ Β τινὶ τῷ Γ, φανερὸν, ἀλλ' οὖν ἐκ τῶν ἀνάγκης, οἱ γὰρ αὐτοὶ ὁροὶ ἐσονται πρὸς τὴν ἀπόδειξιν ὀφείλει τῶν καθόλου συλλογισμῶν.

'Αλλ' οὐδ'e ἐκ τὸ στερητικὸν ἀναγκαίον ἔστιν ἐν μέρει ληφθέν, οὐκ ἔσται τὸ συμπέρασμα ἀναγκαῖον-, διὰ γὰρ τῶν αὐτῶν ὧν ἡ ἀπόδειξις.

XI. Ἔν δὲ τῷ τελευταίῳ σχῆματι καθόλου μὲν ὅντων τῶν ὧν πρὸς τὸ μέσον καὶ κατηγορικῶν ἀμφοτέρων τῶν προτάσεων, ἐὰν ὅποτεροι ἐκ ἀναγκαίων, καὶ τὸ συμπέρασμα ἔσται ἀναγκαίων- ἐὰν δὲ τὸ μὲν ἡ στερητικὸν τὸ δὲ κατηγορικὸν, ὅταν μὲν τὸ στερητικὸν ἀναγκαίον ἢ, καὶ τὸ συμπέρασμα ἔσται ἀναγκαίον, ὅταν δὲ τὸ κατηγορικὸν, οὐκ ἔσται ἀναγκαίον.

'Εστώσαν γὰρ ἀμφότεραι κατηγορικαὶ πρῶτον αἱ προτάσεις, καὶ τὸ Α καὶ τὸ Β παντὶ τῷ Γ ὑπάρχειτω, ἀναγκαίον δ' ἔστω τὸ ΑΓ. ἐπεὶ οὖν τὸ Β παντὶ ὑπάρχει Α.
particular syllogisms. When the negative premiss is universal and apodeictic, the conclusion will also be apodeictic; but when the affirmative premiss is universal and the negative particular, the conclusion will not be apodeictic. First let the negative premiss be universal and necessary, and let it be impossible for A to apply to any B, but let A apply to some C. Then since the negative premiss is convertible, it is also impossible for B to apply to any A. But A applies to some C, and so B will necessarily not apply to some C.\(^a\) Again, let the affirmative premiss be universal and apodeictic, and let the affirmative premiss refer to B. Then if A necessarily applies to all B, and does not apply to some C, evidently B will not apply to some C; but this will not be so of necessity. The terms to demonstrate this will be the same as in the universal syllogisms.\(^b\)

Nor will the conclusion be apodeictic if the negative statement is apodeictic and particular. This may be demonstrated by means of the same terms.

XI. In the last figure, where the (extreme) terms are in a universal relation to the middle, and both premisses are affirmative, if either statement is apodeictic, the conclusion will also be apodeictic. If, however, one is negative and the other affirmative, when the negative is apodeictic, the conclusion will also be apodeictic;\(^c\) but when the affirmative is apodeictic, the conclusion will not be apodeictic.

First let both premisses be affirmative, and let both A and B apply to all C, and let the premiss AC be apodeictic. Then since B applies to all C, C will also

\(^a\) The proof breaks down, being dependent upon the syllogism in 30 a 21-23.

\(^b\) 30 b 33.

\(^c\) Actually none of these conclusions can be apodeictic; cf. 30 a 23 note.
τῷ Γ ὑπάρχει, καὶ τὸ Γ τοῖς τῷ Β υπάρξει διὰ τὸ ἀντιστρέφειν τὸ καθόλου τῷ κατὰ μέρος· ἀστὴρ ἐὰν παντὶ τῷ Γ τὸ Λ ἐξ ἀνάγκης ὑπάρξει καὶ τὸ Γ τῷ Β τοῖς, καὶ τῷ Β τοῖς ἀναγκαίον ὑπάρξειν τῷ Α· τὸ γὰρ Β ύπὸ τὸ Γ ἔστων. γίγνεται οὖν τὸ πρῶτον σχῆμα. ὁμοίως δὲ διεισθῆσται καὶ εἰ τὸ ΒΓ ἔστω ἀναγκαίον· ἀντιστρέφει γὰρ τὸ Γ τῷ Α τοῖς, ἀστὴρ ἐὰν παντὶ τῷ Γ τὸ Β ἐξ ἀνάγκης ὑπάρξει, καὶ τῷ Α τοῖς ὑπάρξει ἐξ ἀνάγκης.

Πάλιν ἔστω τὸ μὲν ΑΓ καταφατικόν, τὸ δὲ ΒΓ καταφατικόν, ἀναγκαίον δὲ τὸ στερητικόν. ἔπει οὖν ἀντιστρέφει τοῖς τῷ Β τῷ Γ, τὸ δὲ Α οὐδὲν τῷ Γ ἐξ ἀνάγκης, οὐδὲ τῷ Β τοῖς ὑπάρξει ἐξ ἀνάγκης τὸ Α· τὸ γὰρ Β ύπὸ τὸ Γ ἔστων. εἰ δὲ τὸ κατηγορικόν ἀναγκαίον, οὐκ ἐσται τὸ συμπέρασμα ἀναγκαίον. ἔστω γὰρ τὸ ΒΓ κατηγορικόν καὶ ἀναγκαίον, τὸ δὲ ΑΓ στερητικόν καὶ μὴ ἀναγκαίον. ἔπει οὖν ἀντιστρέφει τοῖς καταφατικόν, ὑπάρξει καὶ τῷ Γ τοῖς τῷ Β ἐξ ἀνάγκης, ἀστὴρ ἐὰν τὸ μὲν Α μηδενὶ τῶν Γ τὸ δὲ Γ τοῖς τῶν Β, τὸ Α τοῖς τῶν Β οὐχ ὑπάρξει· ἀλλ᾽ οὐκ ἐξ ἀνάγκης· δεδεικται γὰρ ἐν τῷ πρῶτῳ σχῆματι ὅτι τῆς στερητικῆς προτάσεως μὴ ἀναγκαίας οὐσίας οὐδὲ τὸ συμπέρασμα ἐσται ἀναγκαίον.

"Ετη καὶ διὰ τῶν ὅρων εἰς φανερόν. ἔστω γὰρ τὸ μὲν Α ἀγαθὸν, τὸ δὲ ἐφ᾽ ὑπὸ Ζ Ἵων, τὸ δὲ Γ ὕππος. τὸ μὲν οὖν ἀγαθὸν ἐνδεχεται μηδενὶ ὕππῳ ὑπάρχειν, τὸ δὲ Ἵων ἀνάγκη παντὶ ὑπάρχειν· ἀλλ᾽ οὐκ ἀνάγκη Ζ Ἵων τι μὴ εἶναι ἀγαθὸν, εἰπερ ἐν- δεχεται πᾶν εἶναι ἀγαθὸν. ἠ εἰ μὴ τούτῳ δυνατόν, ἀλλά τὸ ἑγρηγορέναι ἡ καθευδεὶς ὄρον θετέον· ἀπαν γὰρ Ἵων δεκτικόν τούτων.
apply to some B (because the universal converts with the particular); so that if A must apply to all C, and C applies to some B, A must also apply to some B; for B falls under C. Thus we get the first figure. The proof will be similar also if the premiss BC is apodeictic; for by conversion C applies to some A, so that if B necessarily applies to all C, it will also necessarily apply to some A.

Again, let AC be negative and BC affirmative, and let the negative premiss be apodeictic. Then since by conversion C applies to some B, and A necessarily applies to no C, A will also necessarily not apply to some B; for B falls under C. But if it is the affirmative premiss that is apodeictic, the conclusion will not be apodeictic. Let BC be affirmative and apodeictic, and AC be negative and assertoric. Then since the affirmative premiss is convertible, C will also necessarily apply to some B; so that if A applies to no C and C (necessarily) applies to some B, A will not apply to some B. But this will not be so of necessity; for it has been proved in the first figure that if the negative premiss is not apodeictic neither will the conclusion be apodeictic.

Further, this fact can be clearly shown by taking examples of terms. Let A be 'good,' B 'animal,' and C 'horse.' Then 'good' may apply to no horse, but 'animal' must apply to every horse. But it is not necessary that some animal should not be good, since every animal may be good. Or if this is not possible, let the term be taken as 'waking' or 'sleeping'; for every animal is receptive of these states.

The reference is presumably to 30 a 32.
Εἰ μὲν οὖν οἱ ὁροὶ καθόλου πρὸς τὸ μέσον εἰσίν, εἰρηταὶ πότε ἐσται τὸ συμπέρασμα ἀναγκαῖον· εἰ δ’ ὁ μὲν καθόλου ὁ δ’ ἐν μέρει, κατηγορικῶν μὲν ὄντων ἀμφοτέρων, ὅταν το καθόλου γενηται ἀναγ-καῖον, καὶ τὸ συμπέρασμα ἐσται ἀναγκαῖον. από-δειξις δ’ ἡ αὐτὴ ἡ καὶ πρὸτερον ἀντιστρέφει γάρ καὶ τὸ ἐν μέρει κατηγορικῶν. εἰ οὖν ἀνάγκη τὸ B παντὶ τῷ Γ υπάρχειν, τὸ δὲ A υπὸ τὸ Γ ἐστὶν, ἀνάγκη τὸ B τῳ ἀυτῷ τῷ A υπάρχειν· εἰ δὲ τὸ B τῳ A τῳ, καὶ τὸ A τῳ B τῳ ὑπάρχειν ἀναγκαῖον. αντιστρέφει γάρ· ὁμοίως δὲ καὶ εἰ τὸ AΓ εἰη ἀναγκαῖον καθόλου ὁν τὸ γάρ B υπὸ τὸ Γ ἐστὶν. Εἰ δὲ τὸ ἐν μέρει ἐστὶν ἀναγκαῖον, οὐκ ἐσται τὸ συμπέρασμα ἀναγκαῖον. ἐστὶ τὸ γάρ τὸ BΓ ἐν μέρει τε καὶ ἀναγκαῖον, τὸ δὲ A παντὶ τῷ Γ υπάρχετω, μη μέντοι εξ ἀνάγκης· ἀντιστραφεῖτος οὖν τοῦ BΓ τὸ πρῶτον γίγνεται σχῆμα, καὶ ἡ μὲν καθόλου πρότασις οὐκ ἀναγκαῖα, ἡ δ’ ἐν μέρει ἀναγκαία. οτε δ’ οὔτως ἔχουεν αἱ προτάσεις, οὐκ ἦν τὸ συμπέρασμα ἀναγκαῖον· ὁστ’ οὐδ’ ἐπὶ τοῦ-των. ἐτὶ δὲ καὶ ἐκ τῶν ὅρων φανερον. ἐστὶ τὸ μὲν A ἐγρήγορος, τὸ δὲ B δίπου, ἐφ’ ὦ δὲ τὸ Γ ζῶν· τὸ μὲν οὖν B τῳ τῷ A ἀνάγκη ὑπάρχειν, τὸ δὲ A τῷ Γ εἰνδέχεται, καὶ τὸ A τῷ B οὐκ ἀναγκαῖον· οὐ γάρ ἀνάγκη δίπου τι καθεύδειν ἡ ἐγρηγορεῖν. ὁμοίως δὲ καὶ διὰ τῶν αὐτῶν ὅρων δειχθήσεται καὶ εἰ τὸ AΓ εἰη ἐν μέρει τε καὶ ἀναγκαῖον. Εἰ δ’ ὁ μὲν κατηγορικὸς ὁ δὲ στερητικὸς τῶν

— 31 a 24 ff.; it is of course equally invalid.
— i.e. C applies to all A; which by conversion gives the relation ‘A applies to some C.’
Thus we have stated in what circumstances the conclusion will be apodeictic if the extreme terms are in a universal relation to the middle. But if one term is in a universal and the other in a particular relation, both premisses being affirmative, when the universal relation is apodeictic, the conclusion will also be apodeictic. The proof is the same as before; for the affirmative particular premiss is also convertible. Thus if B must apply to all C, and A falls under C, B must apply to some A. And if B must apply to some A, A must also apply to some B; for the premiss is convertible. Similarly too supposing that the premiss AC is apodeictic and universal; for B falls under C.

If, however, it is the particular premiss that is apodeictic, the conclusion will not be apodeictic. Let BC be particular and apodeictic, and let A apply to all C, but not of necessity. Then by the conversion of BC we get the first figure, and the universal premiss is not apodeictic, but the particular is. Now we saw that whenever the premisses are thus related the conclusion is not apodeictic; and so neither will it be so in the present case. Further, this fact can be clearly shown by taking examples of terms. Let A be 'waking,' and B 'biped,' and C 'animal.' Then B must apply to some C, and A may apply to C, but A does not necessarily apply to B; for it is not necessary that a particular biped should be asleep or awake. The proof can be effected similarly by means of the same terms supposing AC to be particular and apodeictic.

If, however, one of the terms is positive and the

\( ^{(b)} \) Particular syllogisms.
τὴ ὅρων, ὅταν μὲν ἦ τὸ καθόλου στερητικὸν τε καὶ ἀναγκαῖον, καὶ τὸ συμπέρασμα ἐσται ἀναγκαῖον·
εἰ γὰρ τὸ Α τῷ Γ μηδενὶ ἐνδέχεται, τὸ δὲ Β τῷ τῷ ὑπάρχει, τὸ Α τῷ τῷ Β ἀνάγκη μη ὑπάρχειν.
ὅταν δὲ τὸ καταφατικὸν ἀναγκαῖον τεθῇ, ἢ καθόλου οὖν ἢ ἐν μέρει, ἢ τὸ στερητικὸν κατὰ μέρος, οὐκ ἐσται τὸ συμπέρασμα ἀναγκαῖον. τὰ μὲν γὰρ ἅλλα ταῦτα ἢ καὶ ἐπὶ τῶν προτέρων ἐροῦμεν, ὥστε δὲ ὅταν μὲν ἢ τὸ καθόλου κατηγορικὸν ἀναγκαῖον,

εὐρήγορος· ἦ αὐτῷ δὲ ἐν μέρει τὸ κατηγορικὸν ἀναγκαῖον, ἐγρήγορος· ἦ λευκὸν (ἵνα μὲν γὰρ ἀνάγκη τινὶ λευκῷ ὑπάρχειν, ἐγρήγορος δὲ ἐνδέχεται μηδενὶ,
καὶ οὐκ ἀνάγκη τινὶ ἦ λευκῷ ὑπάρχειν ἐγρήγοροι), ὅταν δὲ τὸ στερητικὸν ἐν μέρει οὖν ἀναγκαῖον ἢ, δίπουν· κινούμενον· ἦ λευκῷ μέσον.

ΧΙΙ. Φανερὸν οὖν ὅτι τὸ μὲν ἦν ὑπάρχον οὐκ ἦν συλλογισμὸς εὰν μὴ ἀμφότεραι ὑπάρχον αἱ προτάσεις ἐν τῷ ὑπάρχειν, τοῦ δὲ ἀναγκαῖον ἐστὶ καὶ τῆς ἑτέρας μόνον ἀναγκαίας οὐσῆς. ἐν ἀμφότεροι δὲ,
καὶ καταφατικῶν καὶ στερητικῶν ὅτων τῶν συλλογισμῶν, ἀνάγκη τὴν ἑτέραν πρότασιν ὀμοίαν εἶναι τῷ συμπεράσματι (λέγω δὲ τὸ ὀμοίαν, εἰ μὲν ὑπάρχον, ὑπάρχουσαν, εἰ δὲ ἀναγκαῖον, ἀναγκαῖον).

Ἀτὸ καὶ τοῦτο δὴ ὅτι οὐκ ἔσται τῷ συμπεράσματι ὅτι ἀναγκαίον οὖθ᾽ ὑπάρχον εἶναι μὴ ληφθείσης ἀναγκαίας ἢ ὑπαρχοῦσης προτάσεως.

Περὶ μὲν οὖν τοῦ ἀναγκαίου, πῶς γίγνεται καὶ

1 ἦ λευκῷ μέσον δὲ, Waitz, ita (sed ἦ λευκῷ in litura) B: δίπου, 
μέσον ἦ λευκῷ Ad: δίπου μέσον n: μέσον ἦ λευκό C, Bekker: 
om. u.

Cf. 31 a 37 ff., b 20 ff.

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other negative, when the universal premiss is negative and apodeictic, the conclusion will also be apodeictic; for if it is impossible for A to apply to any C, and B applies to some C, A necessarily does not apply to some B. But when the affirmative premiss, whether universal or particular, or the negative particular premiss, is apodeictic, the conclusion will not be apodeictic. The rest of the proof will be the same as before, and the terms will be (1) when the universal affirmative premiss is apodeictic, waking—animal—man (man being the middle term); (2) when the affirmative apodeictic premiss is particular, waking—animal—white (for 'animal' must apply to something white, but 'waking' may apply to nothing white, and it is not necessary that 'waking' should not apply to some particular animal); (3) when the negative particular premiss is apodeictic, biped—moving—animal (animal being the middle term).

XII. It is evident, then, that whereas there is no assertoric syllogism unless both premisses are in the assertoric mode, there is an apodeictic syllogism even if only one of the premisses is apodeictic. But in both cases, whether the syllogisms are affirmative or negative, one of the premisses must be similar to the conclusion. By 'similar' I mean that if the conclusion is assertoric the premiss must be assertoric, and if the conclusion is apodeictic the premiss must be apodeictic. Hence this also is clear: that it will not be possible for the conclusion to be either apodeictic or assertoric unless a premiss is taken as apodeictic or assertoric.

With regard, then, to the apodeictic mode of syllogism, how it is obtained and in what respect it

* On this fallacy see 30 a 23 note.
τίνα διαφορὰν ἔχει πρὸς τὸ ὑπάρχον, εἰτηται σχεδὸν ἰκανοῖς. XIII. περὶ δὲ τοῦ ἐνδεχομένου μετὰ ταῦτα λέγομεν πότε καὶ πῶς καὶ διὰ τῶν ἑσται συλλογισμὸς. λέγω δὲ ἐνδεχεσθαι καὶ τὸ ἐνδεχόμενον, οὕτως ἀναγκαίον τεθέντος δὲ ὑπάρχειν, οὐδὲν ἐσται διὰ τοῦτο ἀδύνατον (τὸ γὰρ ἀναγκαῖον ὁμωνύμως ἐνδεχεσθαι λέγομεν). ὅτι δὲ τοῦτο ἐστι τὸ ἐνδεχόμενον, φανερὸν ἐκ τῶν ἀποφάσεων καὶ τῶν καταφάσεων τῶν ἀντικειμένων τὸ γὰρ οὐκ ἐνδέχεται ὑπάρχειν καὶ ἀδύνατον ὑπάρχειν καὶ ἀνάγκη μὴ ὑπάρχειν ἢ ταύτα ἐστιν τῇ ἀκολουθεῖ ἄλληλοις, ὡστε καὶ τὰ ἀντικειμένα τούτων, τὸ ἐνδέχεται ὑπάρχειν καὶ οὐκ ἀδύνατον ὑπάρχειν καὶ οὐκ ἀνάγκη μὴ ὑπάρχειν, ἢ ταύτα ἐστιν ἢ ἀκολουθοῦντα ἄλληλοις· κατὰ παντὸς γὰρ ἢ φάσις ἢ ἢ ἀπόφασις ἐστιν. ἐσται ἂρα τὸ ἐνδεχόμενον οὐκ ἀναγκαῖον καὶ τὸ μὴ ἀναγκαῖον ἐνδεχόμενον.

20 Συμβαίνει δὲ πάσας τὰς κατὰ τὸ ἐνδέχεσθαι προτάσεις ἀντιστρέφειν ἄλληλαις. λέγω δὲ οὕτως καταφατικὰς ταῖς ἀποφατικαῖς, ἄλλος δὲ καταφατικόν ἐχουσί τὸ σχῆμα κατὰ τὴν ἀντίθεσιν, οἷον τὸ ἐνδεχεσθαι ὑπάρχειν τῷ ἐνδεχεσθαι μὴ ὑπάρχειν, καὶ τὸ παντὶ ἐνδεχεσθαι τῷ ἐνδεχεσθαι μηδενι καὶ μὴ παντὶ, καὶ τοῦ τῷ μὴ τινὶ τῶν αὐτῶν δὲ τρόπον καὶ ἐπὶ τῶν ἄλλων. ἐπεὶ γὰρ τὸ ἐνδεχό-

1 φάσις AB: κατάφασις.

*Cf. 25 a 37.

* This is not proved by the preceding argument. It is indeed implied there that unless ἀναγκαῖον ὑπάρχει it cannot be equivalent to ὑπάρχει. But one would expect explicit proof of so important a point, and I am therefore disposed to agree with Becker 254.
differs from the assertoric, we have given, broadly speaking, a sufficient account. XIII. Next we shall state with regard to the possible, when and in what sense and by what means we shall get a syllogism. I call a thing possible if when, not being necessary, it is assumed to be true, no impossibility will thereby be involved. \( \langle \text{I say 'not being necessary'} \rangle \) because we apply the term 'possible' equivocally to that which is necessary.\(^a\) That this is the meaning of the expression 'to be possible' is evident if we consider the contradictory negations and affirmations. For 'it is not possible that it should apply' and 'it cannot apply' and 'it is necessary that it should not apply' are either the same or imply one another; and so their contradictories, 'it is possible that it should apply' and 'it can apply' and 'it is not necessary that it should not apply' are either the same or imply one another; for either the assertion or the negation is predicated of every subject. That which is possible, then, will not be necessary; and that which is not necessary will be possible.\(^b\)

It follows that all problematic premisses are convertible with one another. I mean, not that the affirmative are convertible with the negative, but that all which have an affirmative form are convertible with their opposites: e.g., 'to be possible to apply' with 'to be possible not to apply' and 'to be possible to apply to all' with 'to be possible to apply to none' or 'not to apply to all'; and 'to be possible to apply to some' with 'to be possible not to apply to some'; and similarly in the remaining cases. For

\( \text{(A.T.M. 11-13)} \) that the 'argument' is the addition of a well-meaning pupil. Maier (\textit{Syllogistik des Aristoteles}, II. i. 139-140) seems to evade the difficulty.

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32 a menon ouk eiston anaykaion, to de mu anaykaion egechreis mou uparcheis, faneron oti eis evdeketai to A tw B uparcheis, evdeketai kai mou uparcheis kai 40 eis panti evdeketai uparcheis, kai panti evdeketai mou uparcheis. omoiws de kapi twv en merei katafaseis. after' ai toiauta protaseis katagorikai kai ou stereitikai' to gar evdekesai tw elai omoiws tattetai, kathaper elycheta proteron.

5 Diwrisomenon de toitow palin legomev oti to evdekesai kata duo legetai tropous, eva men to ws epi to polu ginvesai kai dialeipewn to anaykaion, olon to poliovsouan anthrapon he to auza vnesai he phivei, he olws to pefukos uparchew (touto gar ou synexes men exe to anaykaion di to mu' aie elai anthrapon, ontos menvon anthrapon he ex anakh he ws epi to polu eiston), allon de to aoristhon, de kai outw kai mu' outwv dynaton, olon to badizei zoon he to badiizontos genesai seismon, he olws to apo tuchis xignomon oudein gar mallon 10 outwv pefukeni he evantioi. antistrofei men ouv kai kata tas antikeimena protaseis ekateron twv evdekoimewn, ou mu' ton auton ge tropon, alla to men pefukos elai tw mou he ex anakh uparcheis (outw gar evdeketai mou poliovsou anthrapon), to de' aoristhon tw moudev mallon outw he ekeinws.

25 b 21.

The distinction is not clearly expressed, and has nothing to do with necessity. In the former sense the possible is probable but not necessary, and its opposite is therefore improbable but not impossible. In the latter sense the possible is neither necessary nor more probable than its opposite. See Introd. p. 191.

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since the possible is not necessary, and that which is not necessary may not apply, it is evident that if it is possible for A to apply to B, it is also possible for it not to apply; and if it is possible for it to apply to all B, it is also possible for it not to apply to all. Similarly too in the case of particular affirmations; for the same proof obtains. Such premisses are affirmative, not negative; for the senses of 'to be possible' correspond to those of 'to be,' as has been already stated.a

Having made these distinctions clear, we may further remark that the expression 'to be possible' is used in two senses: (1) to describe what generally happens but falls short of being necessary, e.g., a man's becoming grey-haired or growing or wasting away, or in general that which is naturally applicable to a subject (for such an attribute has no continuous necessity, because a man does not always exist; but so long as a man exists the attribute applies to him either of necessity or as a general rule); and (2) to describe the indeterminate, which is capable of happening both in a given way and otherwise: e.g., the walking of an animal, or the happening of an earthquake while it is walking, or in general a chance occurrence; for it is no more natural that such a thing should happen in one way than in the opposite way. The possible in each of these two senses, then, is convertible with its opposite premiss; not, however, in the same way. That which is naturally so converts because it does not necessarily apply (for it is in this sense that it is possible for a man not to become grey-haired); but the indeterminate converts because it happens no more in one way than in another.\(^b\)
ἘΠΙΣΤΗΜΗ ΔΕ ΚΑΙ ΣΥΛΛΟΓΙΣΜΟΣ ΑΠΟΔΕΙΚΤΙΚΟΣ ΤΩΝ ΜΕΝ ΑΟΡΙΣΤΩΝ ΟΥΚ ΕΣΤΙ ΔΙΑ ΤΟ ΆΤΑΚΤΟΝ ΕΙΝΑΙ ΤΟ ΜΕΣΟΝ, ΤΩΝ ΔΕ ΠΕΦΥΚΩΤΩΝ ΕΣΤΙ, ΚΑΙ ΣΧΕΔΟΝ ΟΙ ΛΟΓΟΙ ΚΑΙ ΑΙ ΣΚΕΦΕΙΣ ΓΙΓΝΟΝΤΑΙ ΠΕΡΙ ΤΩΝ ΟΥΤΩΣ ΕΝΔΕΧΟΜΕΝΩΝ. ΕΚΕΙΝΩΝ ΔΕ ΕΓΧΩΡΕΙ ΜΕΝ ΓΕΝΙΣΘΑΙ ΣΥΛΛΟΓΙΣΜΟΝ, ΟΥ ΜΗΝ ΕΙΩΘΕ ΓΕ ΖΗΤΕΙΣΘΑΙ.

ΤΑῦΤΑ ΜΕΝ ΟΥΝ ΔΙΟΡΙΘΗΣΕΤΑΙ ΜΑΛΛΟΝ ΕΝ ΤΟΙΣ ΕΠΟΜΕΝΟΙΣ. ΒΩΝ ΔΕ ΛΕΓΟΜΕΝ ΠΟΤΕ ΚΑΙ ΤΙΣ ΕΣΤΑΙ ΣΥΛΛΟΓΙΣΜΟΣ ΕΚ ΤΩΝ ΕΝΔΕΧΟΜΕΝΩΝ ΠΡΟΤΑΣΕΩΝ.

ἘΠΕΙ ΔΕ ΤΟ ΕΝΔΕΧΕΣΘΑΙ ΤΟΔΕ ΤΙΔΕ ΥΠΑΡΧΕΙΝ ΔΙΧΩΣ ΕΣΤΙΝ ΕΚΛΑΒΕΙΝ. Η ΓΑΡ ΨΥΠΑΡΧΕΙ ΤΟΔΕ ΨΕ ΕΝΔΕΧΕΤΑΙ ΑΥΤΟ ΥΠΑΡΧΕΙΝ (ΤΟ ΓΑΡ ΚΑΘ ΟΥ ΤΟ Β ΤΟ Α ΕΝΔΕΧΕΣΘΑΙ ΤΟΥΤΩΝ ΟΡΜΑΙΝΕΙ ΘΑΤΕΡΟΝ, Η ΚΑΘ ΟΥ ΛΕΓΕΤΑΙ ΤΟ Β ΖΑΘ ΟΥ ΕΝΔΕΧΕΤΑΙ ΛΕΓΕΣΘΑΙ, ΤΟ ΔΕ ΚΑΘ ΟΥ ΤΟ Β ΤΟ Α ΕΝΔΕΧΕΣΘΑΙ ΖΑ ΠΑΝΤΙ ΤΙΨ Β ΤΟ Α ΕΓΧΩΡΕΙΝ ΟΥΔΕΝ ΔΙΑΦΕΡΕΙΝ). ΦΑΝΕΡΟΝ ΤΙΙ ΔΙΧΩΣ ΑΝ ΛΕΓΟΙΤΟ ΤΟ Α ΤΙΨ Β ΠΑΝΤΙ ΕΝΔΕΧΕΣΘΑΙ ΥΠΑΡΧΕΙΝ. ΠΡΩΤΟΝ ΟΥΝ ΕΙΠΩΜΕΝ, ΕΙ ΚΑΘ ΟΥ ΤΟ Γ ΤΟ Β ΕΝΔΕΧΕΤΑΙ, ΚΑΙ ΚΑΘ ΟΥ ΤΟ Β ΤΟ Α, ΤΙΣ ΕΣΤΑΙ ΚΑΙ ΠΟΙΟΣ ΣΥΛΛΟΓΙΣΜΟΣ ΟΥΤΩ ΓΑΡ ΑΙ ΠΡΟΤΑΣΕΙΣ ΑΜΦΟΓΕ 35 ΤΕΡΑΙ ΛΑΜΒΑΝΟΝΤΑΙ ΚΑΤΑ ΤΟ ΕΝΔΕΧΕΣΘΑΙ, ΟΤΑΝ ΔΕ


*b* There is no obvious fulfilment of this promise. Jenkinson refers to *An. Post.* I. viii.

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There is no scientific knowledge or demonstrative syllogism of indeterminate propositions, because the middle term $a$ is not established; but there are both in the case of propositions which are naturally applicable, and, speaking broadly, it is with propositions which are possible in this sense that all discussions and inquiries are concerned. There can be a syllogism of those which are possible in the other sense, but it is not usually required.

These distinctions shall receive fuller treatment later. Our present concern is to state in what circumstances a syllogism can be drawn from problematic premisses, and what the nature of the syllogism will be.

Since the statement that it is possible for one term to apply to another can be taken in two different senses, viz., either that it may apply to a subject to which the other term applies, or that it may apply to a subject to which the other term may apply (for the statement that $A$ may be predicated of that of which $B$ is predicated means one of two things: either that it may be predicated of the subject of which $B$ is predicated, or that it may be predicated of the subject of which $B$ may be predicated; and the statement that $A$ may be predicated of the subject of which $B$ is predicated differs in no way from the statement that $A$ may apply to all $B$); it is evident that there are two senses in which it can be said that $A$ may apply to all $B$. First, then, let us state what and of what kind the syllogism will be if $B$ may be predicated of the subject of which $C$ may be predicated, and $A$ may be predicated of the subject of which $B$ may be predicated, for in this type both premisses are problematic; but when $A$ may be
καθ' οὗ τὸ Β ύπάρχει τὸ Α ἐνδέχεται, ἢ μὲν ύπάρχουσα ἢ δ' ἐνδεχομένη· ὥστε ἀπὸ τῶν ὁμοιοσχήμων ἀρκτέον, καθάπερ καὶ ἐν τοῖς ἄλλοις.

XIV. Ὅταν οὖν τὸ Α παντὶ τῷ Β ἐνδέχεται καὶ τὸ Β παντὶ τῷ Γ, συνλογισμὸς ἔσται τελειός ὅτι τὸ Α παντὶ τῷ Γ ἐνδέχεται ύπάρχειν. τούτῳ δὲ φανερὸν ἐκ τοῦ ὁρισμοῦ· τὸ γὰρ ἐνδέχεσθαι παντὶ ύπάρχειν οὕτως εἰλέγομεν. ὡστε δὲ καὶ εἰ τὸ μὲν Α ἐνδέχεται μηδενεὶ τῷ Β τὸ δὲ Β παντὶ τῷ Γ, ὅτι τὸ Α ἐνδέχεται μηδενεὶ τῷ Γ· τὸ γὰρ καθ' οὗ τὸ Β ἐνδέχεται τὸ Α μὴ ἐνδέχεσθαι τούτ' ἤν, τὸ μηδενὲ ἀπολείπειν τῶν ύπὸ τὸ Β ἐνδεχομένων.

"Ὅταν δὲ τὸ Α παντὶ τῷ Β ἐνδέχεται τὸ δὲ Β ἐνδέχεται μηδενεὶ τῷ Γ, διὰ μὲν τῶν ἐνδεχομένων προτάσεων οὕτως γίγνεται συνλογισμός, ἀντιστροφέσης δὲ τῆς ΒΓ κατὰ τὸ ἐνδέχεσθαι γίγνεται ὁ αὐτὸς ὁσπέρ πρότερον. ἐπεὶ γὰρ ἐνδέχεται τὸ Β μηδενεὶ τῷ Γ ύπάρχειν, ἐνδέχεται καὶ παντὶ ύπάρχειν (τούτῳ δ' εἰρηται πρότερον), ὡστε εἰ τὸ μὲν Β παντὶ τῷ Γ τὸ δ' Α παντὶ τῷ Β, πάλιν ὁ αὐτὸς γίγνεται συνλογισμός. ὡστε δὲ καὶ εἰ πρὸς ἀμφοτέρας τὰς προτάσεις ἢ ἀπόφασις τεθεῖ, ἐπεὶ γὰρ τὸ ἐνδέχεσθαι· λέγω δ' οἶον εἰ τὸ Α ἐνδέχεται μηδενεὶ τῶν Β καὶ τὸ Β μηδενεὶ τῶν Γ· διὰ μὲν γὰρ τῶν εὐθεμένων προτάσεων οὕτως γίγνεται συνλογισμός, ἀντιστροφομένων δὲ πάλιν ὁ αὐτὸς ἐσται ὡς καὶ πρότερον. φανερὸν οὖν ὅτι τῆς ἀποφάσεως τιθεμένης πρὸς τὸ ἐλαττὸν ἄκρον ἢ πρὸς ἀμφοτέρας τὰς προτάσεις ἢ οὐ γίγνεται συνλογισμός ἢ γίγνεται μὲν ἄλλο οὐ τελειός· ἐκ γὰρ τῆς ἀντιστροφῆς γίγνεται τὸ ἀναγκαῖον.

1 ὁμοιοσχήμων Α'.
predicated of the subject of which B is predicated, one premiss is problematic and the other assertoric. Let us, then, begin with the type whose premisses are similar in quality, as in the other examples.

XIV. When A may apply to all B, and B to all C, there will be a perfect syllogism to the effect that A may apply to all C. This is evident from the definition; for we said\(^a\) that ‘to be possible to apply to all’ has this meaning. Similarly also if A may apply to no B, and B may apply to all C, there will be a syllogism to the effect that A may apply to no C; for we saw\(^b\) that the proposition that A may not be predicated of the subject of which B may be predicated means that none of the possibilities which fall under the term B is wanting.

When, however, A may apply to all B and B may apply to no C, we get no syllogism by means of the premisses so taken; but when the premiss BC is converted in respect of possibility, we get the same syllogism as before.\(^c\) For since B may apply to no C, it may also apply to all C (this has been stated above); and so if B may apply to all C and A may apply to all B, we get the same syllogism again. Similarly also supposing the negative sense to refer to both premisses in conjunction with the sense of possibility. I mean, e.g., if A may apply to no B, and B to no C; for we get no syllogism by means of the premisses so taken, but on their conversion we shall have once again the same syllogism as before. Thus it is evident that if the negative refers to the minor term or to both the premisses we either get no syllogism, or get a syllogism which is not perfect; for the necessary conclusion depends upon the conversion.

\(^a\) 32 b 25 ff. \(^b\) 32 b 38-40. \(^c\) 32 a 29 ff.
Ἐὰν δ᾽ ἡ μὲν καθόλου τῶν προτάσεων ἢ δ᾽ ἐν μέρει ληφθῇ, πρὸς μὲν τὸ μείζον ἀκρον κειμένης τῆς καθόλου συλλογισμός ἐσται τελείος. εἰ γὰρ τὸ Α παντὶ τῷ Β ἐνδέχεται τὸ δὲ Β τινὶ τῷ Γ, τὸ Α τινὶ τῷ Γ ἐνδέχεται τοῦτο δὲ φανερὸν ἐκ τοῦ ορισμοῦ τοῦ ἐνδέχεσθαι παντὶ. πάλιν εἴ τὸ Α ἐνδέχεται μιθὲν τῷ Β τὸ δὲ Β τινὶ τῶν ιπτεράρχεων, ἀνάγκη τὸ Α ἐνδέχεσθαι των τῶν ιπτεράρχεων ἀπόδειξις δ᾽ ἡ αὐτή. εὰν δὲ στερητικὴ ληφθῇ ἣ ἐν μέρει προτάσις ἢ δὲ καθόλου καταφατικῆ, τῇ δὲ θέσῃ ὀμοιώς ἔχωσιν—οἷον τὸ μὲν A παντὶ τῷ Β ἐνδέχεται τὸ δὲ Β τινὶ τῷ Γ ἐνδέχεται μὴ ὑπάρχειν—διὰ μὲν τῶν εἰλημμενῶν προτάσεων οὐ γίγνεται φανερὸς συλλογισμός, ἀντι-στραφείς δὲ τῆς ἐν μέρει καὶ τεθέντως τοῦ Β τινὶ τῷ Γ ἐνδέχεσθαι ὑπάρχειν τὸ αὐτὸ ἐσται συμπέρασμα δ καὶ πρότερον, καθάπερ ἐν τοῖς έξ ἀρχῆς.

Ἐὰν δ᾽ ἡ πρὸς τὸ μείζον ἀκρον ἐν μέρει ληφθῇ ἡ δὲ πρὸς τὸ ἔλαττον καθόλου, εὰν τ᾽ ἀμφότεραι καταφατικαὶ τεθῶσιν ἐάν τε στερητικαὶ ἐὰν τε μὴ ὀμοιοσχήμονες εὰν τ᾽ ἀμφότεραι ἀδιόριστοι ἡ κατὰ μέρος, ὀδυμᾶς ἐσται συλλογισμός· οὔδεν γὰρ κωλύει τὸ Β ύπερτείνειν τοῦ Α καὶ μὴ κατηγορεῖ· σθαί εἴπ′ ἵπτους· ὅ δ᾽ ὑπερτείνει τὸ Β τοῦ Α, εἰλήφθωσι

τὸ Γ· τούτω γὰρ οὔτε παντὶ οὔτε μιθὲν οὔτε τινὶ οὔτε μὴ τινὶ ἐνδέχεται τὸ Α υπάρχειν, εἰπὲ ἀντι-στρέφοιην αὐτὰ κατὰ τὸ ἐνδέχεσθαι προτάσεις καὶ τὸ Β πλεῖσιν ἐνδέχεται ἢ τὸ Α υπάρχειν. ἔτι δὲ καὶ έκ τῶν ὀρῶν φανερῶν· οὔτω γὰρ ἔχουσίν

1 panti (deleto, quod cet. omnes fere habent codd., αβτ) B: om. Bekker.
If one of the premisses is taken as universal and the other as particular, when the major premiss is universal there will be a perfect syllogism. For if $A$ may apply to all $B$, and $B$ to some $C$, $A$ may apply to some $C$. This is evident from the definition of 'to be possible to apply to all.' Again, if $A$ may apply to no $B$, and $B$ may apply to some $C$, it necessarily follows that $A$ may not apply to some $C$. The proof is the same as before. But if the particular premiss is negative and the universal affirmative, the premisses being in the same relation as before—i.e., if $A$ may apply to all $B$, and $B$ may not apply to some $C$—, we get no obvious syllogism by means of the premisses so taken, but when the particular premiss is converted, i.e., when $B$ is taken as possibly applying to some $C$, we shall have the same conclusion as before, just as in the first examples.

If the major premiss is particular and the minor universal, whether they are both taken as affirmative, or both as negative, or as dissimilar in form; or if both are taken as indefinite or particular; in none of these cases will there be a syllogism. For there is nothing to prevent the term $B$ from having a wider extension than the term $A$, and not being coterminous with it in predication. Let $C$ represent the difference in extension between $B$ and $A$. (Then there will be nosyllogism,) for it is not possible that $A$ should either apply to all or apply to none or apply to some or not apply to some of $C$; that is, if the problematic premisses are convertible and $B$ may apply to more subjects than those to which $A$ may apply. Further, this fact can be clearly shown by taking examples of terms; for the premisses are related in this way both

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\[32b\ 25ff.\] \[l.\ 24.\] \[32b\ 5-17.\]
τῶν προτάσεων τὸ πρῶτον τῷ ἐσχάτῳ καὶ οὐδενὶ ἐνδέχεται καὶ παντὶ ὑπάρχειν ἀναγκαίον. ὥστε δὲ κοινοὶ πάντων τοῦ μὲν ὑπάρχειν ἐξ ἀνάγκης ζῷον—λευκόν—ἀνθρωπός, τοῦ δὲ μὴ ἐνδέχεσθαι ζῷον—λευκόν—μιάτιον.

Φανερὸν οὖν τούτον τὸν τρόπον ἐχόντων τῶν ὀρών ὅτι οὐδεὶς γίγνεται συλλογισμός: ἡ γὰρ τοῦ ὑπάρχειν ἡ τοῦ ἐξ ἀνάγκης η τοῦ ἐνδέχεσθαι πᾶσι ἐστὶ συλλογισμός. τοῦ μὲν οὖν ὑπάρχειν καὶ τοῦ ἀναγκαίου φανερὸν ὅτι οὐκ ἐστιν, ὁ μὲν γὰρ καταφατικὸς ἀναφέρεται τῷ στερητικῷ, ὁ δὲ στερητικὸς τῷ καταφατικῷ: λείπεται δὴ τοῦ ἐνδέχεσθαι εἶναι τοῦτο δ' ἀδύνατον: δὲδεικται γὰρ ὅτι οὐτως ἐχόντων τῶν ὀρών καὶ παντὶ τῷ ἐσχάτῳ τὸ πρῶτον ἀνάγκη καὶ οὐδενὶ ἐνδέχεσθαι ὑπάρχειν: ὥστ' οὐκ ἂν εἶν αἰ τοῦ ἐνδέχεσθαι συλλογισμός: τὸ γὰρ ἀναγκαίον οὐκ ἦν ἐνδεχόμενον.

Φανερὸν δὲ ὅτι καθόλου τῶν ὀρών οἰντων ἐν ταῖς ἐνδεχομέναις προτάσεσιν ἂεὶ γίγνεται συλλογισμός ἐν τῷ πρῶτῳ σχήματι, καὶ κατηγορικῶν καὶ στερητικῶν ὀντων, πλὴν κατηγορικῶν μὲν τέλειοι, στερητικῶν δὲ ἀτελῆς.

Δεῖ δὲ τὸ ἐνδέχεσθαι λαμβάνειν μὴ ἐν τοῖς ἀναγκαίοις, ἀλλὰ κατὰ τὸν εἰρημένον διορισμὸν ἐνίοτε δὲ λαμβάνει τὸ τοιούτον.

Ἐὰν δ' ἡ μὲν ὑπάρχειν ἡ δ' ἐνδέχεσθαι λαμβάνηται τῶν προτάσεων, ὅταν μὲν ἡ πρὸς τὸ μεῖζον ἄκρον ἐνδέχεσθαι σημαίνῃ, τέλειοι τ' ἔσονται πάντες οἱ συλλογισμοὶ καὶ τοῦ ἐνδέχεσθαι κατὰ τὸν εἰρημένον διορισμὸν, ὅταν δ' ἡ πρὸς τὸ...

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*a Since the premisses give contradictory conclusions, no inference of fact or necessity can be drawn from them.*

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when the first term cannot apply to any and when it must apply to all of the last. Examples of terms common to all cases where the first term must apply to the last are animal—white—man; where it cannot apply, animal—white—cloak.

Thus it is evident that when the terms are related in this way we get no syllogism; for every syllogism is either assertoric or apodeictic or problematic. Now evidently there is no assertoric or apodeictic syllogism in this case; for the affirmative is invalidated by the negative conclusion, and the negative by the affirmative. The remaining alternative, then, is that the syllogism should be problematic. But this is impossible; for it has been shown that the terms are related in this way both when the first must apply to all, and when it can apply to none, of the last. Thus there cannot be a problematic syllogism; for we have seen that that which is necessary is not possible.

It is also evident that when the terms in problematic premisses are universal, we always get a syllogism in the first figure, whether the terms are both positive or both negative; with the difference, however, that when they are positive the syllogism is perfect, and when they are negative it is imperfect.

The term 'possible' must be understood, not with reference to that which is necessary, but in accordance with the definition already given. Points of this kind are sometimes overlooked.

XV. If one of the premisses is assertoric and the other problematic, when it is the major premiss that expresses possibility, all the syllogisms will be perfect and will be of the 'possible' type in accordance with the definition of possibility given above; but

b 32 a 28.  e 32 a 18.  d 32 a 18.
πὰ ἔλαττον, ἀτελεῖς τε πάντες, καὶ οἱ στερητικοὶ τῶν
30 συλλογισμῶν οὐ τοῦ κατὰ τὸν διορισμὸν ἐνδεχο-
μένου, ἀλλὰ τοῦ μηδενὶ ἡ μη παντὶ ἡ ἀνάγκης
ὑπάρχειν· εἰ γὰρ μηδενὶ ἡ μη παντὶ ἡ ἀνάγκης,
ἐνδεχεσθαι φαμεν καὶ μηδενὶ καὶ μη παντὶ ὑπάρχειν.

Ἐνδεχέσθω γὰρ τὸ Α παντὶ τῷ Β, τὸ δὲ Β
παντὶ τῷ Γ κείσθω ὑπάρχειν· ἐπεὶ οὐν ὑπὸ τὸ Β
35 ἐστὶ τὸ Γ τῷ Β παντὶ ἐνδέχεται τὸ Α, φανερὸν
ὅτι καὶ τῷ Γ παντὶ ἐνδέχεται. γίγνεται δὴ τελείως
συλλογισμός. ὁμοίως δὲ καὶ στερητικῆς οὐσι
30 Τῆς ΑΒ προτάσεως τῆς δὲ ΒΓ καταφατικῆς,
καὶ τῆς μὲν ἐνδεχεσθαι τῆς δὲ ὑπάρχειν λαμ-
34 βανουης, τελείως συλλογισμοὺς ὅτι τὸ Α ἐνδέχεται
40 μηδενὶ τῷ Γ ὑπάρχειν.

34 a Ὄτι μὲν οὖν τοῦ ὑπάρχειν τιθεμένου πρὸς τὸ
ἐλαττὸν ἄκρον τελείων γίγνονται συλλογισμοί,
φανερὸν· ὅτι δ᾽ ἐναντίως ἔχοιτο ἐσονται συλ-
λογισμοί διὰ τοῦ ἀδυνάτου δεικτέον· ἀμα δ᾽ ἐσται
ὁμοίου καὶ ὅτι ἀτελεῖς· ἢ γὰρ δεῖξει οὐκ ἐκ τῶν
5 ἐιλημμένων προτάσεων.

Πρῶτον δὲ λεκτέον ὅτι εἰ τοῦ Α ὄντος ἀνάγκη
tὸ Β εἶναι, καὶ δυνατοῦ ὄντος τοῦ Α δυνατοῦ ἐσται
tὸ Β ἐξ ἀνάγκης. ἐστον γὰρ οὕτως ἔχοιτον τὸ
μὲν ἐφ᾽ ὃ τὸ Α δυνατὸν, τὸ δ᾽ ἐφ᾽ ὃ τὸ Β ἀδύ-
νατον. εἰ οὖν τὸ μὲν δυνατὸν, ὅτε δυνατὸν εἶναι,
10 γένοιτ' ἄν, τὸ δ᾽ ἀδύνατον, ὁτ' ἀδύνατον, οὐκ
ἀν γένοιτο, ἀμα δ᾽ εἰ τὸ Α δυνατὸν καὶ τὸ Β ἀδύνατον,
ἐνδεχοίτ' ἄν τὸ Α γενέσθαι ἄνευ τοῦ Β, εἰ δὲ

a This is a mistake on Aristotle's part; the qualification
applies equally to the affirmative syllogisms. It is due to
the fact that proof per impossibile cannot establish both
values of a problematic premiss. See note on 34 b 6.
b Cf. 25 a 37, 32 a 20.
when it is the minor premiss, they will all be imperfect, and such as are negative \(^a\) will not be 'possible' in accordance with the definition, but will be to the effect that the predicate does not necessarily apply to any, or to all, of the subject; for if it does not necessarily apply to any or to all, we say that it may apply to none or may not apply to all.\(^b\)

For example, let \(A\) possibly apply to all \(B\), and let it be assumed that \(B\) applies to all \(C\). Then since \(C\) falls under \(B\), and \(A\) may apply to all \(B\), evidently \(A\) may apply to all \(C\). Thus we get a perfect syllogism. Similarly too if the premiss \(AB\) is negative and \(BC\) affirmative, the former being problematic and the latter assertoric, there is a perfect syllogism to the effect that \(A\) may apply to no \(C\).

Thus it is evident that when the assertoric sense refers to the minor extreme we get perfect syllogisms; but to prove that syllogisms will result when it is in the opposite relation we must employ reduction \textit{ad impossibile}. At the same time it will also become apparent that these syllogisms will be imperfect; for the proof will not be drawn from the premisses originally assumed.

We must first observe that if when \(A\) is, \(B\) must be, then if \(A\) is possible, \(B\) must necessarily be possible.\(^c\) For assuming this relation \(^d\) between \(A\) and \(B\), let us suppose \(A\) to be possible and \(B\) impossible. Then (1) if the possible, when it is possible for it to be, may come to be, but the impossible, when it is impossible, cannot come to be; and also (2) if \(A\) is possible and \(B\) impossible, then it may be possible for \(A\) to come to be apart from \(B\); and if

\(^a\) Cf. \textit{Metaphysics}, IX. (\(\Theta\)) 1047 b 14-30.
\(^b\) \textit{Major problematic, minor assertoric.}
\(^c\) i.e. that \(A\) implies \(B\).
γενέσθαι, καὶ εἶναι τὸ γὰρ γεγονός, ὅτε γέγονεν, ἔστιν. δεὶ δὲ λαμβάνειν μὴ μόνον ἐν τῇ γενέσει τὸ ἀδύνατον καὶ δυνατόν, ἀλλὰ καὶ ἐν τῷ ἀληθεύσθαι καὶ ἐν τῷ ὑπάρχειν, καὶ ὁσαχῶς ἄλλως λέγεται τὸ δυνατὸν· ἐν ἀπασί γὰρ ὄμοιως ἔξει. ἐτὶ τὸ ὄντος τοῦ Α τὸ Β εἶναι οὐκ ὡς ἐνὸς τινος ὄντος τοῦ Α τὸ Β ἐσται δεὶ υπολαβεῖν· οὐ γὰρ ἐστὶν οὐδεὶς ἐξ ἀνάγκης ἐνός τινος ὄντος, ἀλλὰ δυνατά ἐλαχιστοί, οἶον ὅταν αἱ προτάσεις οὕτως ἔχωσιν ὡς ἐλέγθη κατὰ τὸν συλλογισμὸν· εἰ γὰρ τὸ Γ κατὰ τοῦ Δ τὸ δὲ Δ κατὰ τοῦ Ζ, καὶ τὸ Γ κατὰ τοῦ Ζ εἰς ἀνάγκης· καὶ εἰ δυνατὸν δ’ ἐκάπετον, καὶ τὸ συμπέρασμα δυνατὸν. ἔσται δὲς ἐν τῷ μὲν Α τὰς προτάσεις τὸ τὸ Β τὸ συμπέρασμα, συμβαίνοι ἂν οὐ μόνον ἀναγκαῖον τοῦ Α ὄντος καὶ τὸ Β εἶναι ἀναγκαῖον, ἀλλὰ καὶ δυνατὸν δυνατὸν.

25 Τούτου δὲ δειγμένος φανερὸν ὅτι ψεύδοσι υποτεθέντος καὶ μὴ ἀδύνατον καὶ τὸ συμβαίνον διὰ τὴν ύπόθεσιν ψεύδος ἐσται καὶ οὐκ ἀδύνατον. οἶον εἰ τὸ Α ψεύδος μὲν ἐστὶ μὴ μέντοι ἀδύνατον, ὄντος δὲ τοῦ Α τὸ Β ἐστὶ, καὶ τὸ Β ἐσται ψεύδος μὲν οὐ μέντοι ἀδύνατον· ἐπεὶ γὰρ δεδεικται ὅτι εἰ τοῦ Α ὄντος τὸ Β ἐστί, καὶ δυνατοῦ ὄντος τοῦ Α ἐσται τὸ Β δυνατὸν, υπόκειται δὲ τὸ Α δυνατὸν εἶναι, καὶ τὸ Β ἐσται δυνατὸν· εἰ γὰρ ἀδύνατον, ἀμα δυνατὸν ἐσται τὸ αὐτὸ καὶ ἀδύνατον.

Διωρισμένων δὴ τούτων ύπαρχέτω τὸ Α παντὶ τῷ Β, τὸ δὲ Β παντὶ τῷ Γ ἐνδεχέσθω· ἀνάγκη

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*a The reference seems to be to 24 b 18, but the point is never proved; cf. 40 b 35, An. Post. 73 a 8, 94 a 24. 268*
to come to be, then to be; for that which has come to be, when it has come to be, is. We must understand the terms 'possible' and 'impossible' with respect not only to generation but also to true statement and to attribution, and in all the other senses in which the term 'possible' is used; for the same principle will obtain in all of them. Further, we must not suppose that the proposition 'if A is, B is' means that B will be if some one assumption A is granted; for nothing necessarily follows from the granting of one assumption: two at least are required, as, e.g., when the premisses are related as we said with respect to the syllogism. For if C is predicated of D, and D of E, C must also be predicated of E. Moreover, if each of the premisses is possible, the conclusion is also possible. Thus supposing that A represents the premisses and B the conclusion, it will follow, not only that when A is necessary B is necessary too, but also that when A is possible B is possible.

As the result of this proof it is evident that if a hypothesis is false but not impossible, the result which is reached by means of the hypothesis will be false but not impossible. For example, if A is false but not impossible, and if when A is, B is, then B will be false but not impossible. For since it has been proved that if when A is, B is, when A is possible, B will also be possible; and since it is assumed that A is possible, then B will also be possible; for if it is impossible, the same thing will be at once possible and impossible.

Now that we have made these points clear, let us assume that A applies to all B, and that B may

For the sense of 'false' here see 34 a 37.
οὖν τὸ Α παντὶ τῷ Γ ἐνδέχεσθαι υπάρχειν. μὴ γὰρ ἐνδεχέσθω, τὸ δὲ Β παντὶ τῷ Γ κεῖσθω ὡς υπάρχον· τούτῳ δὲ ψεῦδος μὲν οὐ μέντοι ἀδύνατον. εἰ οὖν τὸ μὲν Α μὴ ἐνδέχεται τῷ Γ τὸ δὲ Β παντὶ υπάρχει τῷ Γ, τὸ Α οὐ παντὶ τῷ Β ἐνδέχεται.

40 γίγνεται γὰρ συλλογισμὸς διὰ τοῦ τρίτου σχήματος: ἀλλ' ὑπέκειτο παντὶ ἐνδέχεσθαι υπάρχειν· ανάγκη ἀρα τὸ Α παντὶ τῷ Γ ἐνδέχεσθαι. ψεῦδος γὰρ τεθέντος καὶ οὐκ ἀδύνατον τὸ συμβαίνον ἐστιν ἀδύνατον.

* i.e. it is not implied by the original premiss. Cf. Alexander 185. 16-20: Becker, A.T.M. 53 f.

b If Aristotle means this conclusion to be apodeictic he is inconsistent; cf. 31 b 37 ff. Becker suggests that since ἀνάγκη is often used merely to indicate the necessary relation of conclusion to premisses, οὐκ ἐνδέ may be used here in the same sense. At best the ambiguity is unhappy. It seems more likely that Aristotle was deceived by his own formula. See next note.

c Actually the assumption was that Α applies to all Β. Probably Aristotle employs the weaker form as being the normal contradictory of 'A cannot apply to all B' (see previous note). The substitution does not affect the validity of the argument.

d The form of the argument (and its fallacy) can be clearly seen in the following example, for which I am indebted to Professor T. M. Knox:

If (a) All Fellows are wise
and (b) All graduates may be Fellows
to prove that (c) All graduates may be wise.
Assume the contradictory of (c), viz.,

(d) Some graduates cannot be wise.
For (b) substitute the false but not impossible premiss

(e) All graduates are Fellows.

(f) Some Fellows [cannot be] are not wise.
apply to all C. Then it necessarily follows that A may apply to all C. For let us assume that it cannot possibly apply, and let B be taken as applying to all C (this is false, but not impossible). If then A cannot apply to all C, but B applies to all C, A cannot apply to all B; for we get a syllogism by means of the third figure. But *ex hypothesi* A may apply to all B. Hence it necessarily follows that A may apply to all C; for by making a false though not impossible assumption we get an impossible result.

But this is incompatible with

(a) All Fellows [may be] are wise

[. . . since (c) is not incompatible with (a)]

(d) must be incompatible with (a)].

. . . (c), the contrary of (d), must be true.

First it should be noted that the proof excludes the negative values of (b). It could only establish that no graduates are necessarily not wise (cf. 33 b 29). But it fails even to do this. The flaws in the argument are indicated by square brackets. The first two have been noted above, and are relatively unimportant. In the third case the argument clearly depends upon some tacit assumption, which Becker (A.T.M. 53) formulates thus:

Wenn $G_1 \& G_2$ unmöglich ist in bezug auf $F$, $G_2$ dagegen möglich ist

dann ist $G_1$ unmöglich

In my opinion his formula is too general and his examples unsuitable for the case in hand. The assumption is rather:

If the conjunction of two premisses (d) and (e) gives a conclusion (f) which is incompatible with a given hypothesis (a), whereas one of these premisses (e) is compatible with the said hypothesis, then the other premiss (f) must be incompatible with the said hypothesis.

It will be seen that in our example neither (d) nor (e) is in itself incompatible with (a). The incompatibility only becomes apparent when each premiss is examined in the light of the other; *i.e.*, it is the result of their conjunction. Thus Aristotle's assumption is unsound and the proof fails.
"Ἐγχωρεῖ δὲ καὶ διὰ τοῦ πρώτου σχήματος ποιήσαι τὸ ἀδύνατον θέντας τῷ Γ τὸ Β υπάρχειν· εἰ γὰρ τὸ Β παντὶ τῷ Γ υπάρχει τὸ δὲ Α παντὶ τῷ Β ἐνδέχεται, κἂν τῷ Γ παντὶ ἐνδέχοιτο τὸ Α· ἀλλ’ υπέκειτο μὴ παντὶ ἐγχωρεῖν.

Δεῖ δὲ λαμβάνειν τὸ παντὶ υπάρχειν μὴ κατὰ χρόνον ὀρίσαντας, οἷον νῦν ἢ ἐν τῷ τῷ χρόνῳ, ἀλλ’ ἀπλῶς· διὰ τοιούτων γὰρ προτάσεων καὶ τοὺς συλλογισμοὺς ποιοῦμεν, ἐπεὶ κατὰ γε τὸ νῦν λαμβανομένης τῆς προτάσεως οὐκ ἔσται συλλογισμός· οὐδὲν γὰρ ἴσως κωλύει ποτὲ καὶ παντὶ κινούμενῳ ἀνθρώπων υπάρχειν, οἷον εἰ μηδὲν ἄλλο κινοῖτο· τὸ δὲ κινούμενον ἐνδέχεται παντὶ ἴππῳ· ἀλλ’ ἀνθρώπων οὐδενὶ ἴππῳ ἐνδέχεται. ἔτι ἐστω τὸ μὲν πρώτον ζῷον, τὸ δὲ μέσον κινούμενον, τὸ δ’ ἐσχατον ἀνθρώπως· αἱ μὲν οὖν προτάσεις ὀμοίως ἔξουσι, τὸ δὲ συμπέρασμα ἀναγκαῖον, οὐκ ἐνδεχό-  

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I follow the traditional view that this paragraph is intended to offer an alternative per impossibile proof of the syllogism in 34 a 34-36. If we keep the same example as before, the argument appears to be:

The premises (g) All Fellows may be wise and (e) All graduates are Fellows which are compatible with the original premises (a) and (b), give the conclusion (c) All graduates may be wise, which is therefore compatible with (a) and (b). Hence (d), the contradictory of (c), is incompatible with (a) and (b), and therefore false. Therefore (c) is true.

The argument only establishes the conclusion as a possibility, not as a necessary inference. Hence Becker (A.T.M. 57) offers a different explanation; ingenious but hardly convincing.

This warning against temporal qualifications was no doubt designed to defend the foregoing syllogism against objections in the form of the examples which follow in the
We can also exhibit an impossibility through the first figure, by assuming that B applies to C. For if B applies to all C, and A may apply to all B, A may also apply to all C. But it was assumed that it cannot apply to all.\textsuperscript{a}

We must understand the expression 'applying to all,' not as qualified in respect of time,\textsuperscript{b} \textit{e.g.,} 'now', or 'at such-and-such a time,' but in an absolute sense; for it is by means of premisses taken in this latter way that we effect our syllogisms. If the premiss is taken as relating to the present moment, there will be no syllogism. For presumably there is no reason why at some time 'man' should not apply to everything that is in motion: \textit{i.e.}, if nothing else were then in motion; but the term 'in motion' may apply to all horses, and 'man' cannot apply to any horse. Again, let us take the first term as 'animal,' the middle as 'in motion,' and the last as 'man.' Then the premisses will be related in the same way as before, but the conclusion is apodeictic text. The whole paragraph, however, is ill thought out. We have already seen that the major premiss above is treated now as assertoric, now as problematic. Presumably we are here to regard it as assertoric; although the formula \textit{οὐδὲν κωλύει}, etc., points more naturally to a problematic sense. If assertoric, the judgement 'everything in motion is a man' is certainly not universal but collective or enumerative. But the fallacy of the syllogism in which it appears as major premiss is due rather to the incompatibility of the two premisses; the conditions which validate the major exclude the minor.

In the second example the conclusion 'all men may be animals' is the only legitimate inference from the premisses, which are perfectly compatible. Aristotle apparently rejects it because he expects a valid conclusion to state the full and permanent logical relation between the terms which it contains. \textit{Cf.} Introd. p. 188.
μενον· ἐξ ἀνάγκης γὰρ ὁ ἀνθρωπός ζῷον. φανερὸν
οὖν ὅτι τὸ καθόλου ληπτέον ἀπλῶς, καὶ οὐ χρονῷ
dιορίζοντας.

Πάλιν ἐστώ στερητική πρότασις καθόλου ἢ ΑΒ,
καὶ εἰλήφθω τὸ μὲν Α μηδενί τῷ Β ύπάρχειν, τὸ
δὲ Β παντὶ ἐνδεχέσθω ύπάρχειν τῷ Γ. τούτων
οὖν τεθέντων ἀνάγκη τὸ Α ἐνδεχεσθαι μηδενὶ τῷ
Γ ύπάρχειν. μὴ γὰρ ἐνδεχέσθω, τὸ δὲ Β τῷ
Γ κείσθω ύπάρχον, καθάπερ πρότερον· ἀνάγκη δὴ
τὸ Α τινὶ τῷ Β ύπάρχειν· γίνεται γὰρ συλ-
λογισμὸς διὰ τοῦ τρίτου σχήματος. τούτῳ δὲ
ἀδύνατον· ἀστὶ ἐνδέχεσθαι αὖ τὸ Α μηδενὶ τῷ Γ
ψεύδους γὰρ τεθέντος ἀδύνατον τὸ συμβαίνον.
οὔτος οὖν ὁ συλλογισμὸς οὐκ ἔστι τοῦ κατὰ τὸν
διορισμὸν ἐνδεχομένου, ἀλλὰ τοῦ μηδενὶ ἐξ ἀνάγκης·
αὐτὴ γὰρ ἐστὶν ἡ ἀντίφασις τῆς γενομένης ὑπο-
θέσεως, ἐτέθη γὰρ ἐξ ἀνάγκης τὸ Α τινὶ τῷ Γ
ὑπάρχειν, δὲ διὰ τοῦ ἀδύνατον συλλογισμὸς τῆς
ἀντικειμένης ἐστὶν ἀντιφάσεως.

Ἐτὶ δὲ καὶ ἐκ τῶν ἄρων φανερὸν ὅτι οὐκ ἔσται
τὸ συμπέρασμα ἐνδεχόμενον. ἐστὶν γὰρ τὸ μὲν
Α κόραξ, τὸ δὲ ἐφ᾽ ὧν διανοοῦμεν, ἐφ᾽ ὧν δὲ Γ
ἀνθρωπος· οὐδενὶ δὴ τῷ Β τῷ Α ύπάρχει, οὐδὲν
γὰρ διανοούμενον κόραξ· τὸ δὲ Β παντὶ ἐνδέχεται
τῷ Γ, παντὶ γὰρ ἀνθρώπῳ τὸ διανοεῖσθαι· ἀλλὰ
τὸ Α ἐξ ἀνάγκης οὐδενὶ τῷ Γ· οὐκ ἀρα τὸ συμ-
πέρασμα ἐνδεχόμενον. ἀλλ᾽ οὐδ᾽ ἀναγκαίον ἄει.

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* i.e. that A must apply to some C.
* 34 a 36.
* 31 b 20 ff. The conclusion is only assertoric.
* Cf. 34 b 1. In the present passage there is clearly an
  ellipse of καὶ οὐκ ἄδυνατον, which Jenkinson overlooks.
and not problematic; for man is necessarily an animal. Thus it is evident that the universal premiss must be taken absolutely, and not as qualified in respect of time.

Again, let $AB$ be a negative universal premiss, and let it be assumed that $A$ applies to no $B$, and that $B$ may apply to all $C$. Then it must follow from these assumptions that $A$ may apply to no $C$. For let us assume that it cannot apply (to no $C$), and let $B$ be taken as applying to all $C$, as before. Then it must follow that $A$ applies to some $B$; for we get a syllogism by means of the third figure. But this is impossible. Therefore it will be possible for $A$ to apply to no $C$; for by making a false (but not impossible) assumption we get an impossible result. Thus this syllogism does not give a conclusion which is 'possible' in the sense defined, but proves that the predicate does not necessarily apply to any of the subject; for this is the contradictory of the assumption which we made, since it was assumed that $A$ necessarily applies to some $C$, and the syllogism per impossibile proves the contradictory opposed to the (impossible) assumption.

Again, it is evident from considering examples of terms that the conclusion will not be problematic. Let $A$ stand for 'crow,' $B$ for 'intelligent,' and $C$ for 'man.' Then $A$ applies to no $B$; for nothing intelligent is a crow. But $B$ may apply to all $C$; for intelligence may apply to every man. But $A$ necessarily applies to no $C$. Hence the conclusion is not problematic. Nor, however, is it always

\* 32 a 18.
\footnote{This excludes the possibility that $A$ may apply to all $C$, which would be implicit in a truly problematic conclusion.}
Εἰςτὶ γὰρ τὸ μὲν Ἄ κινούμενον, τὸ δὲ Β ἐπιστήμην, τὸ δὲ ἐφ᾽ Ὡ Γ ἀνθρώπως. τὸ μὲν οὖν Λ οὐδεὶς τῷ
40 Β ὑπάρξει, τὸ δὲ Β παντὶ τῷ Γ ἐνδέχεσται, καὶ
45 οὐκ ἔσται τὸ συμπέρασμα ἀναγκαῖον οὐ γὰρ
50 ἀνάγκη μηδένα κινεῖσθαι ἀνθρώπων, ἀλλὰ οὖν ἀνάγκη τινά. δὴ λοι οὖν ὅτι τὸ συμπέρασμα ἐστὶ
55 τοῦ μηδενὶ εἰς ἀνάγκης ὑπάρχειν. ληπτέον δὲ
60 βέλτιον τοὺς ὅρους.

Εἰς γὰρ τὸ στερητικὸν τεθῇ πρὸς τὸ ἔλαττον ἀκρον ἐνδέχεσθαι σημαίνον, εἰς αὐτῶν μὲν τῶν
65 εἰλημμένων προτάσεων οὐδεὶς ἔσται συλλογισμὸς, ἀντιστραφείσης δὲ τῆς κατὰ τὸ ἐνδέχεσθαι προ-
70 τάσεως ἔσται, καθάπερ ἐν τοῖς πρώτοις. ὑπ-
75 αρχέτω γὰρ τὸ Α παντὶ τῷ Β, τὸ δὲ Β ἐνδεχόμεθα
80 μηδενὶ τῷ Γ. οὖτω μὲν οὖν ἐχόντων τῶν ὅρων
85 οὐδέν ἔσται ἀναγκαῖον. εάν δὲ ἀντιστραφῇ τὸ ΒΓ
90 καὶ ληφθῇ τὸ Β παντὶ τῷ Α ὑπάρχειν, γίγνεται
95 συλλογισμὸς ὡσπερ πρότερον ὁμοίως γὰρ ἔχοντων
100 οἱ ὅροι τῇ θέσει. τὸν αὐτὸν δὲ τρόπον καὶ στερη-
105 τικῶν ὅντων ἀμφοτέρων τῶν διαστημάτων, εάν τὸ
110 μὲν ΑΒ μὴ ὑπάρχῃ, τὸ δὲ ΒΓ μηδενὶ ἐνδέχεσθαι
115 σημαίνῃ: δὲ αὐτῶν μὲν γὰρ τῶν εἰλημμένων
120 οὐδαμῶς γίγνεται τὸ ἀναγκαῖον, ἀντιστραφείσης
125 δὲ τῆς κατὰ τὸ ἐνδέχεσθαι προτάσεως ἔσται
130 συλλογισμὸς. εἰλήφθω γὰρ τὸ μὲν Α μηδενὶ τῷ
135 Β ὑπάρχον, εάν δὲ Β ἐνδέχεσθαι μηδενὶ τῷ Γ, διὰ
140 μὲν οὖν τούτων οὐδέν ἀναγκαῖον, εάν δὲ ληφθῇ τὸ
145 Β παντὶ τῷ Γ ἐνδέχεσθαι, ὅπερ ἐστὶν ἁλθὲς, ἢ
150 δὲ ΑΒ πρότασις ὁμοίως ἔχῃ, πάλιν ὁ αὐτὸς ἔσται

1 ὑπάρχειν ο.
apodeictic; for let A stand for 'in motion' and B for 'knowledge' and C for 'man.' Then A will apply to no B, but B may apply to all C, and the conclusion will not be apodeictic. For it is not necessary that no man should be in motion; rather it is not necessary that any man should be. Thus it is clear that the conclusion proves that the predicate does not necessarily apply to any of the subject. But the terms must be better chosen.

If, however, the negative premiss refers to the minor extreme and has the problematic signification, there will be no syllogism from the actual premisses assumed, but when the problematic premiss is converted there will be a syllogism, as in the previous examples. Let A apply to all B, and let B possibly apply to no C. Then with the terms in this relation there will be no necessary inference; but if the premiss BC is converted and B is taken as possibly applying to all C, we get a syllogism as before; for the terms are similarly disposed. The same is true when both the propositions are negative, if AB is assertoric and negative, and BC has the sense of possibly applying to none. For by means of the assumptions as they stand we reach no necessary inference at all; but when the problematic premiss is converted there will be a syllogism. For let it be assumed that A applies to no B, and that B may apply to no C. Then from these assumptions there is no necessary inference; but if it is assumed that B may apply to all C, which is true, while the premiss AB remains the same, we shall get the same syllo-

a This is false. Knowledge cannot 'apply' to man in the sense that man is knowledge. Aristotle confuses ἐπιστήμη with ἐπιστήμον (cf. ch. xxxiv.). The confession in 35 a 2 is significant.

b 33 a 7, 16.

c 34 a 34.
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συλλογισμός. ἐὰν δὲ μὴ ύπάρχειν τεθῇ τὸ Ἡ
παντὶ τῷ Γ καὶ μὴ ἐνδέχεσθαι μὴ ύπάρχειν, οὐκ ἐστὶ συλλογισμός οὐδαμῶς, οὔτε στερητικῆς οὐσίας οὔτε καταφατικῆς τῆς ΑΒ προτάσεως.
οροὶ δὲ κοινοὶ τοῦ μὲν εἰς ἀνάγκης ύπάρχειν λευκὸν —ζῷον—χιών, τοῦ δὲ μὴ ἐνδέχεσθαι λευκὸν—ζῷον —πίτα.
25 Φανερὸν οὖν ὅτι καθόλου τῶν ὅρων ὄντων καὶ τῆς μὲν ύπάρχειν τῆς δ᾽ ἐνδέχεσθαι λαμβανομένης τῶν προτάσεων, ὅταν ἡ πρὸς τὸ Ἐλαττων ἄκρον ἐνδέχεσθαι λαμβανηται πρότασις, ἀεὶ γίγνεται συλλογισμός, πλὴν ὅτε μὲν εἰς αὐτῶν ὅτε δ᾽ ἀντι-
στραφεῖσθης τῆς προτάσεως: πότε δὲ τούτων ἐκάτερος καὶ διὰ τῶν αἰτιῶν, εἰρήκαμεν.
Ἐὰν δὲ τὸ μὲν καθόλου τὸ δ᾽ ἐν μέρει ληφθῇ τῶν διαστημάτων, ὅταν μὲν τὸ πρὸς τὸ μεῖζον ἄκρον καθόλου τεθῇ καὶ ἐνδεχόμενον, εἰτε ἀπο-
φατικὸν εἰτε καταφατικὸν, τὸ δ᾽ ἐν μέρει κατα-
φατικὸν καὶ ύπάρχον, ἐστὶ συλλογισμὸς τέλειος,
35 καθάπερ καὶ καθόλου τῶν ὅρων ὄντων. ἀπόδειξις δ᾽ ἡ αὐτή ἡ καὶ πρότερον. ὅταν δὲ καθόλου μὲν ἡ τὸ πρὸς τὸ μεῖζον ἄκρον, ύπάρχον δὲ καὶ μὴ ἐνδεχόμενον, θάτερον δ᾽ ἐν μέρει καὶ ἐνδεχόμενον, εάν τ᾽ ἀποφατικά ἐάν τε καταφατικά τεθῶσιν ἀμφότεραι εάν τε ἡ μὲν ἀποφατική ἡ δὲ κατα-
30 φατική, πάντως ἐστὶ συλλογισμὸς ἀτελῆς: πλὴν οἱ μὲν διὰ τοῦ ἀδυνάτου δειχθήσονται οἱ δὲ διὰ τῆς ἀντιστροφῆς τῆς τοῦ ἐνδέχεσθαι, καθάπερ ἐν τοῖς πρότεροιν.
"Εστι αὐτὸς τὸ συλλογισμὸς διὰ τῆς ἀντιστροφῆς καὶ ὅταν ἡ μὲν καθόλου πρὸς τὸ μεῖζον ἄκρον τεθεῖσα

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gism once more. But if it is assumed, not that $B$ may apply to no $C$, but that $B$ does not apply to any $C$, there will be no syllogism in any case, whether the premiss $AB$ is negative or affirmative. Terms common to both cases and showing a positive apodeictic relation of predicate to subject are white—animal—snow; showing a negative apodeictic relation, white—animal—pitch.

Thus it is evident that if the terms are universal and one premiss is assertoric and the other problematic, when the minor premiss is problematic, a syllogism always results—sometimes from the original assumptions and sometimes after the conversion of the said premiss. We have explained under what conditions each of these two cases obtains, and for what reason.

If, however, one of the propositions is universal and the other particular, when the major premiss is universal and problematic (whether negative or affirmative) and the particular premiss is affirmative and assertoric, there will be a perfect syllogism, just as when the terms were universal. The proof is the same as before. But when the major premiss is universal, but assertoric and not problematic, and the other is particular and problematic, if both premisses are negative, or both affirmative, or one negative and the other affirmative, in every case there will be an imperfect syllogism; but some will be proved per impossibile and others by the conversion of the problematic premiss, as in the previous examples.

We shall also have a syllogism by means of conversion when the universal major premiss has an

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σημαίνη το ὑπάρχειν ἡ μὴ ὑπάρχειν, ἢ δ' ἐν μέρει ἡ στερητικὴ οὐσία τὸ ἐνδέχεσθαι λαμβάνῃ, οἷον εἰ τὸ μὲν Α παντὶ τῷ Β ὑπάρχει ἡ μὴ ὑπάρχει, τὸ δὲ Β τῷ Γ ἐνδέχεται μὴ ὑπάρχειν ἀντιστραφέντος γὰρ τοῦ ΒΓ κατὰ τὸ ἐνδέχεσθαι γίγνεται συλλογισμός. ὅταν δὲ τὸ μὴ ὑπάρχειν λαμβάνῃ ἡ κατὰ μέρος τεθείσα, οὐκ ἔσται συλλογισμός.

5 Ὅταν δὲ τὸ ὅλών τοῦ μὲν ὑπάρχειν λευκὸν—ξώον—χιόν, τοῦ δὲ μὴ ὑπάρχειν λευκὸν—ξώον—πίττα: διὰ γὰρ τοῦ ἀδιορίστου ληπτεόν τὴν ἀπόδειξιν.

Ἐάν δὲ τὸ καθόλου τεθῇ πρὸς τὸ ἔλαττον ἄκρον τὸ δ' ἐν μέρει πρὸς τὸ μεῖζον, εάν τε στερητικῶν εάν τε καταφατικῶν εάν τ' ἐνδεχόμενων εάν θ' ὑπάρχον ὀποτερονοῦν, οὐδαμῶς ἐσται συλλογισμός.

10 οὐδ' ὅταν ἐν μέρει ἡ ἀκροτοῦ τεθῶσιν αἱ προτάσεις, εἰτ' ἐνδέχεσθαι λαμβάνουσαι εἰθ' ὑπάρχειν εἰτ' ἐναλλάξ, οὐδ' οὕτως ἐσται συλλογισμός. ἀπόδειξις δ' ἡ αὐτὴ ἡ κατὶ τῶν προτερον. ὅροι δὲ κοινοὶ τοῦ μὲν ὑπάρχειν ἐξ ἀνάγκης ξώον—λευκὸν—ἀνθρωπός, τοῦ δὲ μὴ ἐνδέχεσθαι ξώον—λευκὸν—ίματιον.

15 Φανερὸν οὖν ὅτι τοῦ μὲν πρὸς τὸ μεῖζον ἄκρον καθόλου τεθέντος αἱ γίγνεται συλλογισμός, τοῦ δὲ πρὸς τὸ ἔλαττον οὐδέποτε οὐδαμῶς.

XVI. Ὅταν δ' ἡ μὲν εἴς ἀνάγκης ὑπάρχειν ἡ δ' ἐνδέχεσθαι σημαίνη τῶν προτάσεων, ὁ μὲν συλ-

20 λογισμὸς ἔσται τοῦ αὐτοῦ τρόπου ἐχώντων τῶν ὀρών, καὶ τέλειος ὅταν πρὸς τῷ ἔλαττον ἄκρων τεθῇ τὸ ἀναγκαῖον τὸ δὲ συμπέρασμα κατηγορικῶν

"Cf. 26 b 14, 27 b 20."
affirmative or negative assertoric sense, and the particular premiss is negative and has a problematic sense: e.g., if A applies or does not apply to all B, and B may not apply to some C; for when BC is converted we get a problematic syllogism. But when the particular premiss is assertoric and negative, there will be no syllogism. Examples of terms where the predicate applies to the subject are white—animal—snow; where it does not apply, white—animal—pitch. The proof must be drawn from the indefinite nature of the particular premiss.\footnote{3}

But if the universal premiss refers to the minor extreme, and the particular to the major, whether either premiss is negative or affirmative, problematic or assertoric, there will in no case be a syllogism. Also when the premisses are particular or indefinite, whether both entail a problematic or both an assertoric relation, or one the former and the other the latter; under these conditions too there will be no syllogism. The proof is the same as in the previous examples.\footnote{b}

Terms common to all cases where the predicate necessarily applies to the subject are animal—white—man; where it cannot possibly apply, animal—white—coat.

Thus it is evident that when the major premiss is universal, a syllogism always results; but when the minor is universal there is never any syllogism of any kind.

XVI. When one of the premisses has an apodeictic and the other a problematic sense, there will be a syllogism if the terms are related in the same way as before\footnote{c}; and it will be perfect when the apodeictic premiss is attached to the minor term. If the terms

\footnote{b} 33 a 34 ff. \footnote{c} In ch. xv.
μὲν δὲντων τῶν ὅρων τοῦ ἐνδέχεσθαι καὶ οὐ τοῦ ὑπάρχειν ἐσται, καὶ καθόλου καὶ μὴ καθόλου τιθεμένων, ἕαν δ’ ἂτι τὸ μὲν καταφατικὸν τὸ δὲ στερητικόν, ὅταν μὲν ἂτι τὸ καταφατικὸν ἀναγκαίον, τοῦ ἐνδέχεσθαι καὶ οὐ τοῦ μὴ ὑπάρχειν, ὅταν δὲ τὸ στερητικόν, καὶ τοῦ ἐνδέχεσθαι μὴ ὑπάρχειν καὶ τοῦ μὴ ὑπάρχειν καὶ καθόλου καὶ μὴ καθόλου τῶν ὅρων ὄντων. τὸ δ’ ἐνδέχεσθαι ἐν τῷ συμπερασματικῷ τὸν αὐτὸν τρόπον ἡπτεών ὅτι τῶν πρώτων. τοῦ δ’ ἐξ ἀνάγκης μὴ ὑπάρχειν οὐκ ἐσται συλλογισμός: ἐτερον γὰρ τὸ μὴ ἐξ ἀνάγκης ὑπάρχειν καὶ τὸ ἐξ ἀνάγκης μὴ ὑπάρχειν.

"Ὅτι μὲν οὖν καταφατικῶν ὄντων τῶν ὅρων οὐ γίγνεται τὸ συμπερασματικὸν, ἀναγκαῖον, φανερὸν. ὑπ’ ἀρχέτων ἡπεῖρον τὸ Α παντὶ τῷ Β ἐξ ἀνάγκης, τὸ δὲ τὸ Β ἐνδεχόμεθα παντὶ τῷ Γ· ἐσται δὴ συλλογισμός ἐτερον γὰρ τὸ Α παντὶ τῷ Γ ὑπάρχειν. ὅτι δ’ ἀτελής ὅτι ἐνδέχεται τὸ Α παντὶ τῷ Γ ὑπάρχειν. ὅτι δ’ ἀτελής ἐκ τῆς ἀποδείξεως δὴν τὸν αὐτὸν γὰρ τρόπον δειχθῆσαι ὅτι τῶν πρώτων, πάλιν τὸ μὲν Α ἐνδεχόμεθα παντὶ τῷ Β, τὸ δὲ τὸ Β παντὶ τῷ Γ ὑπάρχετω οὐκ ἀνάγκης· ἐσται δὴ συλλογισμός ὅτι τὸ Α παντὶ τῷ Γ ἐνδέχεται ὑπάρχειν, ἀλλ’ οὐχ ὅτι ὑπάρχει, καὶ τιλεύει αὐτὸ τὴς αἰτίας· εὐθὺς γὰρ εἶπεν εἰς τῶν εἰς ἀρχὴν πρῶτα ἐπιστευόμενος. Εἴ δὲ μὴ ὀμοιοσχήμονες αἱ πρῶται, ἐστὶ πρῶτον ἢ στερητικὴ ἀναγκαῖον, καὶ τὸ μὲν Α μὴ οὐδεὶς ἐνδεχόμεθα τῷ Β [ἢ ἀνάγκης]. τὸ δὲ τὸ Β παντὶ τῷ Γ ἐνδεχόμεθα. ἀνάγκη δὴ τὸ Α μηδε ἐνδεχόμεθα τῷ Γ ὑπάρχειν. κείσθω γὰρ ὑπάρχειν ἢ παντὶ ἢ τινὶ τῷ δὲ τῷ Β ὑπέκειτο μηδεὶς ἐνδεχόμεθα. ἐπει ὁμὶ

1 ἐστι δὴ B, Waitz: ἐστι δὲ ι.: ἐστι Α: ὑπάρχειν C.
2 εἶ ἀνάγκης om. Cn, Alexander: μὴ ὑπάρχει εἰς ἀνάγκης d.
are positive, whether they are universal or not, the conclusion will be problematic, not assertoric; if one premiss is affirmative and the other negative, when the affirmative is apodeictic, the conclusion will be problematic, not negative assertoric; and when the negative is apodeictic, there will be both a problematic and an assertoric negative conclusion, whether the terms are universal or not. The sense of 'possibility' in the conclusion must be understood in the same way as before. There will be no inference to the effect that the predicate necessarily does not apply to the subject; for 'not necessarily to apply' is not the same as 'necessarily not to apply.'

Now it is evident that when the terms are positive the conclusion which we get is not apodeictic. For let us assume that A must apply to all B, and B may apply to all C. Then there will be an imperfect syllogism to the effect that A may apply to all C. That it is imperfect is clear from the proof; for the proof will proceed in the same way as before. Again, let us assume that A may apply to all B, and that B must apply to all C. Then there will be a syllogism to the effect that A may apply to all C—not that it does apply; and the syllogism will be perfect, not imperfect; for it is concluded directly by means of the original premisses.

If the premisses are not similar in quality, let us first take the negative premiss as apodeictic; let us assume that it is impossible for A to apply to any B, and let us assume that B may apply to all C. Then it must follow that A applies to no C. For let us assume that it applies to all or some of C. Now it was assumed that it cannot apply to any B. Then

* Cf. 33 b 30, 34 b 27.  
* 34 a 34 ff.
Ἀριστοτέλης

栢拉图

αὐτιστρέφει τὸ στερητικὸν, οὐδὲ τὸ Β τῷ Α οὐδὲν ἔνδεχεται. τὸ δὲ Α τῷ Γ ἢ παντὶ ἢ τινὶ κεῖται ὑπάρχειν. ἢ ὅστ' οὐδενὶ ἢ οὐ παντὶ τῷ Γ τῷ Β ἔνδεχοντ' ἀν ὑπάρχειν ὑπέκειτο δὲ παντὶ εἰς ἀρχῆς.

Φανερὸν δ' ὦτι καὶ τοῦ ἔνδεχεσθαι μὴ ὑπάρχειν γίγνεται συλλογισμὸν, εἰπερ καὶ τοῦ μὴ ὑπάρχειν. πάλιν ἐστὶν ἡ καταβατικὴ πρότασις ἀναγκαῖα, καὶ τὸ μὲν Α ἔνδεχεσθω μηδενὶ τῶν Β ὑπάρχειν, τὸ δὲ Β παντὶ τῷ Γ ὑπαρχέτω εἰς ἀνάγκης. ο μὲν

οὖν συλλογισμὸν ἐσται τελειος, ἀλλ' οὔ τοῦ μὴ ὑπάρχειν ἀλλὰ τοῦ ἔνδεχεσθαι μὴ ὑπάρχειν ἢ τε γὰρ πρώτας οὕτως ἐλήφθη ἢ ἀπὸ τοῦ μείζωνος ἀκρου, καὶ εἰς τὸ ἀδύνατον οὐκ ἐστὶν ἀγαγεῖν ἢ 

γὰρ ὑποτεθεῖ τὸ Α τῷ Γ τινὶ ὑπάρχειν, κεῖται δὲ καὶ τῷ Β ἔνδεχεσθαι μηδενὶ ὑπάρχειν, οὖν

συμβαίνει διὰ τούτων ἀδύνατον. εάν δὲ πρὸς τῷ ἐλάττων ἀκρῳ τεθῇ τὸ στερητικὸν, ὅταν μὲν ἔνδεχεσθαι σημαίνῃ συλλογισμὸν ἐσται διὰ τῆς ἀντιστροφῆς, καθάπερ εἰν τοῖς πρῶτοι, ὅταν δὲ μὴ ἔνδεχεσθαι οὐκ ἐσται οὐδὲν ὅταν τὸ μὲν τῇ ἀκρᾳ στερητικὰ μὴ ἢ δ' ἔνδεχομενον τὸ πρὸς τὸ 

ἐλάττων. ὁροὶ δ' οἱ αὐτοὶ, τοῦ μὲν ὑπάρχειν λευκῶν —ζων—χιών, τοῦ δὲ μὴ ὑπάρχειν λευκῶν —ζώου —πίττα.

1 τῷ C. 2 τῷ Bekker: μηδενι codd., Alexander.

* The proof fails because the validating syllogism gives not an apodeictic but an assertoric conclusion (cf. 30 a 15 ff.) which does not contradict the original minor premise. It is curious that ' the contradictory of A applies to no C,' should be stated in the form ' A applies to all or some of C.' Becker

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since the negative premiss is convertible, neither can B apply to any A. But it has been assumed that A applies to all or some of C. Therefore B cannot apply to any or all of C. But it was originally assumed that it may apply to all.²

It is evident that we can have a syllogism of the negative problematic type, since we also have one of the negative assertoric type. Let the affirmative premiss now be apodeictic; and let us assume that A may apply to no B, and that B must apply to all C. Then the syllogism will be perfect, but it will be not of the negative assertoric but of the negative problematic type, for the premiss which relates to the major term was assumed in this sense; and we cannot employ reduction ad impossibile. For supposing that we assume that A applies to some C,² while it is still assumed that A may apply to no B, no impossible conclusion is obtained by means of these assumptions. If, however, the negative is attached to the minor term, when the sense is problematic, there will be a syllogism by conversion, as in the previous examples;² but when the sense is not problematic there will be no syllogism; nor will there be one when both premisses are taken as negative and the minor is not problematic. The terms are the same as before: where the predicate applies to the subject, white—animal—snow; where it does not, white—animal—pitch.

(A.T.M. p. 44) argues plausibly that the expression represents the expansion of an originally indefinite premiss 'A applies to C.'

² This being the contradictory of the conclusion (A applies to no C) which it is hoped to establish.

² Cf. 35 a 14, b 1, 7. The resultant syllogism will be the same as in 35 b 38 ff.
Τὸν αὐτὸν δὲ τρόπον ἐξει κατὶ τῶν ἐν μέρει συλλογισμῶν. ὅταν γὰρ ἦ τὸ στερητικὸν ἀναγκαῖον, καὶ τὸ συμπέρασμα ἔσται τὸν μὴ ὑπάρχειν. οἶον εἰ τὸ μὲν Α μηδενὶ τῶν Β ἐνδεχεται ὑπάρχειν τὸ δὲ Β τυί τῶν Γ ἐνδεχεται ὑπάρχειν, ἀνάγκη τὸ Α τυί τῶν Γ μὴ ὑπάρχειν. εἰ γὰρ παντὶ ὑπάρχει τῷ δὲ Β μηδενὶ ἐνδεχεται, οὐδὲ τὸ Β οὐδενὶ τῷ Α ἐνδεχεται ὑπάρχειν. ὡστ' εἰ τὸ Α παντὶ τῷ Γ ὑπάρχει, οὐδενὶ τῶν Γ τὸ Β ἐνδεχεται. ἀλλ' ὑπε-έκειτο τυί ἐνδεχεσθαι.

"Οταν δὲ τὸ ἐν μέρει καταφατικὸν ἀναγκαῖον ἦ τὸ ἐν τῷ στερητικῷ συλλογισμῷ, οἶον τὸ ΒΓ, ἢ τὸ καθόλου ἐν τῷ κατηγορικῷ, οἶον τὸ ΑΒ, οὐκ ἔσται τοῦ ὑπάρχειν συλλογισμός. ἀπὸδειξις δ' ἢ αὐτή ἢ καὶ ἐπὶ τῶν πρότερον. ἐὰν δὲ τὸ μὲν καθόλου τεθῇ πρὸς τὸ ἔλαττον ἄκρον, ἢ καταφατικὸν ἢ στερητικὸν, ἐνδεχόμενον, τὸ δ' ἐν μέρει ἀναγκαῖον [πρὸς τῷ μείζονι ἄκρῳ], οὐκ ἔσται συλλογισμός. ὅροι δὲ τοῦ μὲν ὑπάρχειν εἰ ἀνάγκης ζώον—λευκόν—ἀνθρώπος, τοῦ δὲ μὴ ἐνδεχεσθαι. ζώον—λευκόν—ιμάτιον. ὅταν δ' ἀναγκαῖον ἦ τὸ καθόλου τὸ δ' ἐν μέρει ἐνδεχόμενον, στερητικοῦ μὲν ὅντος τοῦ καθόλου τοῦ μὲν ὑπάρχειν ὅροι ζώον—λευκόν—κόραξ, τοῦ δὲ μὴ ὑπάρχειν ζώον—λευκόν—πίττα, καταφατικοῦ δὲ τοῦ μὲν ὑπάρχειν ζώον—λευκόν—κύκνος, τοῦ δὲ μὴ ἐνδεχεσθαι ζώον—λευκόν—χιών.

Οὔδ' ὅταν ἄδιοριστοι ληφθῶσιν αἱ προτάσεις

1 τὸ ἔλαττον ἄκρον 'ex optimis libris' Waitz: τῷ ἔλαττον ἄκρῳ uolgo.
2 πρὸς . . . ἄκρω om. Adf, secl. Waitz.
The same principle will apply to particular syllogisms.\textsuperscript{a} When the negative premiss is apodeictic, the conclusion will also be of the negative assertoric type. \textit{E.g.}, if A cannot apply to any B, and B may apply to some C, it must follow that A does not apply to some C. For if A applies to all C, and cannot apply to any B, B too cannot apply to any A; and so if A applies to all C, B cannot apply to any C. But it was assumed that it may apply to some.\textsuperscript{b}

When the particular affirmative premiss (viz. BC) in the negative, or the universal premiss (viz. AB) in the affirmative syllogism is apodeictic, the conclusion will not be assertoric. The proof is the same as before.\textsuperscript{c} If the universal premiss, whether affirmative or negative, is problematic and relates to the minor, while the particular premiss is apodeictic and relates to the major term, there will be no syllogism. Examples of terms where the predicate necessarily applies are animal—white—man; where the predicate cannot possibly apply, animal—white—coat. When the universal premiss is apodeictic and the particular problematic, (a) if the universal is negative, examples of terms where the predicate applies to the subject are animal—white—crow, and where it does not apply, animal—white—pitch; (b) if it is affirmative, examples of terms where the predicate applies are animal—white—swan, and where it cannot possibly apply, animal—white—snow.

Nor will there be a syllogism when the premisses

\textsuperscript{a} Aristotle passes over the case of particular syllogisms with both premisses affirmative.

\textsuperscript{b} The proof fails as in the corresponding syllogism at 36 a 7 ff., because the validating syllogism does not give the required contradiction.

\textsuperscript{c} Cf. 36 a 19-25.

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οὐκ ἔσται συλλογισμός. ὅτι δὲ κανῶ οὐκ ἔσται ὑπάρχειν ζῷον—
λευκὸν—ἀνθρώπως, τοῦ δὲ μὴ ὑπάρχειν ζῷον—
λευκὸν—ἄμφωξον. καὶ γὰρ τὸ ζῷον τινὶ λευκῷ καὶ
tὸ λευκὸν ἄμφωξον τινὶ καὶ ἀναγκαίον ὑπάρχειν καὶ
οὐκ ἐνδέχεται ὑπάρχειν. κατὶ τοῦ εἰ ἐκεῖσθαι
ὁμοίως, ὥστε πρὸς ἑπιταχυντα χρήσιμοί οἱ ὅροι.
Φανερῶν οὖν ἐκ τῶν εἰρημένων ὅτι ὁμοίως
ἐχόντων τῶν ὅρων ἐν τῇ πάντῳ ὑπάρχειν καὶ ἐν τοῖς
ἀναγκαίοις γέγονεται τε καὶ οὐ γέγονεται συλλογισμός,
πλὴν κατὰ μὲν τὸ ὑπάρχειν τιθεμένης τὴς στερητικῆς
προτάσεως τοῦ ἐνδέχεσθαι ἢν ὁ συλλογισμός,
κατὰ δὲ τὸ ἀναγκαῖον τῆς στερητικῆς καὶ τοῦ
ἐνδέχεσθαι καὶ τοῦ μὴ ὑπάρχειν. [ὁμοίως δὲ καὶ
ὅτι πάντες ἀτελεῖς οἱ συλλογισμοὶ καὶ ὅτι τε-
λειοῦνται διὰ τῶν προειρημένων σχημάτων.]

XVII. 'Εν δὲ τῷ δεύτερῳ σχῆματι ὅταν μὲν
ἐνδέχεσθαι λαμβάνωσον ἀμφότεραι οἱ προτάσεις,
oúdeis ἐσται συλλογισμός, οὐτε κατηγορικῶν οὐτε
στερητικῶν τιθεμένων οὔτε καθόλου οὔτε κατὰ
μέρος: ὅταν δὲ ἡ μὲν ὑπάρχειν ἡ δ᾽ ἐνδέχεσθαι
σημαίνη, τῆς μὲν καταφατικῆς ὑπάρχειν σημα-

νούσης οὐδέποτε ἐσταὶ, τῆς δὲ στερητικῆς τῆς
καθόλου ἀεί. τοῦ αὐτοῦ δὲ τρόπου καὶ ὅταν ἡ μὲν
ἐξ ἀνάγκης ἡ δ᾽ ἐνδέχεσθαι λαμβάνηται τῶν

προτάσεων. δεὶ δὲ καὶ ἐν τούτοις λαμβάνειν τὸ
ἐν τοῖς συμπεράσμασιν ἐνδεχόμενον ὧσπερ ἐν τοῖς

πρότερον.

1 sceII. Maier.

* This sentence is quite out of place here; it seems to be
copied from 39 a 1 (Maier, Syllogistik, II. i. 176, note 2).

33 b 30, 34 b 27, 35 b 32.
are taken as indefinite or both as particular. Examples of terms common to all cases where the predicate applies to the subject are animal—white—man; where it does not apply, animal—white—inanimate. For it is at once necessary and impossible both that 'animal' should apply to some things which are white, and that 'white' should apply to some things which are inanimate. Similarly too if the relation is problematic; so the terms are valid for all cases.

Thus it is evident from the foregoing analysis that a syllogism does or does not result from a similar relation of the terms in assertoric and in apodeictic propositions; with this qualification, that, as we have seen, if the negative premiss is taken as assertoric the conclusion is problematic, while if the negative premiss is taken as apodeictic, the conclusion is both problematic and negative assertoric. [It is also clear that all the syllogisms are imperfect, and are completed by means of the figures already mentioned.]

XVII. In the second figure, when both premisses are problematic, there will be no syllogism, whether they are affirmative or negative, universal or particular; but when one premiss has an assertoric and the other a problematic sense, if it is the affirmative premiss that has the assertoric sense, there will never be a syllogism; but if it is the negative universal premiss, there will always be one. The same holds good when one of the premisses is assumed as apodeictic and the other as problematic. We must understand the sense of 'possibility' in the conclusions in these cases in the same way as before.
Πρώτον οὖν δεικτέον ὅτι οὐκ ἀντιστρέφει τὸ ἐν τῷ ἐνδέχεσθαι στερητικών, οἷον ἡ ἐν τῷ Α ἐνδέχεσθαι μηδενὶ τῷ Β. οὐκ ἀνάγκη καὶ τὸ Β ἐνδέχεσθαι μηδενὶ τῷ Α. Κείσθω γὰρ τοῦτο καὶ ἐνδεχόμεθα τὸ Β μηδενὶ τῷ Α ὑπάρχειν. οὐκόν ἐπεὶ ἀντιστρέφουσιν αἱ ἐν τῷ ἐνδέχεσθαι καταφάσεις ταῖς ἀποφάσεις καὶ αἱ ἐναντίαι καὶ αἱ ἀντικείμεναι, τὸ δὲ Β τῷ Α ἐνδέχεται μηδενὶ ὑπάρχειν, φανερὸν ὅτι καὶ παντὶ ἐνδέχοντο ἂν τὸ Β τῷ Α ὑπάρχειν. τοῦτο δὲ ψεύδος· οὐ γὰρ εἰ τὸ πεῖ δὲ παντὶ ἐνδέχεται, καὶ τὸτε τῷ ἐνδέχεται ἀναγκαῖον· ἀπὶ οὐκ ἀντιστρέψει τὸ στερητικόν.

Ἐτὶ δ’ οὖν καὶ διὰ τὸ μὲν Α τῷ Β ἐνδέχεσθαι μηδενὶ τῷ Β τῷ Α ἐνδέχεσθαι μηδενὶ τῷ Α, τὸ δὲ Β τῷ Α ἐνδέχεσθαι μηδενὶ τῷ Α, τὸ δὲ Β τῷ Α ἐνδέχεσθαι μηδενὶ τῷ Α, τὸ δὲ Β τῷ Α ἐνδέχεσθαι μηδενὶ τῷ Α. ἄληθες εἰπεῖν ὡς ἐνδέχεται μηδενὶ λευκῷ· πολλοῖς γὰρ εἴ ἀνάγκης οὐχ ὑπάρχει, τὸ δ’ ἀναγκαῖον οὐκ ἂν ἐνδεχόμενον. Ἀλλὰ μὴν οὖν ἐκ τοῦ ἄδυνάτου δειχθῆσαι ἀντιστρέφον, οἷον εἰ τις ἄξιώσειν, ἐπεὶ ψεύδος τὸ ἐνδέχεσθαι τὸ Β τῷ Α μηδενὶ ὑπάρχειν, ἄληθες τὸ μὴ ἐνδέχεσθαι μηδενὶ (φάσις γὰρ καὶ ἀποφασις), εἰ δὲ τούτ’, ἄληθες εἰς ἀνάγκης τοιάτων Α τὸ Β (The meaning of ἀντικείμεναι is very doubtful, but ‘contradictories’ (Jenkinson) must surely be wrong; no proposition is convertible with its contrary. Nor indeed is a proposition convertible with its contrary; but since B a A and B e A are contrary propositions in the assertoric mode, it is natural though inaccurate to describe them as such in the problematic mode (Alexander 221. 19). Since the only other problematic propositions which are convertible without change of quantity are the sub-contraries)
First we must show that there is no conversion of the negative problematic premiss; e.g., that if A may apply to no B, it does not necessarily follow that B may apply to no A. Let this be assumed; i.e. let us take it that B may apply to no A. Then since affirmations in the problematic sense convert with their negations, whether contrary or opposite, and since B may apply to no A, evidently B may also apply to all A. But this is false; for it does not necessarily follow that if one term may apply to all of another, the latter may also apply to all of the former. Therefore the negative (problematic) statement is not convertible.

Again, there is no reason why A should not possibly apply to no B, although B necessarily does not apply to some A. E.g., 'white' may not apply to any man (for it may also apply to every man), but it is not true to say that 'man' may apply to nothing that is white; for 'man' necessarily does not apply to many white things, and (as we have seen) the necessary is not possible.

Furthermore, this type of proposition cannot be shown to be convertible by reduction ad impossibile, e.g., if it were to be claimed that since it is false that B may apply to no A, it is true that it cannot apply to no A, since the latter statement is the contradictory of the former; and if this is so, it is true that B must apply to some A; therefore A and B are at least verbally opposed to each other (cf. 32 a 32-36, and II. 63 b 23-28, I suggest that they are meant here by ἀντικείμενα. Alexander notes this possibility (222. 2-4), but without much favour.

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υπάρχειν ὡστε καὶ τὸ Α τιν' τῶν Β', τοῦτο δ' ἀδύνατον. οὐ γὰρ εἰ μὴ ἐνδέχεται μηδενὶ τὸ Β τῷ Α, ἀνάγκη τιν' ὑπάρχειν. τὸ γὰρ μὴ ἐνδέχεσθαι μηδενὶ διχῶς λέγεται, τὸ μὲν εἰ εὲ ἀνάγκης τιν' ὑπάρχει, τὸ δ' εἰ εὲ ἀνάγκης τιν' μὴ ὑπάρχειν τὸ γὰρ ἐς ἀνάγκης τιν' τῶν Α μὴ ὑπάρχων οὐκ ἀληθῶς εἰπεῖν ἡς παντὶ ἐνδέχεται μὴ ὑπάρχειν, 20 ὡστε ὡστε τῷ των ὑπάρχον εὶς ἀνάγκης ὡς παντὶ ἐνδέχεται ὑπάρχειν. εἰ οὖν τις αξιοίη, ἐπεὶ οὐκ ἐνδέχεται τὸ Γ τῷ Δ παντὶ ὑπάρχειν, εἰς ἀνάγκης τιν' μὴ ὑπάρχει αὐτό, ωςοδός ἄν λαμβάνοι παντὶ γὰρ ὑπάρχει, ἀλλ' ὅτι εν εἰσιος εἰς ἀνάγκης ὑπάρχει, διὰ τοῦτο φαμεν οὐ παντὶ ἐνδέχεσθαι. ωστε τῷ 25 ἐνδέχεσθαι παντὶ ὑπάρχειν τὸ τ' εἰς ἀνάγκης τιν' ὑπάρχειν αντίκειται καὶ τὸ εἰς ἀνάγκης τιν' μὴ ὑπάρχειν. ὡμοίως δὲ καὶ τῷ ἐνδέχεσθαι μηδενὶ.

Δὴλον οὖν ὅτι πρὸς τὸ οὕτως ἐνδεχόμενον καὶ μὴ ἐνδεχόμενον, ὡς ἐν ἀρχῇ διωρίσαμεν, οὐ μόνον τὸ εἰς ἀνάγκης τιν' ὑπάρχειν ἀλλὰ καὶ τὸ εἰς ἀνάγκης τιν' μὴ ὑπάρχειν ληπτέον. τούτου δὲ ληφθέντος οὐδὲν συμβαίνει ἀδύνατον, ὡστ' οὐ γίγνεται συλλογισμός. φανερὸν οὖν ἐκ τῶν εἰρημένων ὃτι οὐκ ἀντιστρέφει τὸ στερητικὸν.

Τούτου δὲ δειχθέντος κείσθω τὸ Α τῷ μὲν Β ἐνδέχεσθαι μηδενὶ τῷ δὲ Γ παντὶ. διὰ μὲν οὖν τῆς ἀντιστροφῆς οὐκ ἐσται συλλογισμός· εἰρηται τῶν Β', τοῦτο δ' ἀδύνατον  unolgo.

1 τῶν Β', τοῦτο δ' ἀδύνατον. Maier: τῶν Β', τοῦτο δ' ἀδύνατον  unolgo.
2 μόνον om. ἈC.
3 καὶ om. Ἀf.
must also apply to some B; but this is impossible. (The reasoning is unsound,) because it does not follow that if B cannot apply to no A, it must apply to some. For there are two senses in which we say that it is not possible for a predicate to apply to none of a subject, viz. (a) if it necessarily applies to some, and (b) if it necessarily does not apply to some. For it is not true to say that that which necessarily does not apply to some A may not apply to every A, any more than it is true that that which necessarily applies to some may apply to all. Thus if it should be claimed that since it is not possible that C should apply to all D, it necessarily does not apply to some, the assumption would be false; for it does apply to all, but because in some cases it applies necessarily, for this reason we say that it is not possible for it to apply to all. Thus to the proposition ‘A may apply to all B’ is opposed not only ‘A must not apply to some B’ but also ‘A must apply to some B’; and similarly with the proposition ‘A may apply to no B.’

Thus it is clear that we must regard as opposed to that which is possible or not possible in the sense which we originally defined, not only that which necessarily applies to some, but also that which necessarily does not apply to some; and if we do this, no impossible conclusion follows (in the foregoing example), and so no syllogism results. Thus it is evident from what has been said that the negative (problematic) premiss is not convertible.

Now that this has been proved, let it be assumed that A may apply to no B, but to all C. Then there will be no syllogism by means of conversion; for it

A. Both premises problematic.

a 32 a 18.
ὑδὲ διὰ τοῦ ἀδυνάτου" τεθέντος γὰρ τοῦ Β παντὶ
tῷ Γ ἐνδέχεσθαι υπάρχειν3 οὐδὲν συμβαίνει ψεύδος·
en δέχοιτο γὰρ ἂν τὸ Α τῷ Γ καὶ παντὶ καὶ μηδὲν
υπάρχειν. ὅλως δ’ εἰ ἐστὶ συλλογισμός, δήλον ὅτι
τοῦ ἐνδέχεσθαι ἂν εἴη (διὰ τὸ μηδετέραν τῶν προ-
tάσεων εἰλήφθαι ἐν τῷ ὑπάρχειν), καὶ οὕτως ἥ
καταφατικὸς η ἀποτελεσματικός· οὐδετέρως δ’ ἐγχωρεῖ.
kαταφατικοῦ μὲν γὰρ τεθέντος δειχθῆσται διὰ
tῶν ὀρων ὅτι οὐκ ἐνδέχεται ὑπάρχειν, στερητικοῦ
de ὅτι τὸ συμπέρασμα οὐκ ἐνδεχόμενον άλλ’ ἀναγ-
καίον ἐστίν. ἐστὶν γὰρ τὸ μὲν Α λευκὸν τὸ δὲ Β
ἀνθρωπός ἐφ’ ὧ δὲ Γ ἰππος· τὸ δὴ Α, τὸ λευκὸν,
enδέχεται τῷ μὲν παντὶ τῷ δὲ μηδὲν ὑπάρχειν,
ἀλλὰ τὸ Β τῷ Γ οὔτε ὑπάρχειν ἐνδέχεται οὔτε
μὴ ὑπάρχειν. ὅτι μὲν οὖν ὑπάρχειν οὐκ ἐγχωρεῖ
φανερὸν, οὐδέτερος γὰρ ἰππος άνθρωπος· άλλ’ οὖδ’
enδέχεσθαι μὴ ὑπάρχειν, ἀνάγκη γὰρ μηδένα ἰππὸν
ἀνθρωπον εἶναι, τὸ δ’ ἀναγκαῖον οὐκ ἂν ἐνδεχό-
μενον. οὐκ ἂρα γίγνεται συλλογισμός.
Ὁμοίως δὲ δειχθῆσται καὶ ἂν ἀνάπαλιν τεθῇ
tὸ στερητικόν, κἂν ἀμφότεραι καταφατικαὶ ληφ-
θῶσιν ἡ στερητικαί· διὰ γὰρ τῶν αὐτῶν ὄρων
ἔσται ἡ ἀποδείξεις. καὶ ὅταν η μὲν καθόλου ή δ’
eν μέρει, η ἀμφότεραι κατὰ μέρος η ἀδιάριστοι,
ὁ όσαξῆς ἄλλως ἐνδέχεται μεταλαβεῖν τὰς προ-

1 παντὶ] μή παντὶ Maier.
2 υπάρχειν] μή υπάρχειν Maier.

* i.e. the major premiss AB.
* The sense is clearly wrong. This premiss must be intended
to contradict the conclusion (B may apply to no C) which it
is required to establish. The true contradictory would be
' B must apply to some C.'; this when combined with the
has been already observed that such a premiss as this * is not convertible. Nor, again, will there be a syllogism by reduction \( \text{ad impossibile} \); for if it is assumed that \( B \) may apply to all \( C \) no falsity results, because \( A \) might apply both to all and to none of \( C \). In fine, if there is a syllogism with these premisses, clearly it will be problematic, since neither of the premisses is taken in an assertoric sense; and this syllogism will be either affirmative or negative. But neither alternative is admissible; for if it is assumed to be affirmative, it can be shown by examples of terms that the predicate does not apply to the subject, and if to be negative, that the conclusion is not problematic but apodeictic. Let \( A \) be 'white,' \( B \) 'man' and \( C \) 'horse.' Then \( A \), \( i.e. \) white, may apply to all of the one and to none of the other; but it is not possible either that \( B \) should or should not apply to \( C \). That it is not possible that it should apply is evident, for no horse is a man. But neither is it possible that it should not apply; for it is necessary that no horse should be a man, and the necessary, as we have seen, \( c \) is not possible. Hence no syllogism results.

There will be a similar proof if the negative is taken with the other premiss instead, or if both premisses are taken as affirmative or both as negative; for the proof will be drawn from the same terms. The same holds good when one premiss is universal and the other particular, or when both are particular or indefinite, or for any other possible combination major premiss would give 'A may not apply to some \( C \),' which is not incompatible with the minor premiss. Maier's emendation gives the right sense, but it has no support from \( \text{mss. or commentators, and is at best a clumsy and unnatural form of expression.} \)

\( c \ 32 \ a \ 28. \)
πών ἀεὶ γὰρ ἔσται διὰ τῶν αὐτῶν ὅρων ἡ ἀπόδειξις. φανερὸν οὖν ὧτι ἀμφοτέρων τῶν προτάσεων κατὰ τὸ ἐνδέχεσθαι τυθεμένων οὐδεὶς γίγνεται συλλογισμός.

XVIII. Εἰ δ’ ἡ μὲν ὑπάρχειν ἡ δ’ ἐνδέχεσθαι

30 σημαίνει, τῆς μὲν κατηγορικῆς ὑπάρχειν τεθείσης τῆς δὲ στερητικῆς ἐνδέχεσθαι οὐδέποτ’ ἐσται συλλογισμός, οὔτε καθόλου τῶν ὅρων οὔτ’ ἐν μέρει λαμβανομένων ἡ ἀπόδειξες δ’ ἡ αὐτή καὶ διὰ τῶν αὐτῶν ὅρων. ὅταν δ’ ἡ μὲν καταφατική ἐνδέχεσθαι ἡ δὲ στερητικὴ ὑπάρχειν, ἐσται συλλογισμός. εἰλήφθως γὰρ τὸ Α τῷ μὲν Β μηδεὶς ὑπάρχειν τῷ δὲ Β παντὶ ἐνδέχεσθαι. ἀντιστραφείσος οὖν τοῦ στερητικοῦ τὸ τoled οὐδεὶς ὑπάρξει: τὸ δὲ Α παντὶ τῷ Β ἐνδέχεσθαι καὶ ὑπάρξει τὸ τῷ Β παντὶ Τ τῷ Γ ἐνδέχεσθαι: ἡ συλλογισμὸς ὅτι ἐνδέχεσθαι τὸ Β μηδεὶς τῷ Γ διὰ τοῦ πρῶτου σχῆματος. ὁμοίως δὲ καὶ εἰ πρὸς τῷ Γ τεθείη τὸ στερητικόν.

25 Ἐὰν δ’ ἀμφότεραι μὲν ὡςι στερητικαί, σημαίνῃ δ’ ἡ μὲν μὴ ὑπάρχειν ἡ δ’ ἐνδέχεσθαι μὴ ὑπάρχειν, δι’ αὐτῶν μὲν τῶν εἰλημμένων οὐδὲν συμβαίνει ἀναγκαίον, ἀντιστραφεῖσης δὲ τῆς κατὰ τὸ ἐνδέχεσθαι προτάσεως γίγνεται συλλογισμὸς ὅτι τὸ Β τῷ Γ ἐνδέχεται μηδεὶς ὑπάρχειν, καθάπερ ἐὰς τοῖς πρότερον. ἐσται γὰρ πάλιν τὸ πρῶτον σχῆμα. ἐὰν δ’ ἀμφότεραι τεθῶσι κατηγορικαί, οὐκ ἐσται συλλογισμός. ὁρεῖ τοῦ μὲν ὑπάρχειν ύγίεια—ζωήν—ἀνθρωπος, τοῦ δὲ μὴ ὑπάρχειν ύγίεια—ὑπόνοι—ἀνθρωπος.

Τον αὐτὸν δὲ τρόπον ἐξει κατὶ τῶν ἐν μέρει 40 συλλογισμῶν. ὅταν μὲν γὰρ ἦ τὸ καταφατικὸν
of premisses; for the proof will always be drawn from the same terms. Thus it is evident that if both the premisses are taken as problematic, no syllogism results.

XVIII. If, however, one premiss has an assertoric and the other a problematic sense, when the affirmative is assumed as assertoric and the negative as problematic there will never be a syllogism, whether the terms are taken as universal or as particular. The proof will be the same as before, and drawn from the same terms. But when the affirmative is problematic and the negative assertoric there will be a syllogism. Let it be assumed that A applies to no B but may apply to all C. Then if the negative premiss is converted, B will apply to no A. But it was assumed that A may apply to all C. Therefore a syllogism results by means of the first figure,\(^a\) to the effect that B may apply to no C. Similarly too if the negative be attached to C.\(^b\)

If both premisses are negative, one having a negative assertoric and the other a negative problematic sense, no necessary conclusion results by means of the assumptions as they are; but on the conversion of the problematic premiss a syllogism results to the effect that B may apply to no C, as in the previous example; for once again we shall have the first figure. If, however, both premisses are taken as affirmative, there will be no syllogism. Examples of terms where the predicate applies to the subject are health—animal—man; where it does not apply, health—horse—man.

The same principle will also obtain in the case of particular syllogisms. When it is the affirmative

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\(^a\) 34 b 19 ff. \(^b\) 35 a 6 ff.
23. ὑπάρχον, εἰτε καθόλου εἰτ᾽ ἐν μέρει ληφθέν, οὐδεὶς ἐσται συλλογισμός (τοῦτο δ᾽ ὁμοίως καὶ διὰ τῶν αὐτῶν ὅρων δείκνυται τοῖς πρότερον), ὅταν δὲ τὸ στερητικόν, ἐσται διὰ τῆς ἀντιστροφῆς, καθάπερ ἐν τοῖς πρότερον. πάλιν εὰν ἀμφω μὲν τὰ δια-
6 στήματα στερητικὰ ληφθῆ, καθόλου δὲ τὸ μὴ ὑπάρχειν, εἴς αὐτῶν μὲν τῶν προτάσεων οὐκ ἐσται τὸ ἀναγκαῖον, ἀντιστραφέντος δὲ τοῦ ἐνδέχεσθαι, καθάπερ ἐν τοῖς πρότερον, ἐσται συλλογισμός.

Ἐὰν δὲ ὑπάρχον μὲν ἡ τὸ στερητικόν ἐν μέρει δὲ ληφθῆ, οὐκ ἐσται συλλογισμός οὔτε καταφατικῆς οὔτε καταφατικῆς τῆς ἑτέρας προτάσεως οὐδ᾽ ὅταν ἀμφότεραι ληφθῶσιν ἄδιόριστοι, ἡ καταφατικὴ ἡ ἀποφατικὴ, ἡ κατὰ μέρος. ἀπόδειξις δ᾽ ἡ αὐτῇ καὶ διὰ τῶν αὐτῶν ὅρων.

XIX. Ἐὰν δ᾽ ἡ μὲν εἴς ἀνάγκης ἡ δ᾽ ἐνδέχεσθαι σημαίνῃ τῶν προτάσεων, τῆς μὲν στερητικῆς ἀναγκαίας οὔσης ἐσται συλλογισμός οὐ μόνον ὅτι ἐνδέχεται μὴ ὑπάρχειν ἀλλὰ καὶ ὅτι οὐχ ὑπάρχει, τῆς δὲ καταφατικῆς οὐκ ἐσται. κεῖσθω γὰρ τὸ A τῷ μὲν B ἐξ ἀνάγκης μηδενὶ ὑπάρχειν, τῷ δὲ Γ παντὶ ἐνδέχεσθαι. ἀντιστραφέσθησιν οὖν τῆς στερητικῆς οὐδὲ τὸ B τῷ A οὐδενὶ ὑπάρξει: τὸ δὲ A παντὶ τῷ Γ ἐνδέχεσθαι. γίγνεται δὴ πάλιν διὰ τοῦ πρώτου σχήματος ὁ συλλογισμὸς ὅτι τὸ B τῷ Γ ἐνδέχεται μηδενὶ ὑπάρχειν. ἀμα δὲ δῆλον ὅτι οὐδ᾽ ὑπάρχει τῷ B οὐδενὶ τῶν Γ. κεῖσθω γὰρ ὑπάρχειν οὖκοιν εἰ τὸ A τῷ B μηδενὶ ἐνδέχεται ¹ υπάρξει Cn, Bekker.

1 ὑπάρξει Cn, Bekker.
statement that is assertoric, whether it is taken as universal or as particular, there will be no syllogism (this can be proved by the same method and the same terms as before); but when it is the negative, there will be a syllogism by conversion, as in the previous examples. On the other hand, if both propositions are taken as negative and the negative assertoric is universal, no necessary conclusion will result from the premisses as they stand, but when the problematic statement is converted there will be a syllogism, as before.

If the negative statement is assertoric and taken as particular, there will be no syllogism, whether the other premiss is affirmative or negative; nor will there be a syllogism when both are taken as indefinite, whether affirmative or negative; or as particular. The proof is the same and is effected by the same terms.

**XIX.** If one premiss is apodeictic and the other has a problematic sense, when it is the negative premiss that is apodeictic, there will be a syllogism, not only to the effect that the predicate may not apply to the subject, but also that it does not apply; but when it is the affirmative premiss, there will be no syllogism. For let it be assumed that A necessarily applies to no B, but may apply to all C. Then by the conversion of the negative premiss, B will also apply to no A; and it was assumed that A may apply to all C. Thus once again by means of the first figure a syllogism results to the effect that B may apply to no C. Moreover it is obvious also that B does not apply to any C. For let it be assumed that it does apply. Then if A cannot apply to any B,

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a Se. universal.

b Cf. 36 a 15 ff.
Τὸ δὲ Β ὑπάρχει τινὶ τῶν Γ, τὸ Α τῶν Γ τινὶ οὐκ ἐνδεχεται. Ἀλλὰ παντὶ ὑπέκειτο ἐνδεχεσθαι.

Τὸν αὐτὸν δὲ τρόπον δειχθῆσεται καὶ εἰ πρὸς τῷ Γ τεθείη τὸ στερητικὸν.

Πάλιν ἔστω τὸ κατηγορικὸν ἀναγκαίον θάτερον δ᾽ ἐνδεχόμενον, καὶ τὸ Α τῷ μὲν Β ἐνδεχόσθω μηδενὶ τῷ δὲ Γ παντὶ ὑπαρχέτω εξ ἀνάγκης. οὕτως οὖν ἐχόντων τῶν ὅρων οὐδεὶς ἐσται συλλογισμὸς· συμβαίνει γὰρ τὸ Β τῷ Γ εξ ἀνάγκης μὴ ὑπάρχειν. ἐστω γὰρ τὸ μὲν Α λευκὸν ἐφ᾽ ὃ δὲ τὸ Β ἀνθρωπος ἐφ᾽ ὃ δὲ τὸ Γ κύκνος· τὸ δὴ λευκὸν κύκνῳ μὲν εξ ἀνάγκης ὑπάρχει ἀνθρώπῳ δ᾽ ἐνδεχέσθαι μηδενὶ, καὶ ἀνθρώπος οὐδεὶς κύκνῳ εξ ἀνάγκης. ὅτι μὲν οὖν του ἐνδεχεσθαι οὐκ ἔστει συλλογισμὸς φανερὸν· τὸ γὰρ εξ ἀνάγκης οὐκ ἂν ἐνδεχόμενον.

Ἀλλὰ μὴν οὐδὲ τοῦ ἀναγκαίου· τὸ γὰρ ἀναγκαίον ἡ εξ ἀμφοτέρων ἀναγκαίων ἡ εκ τῆς στερητικῆς συνεβαίνειν. ἐπὶ δὲ καὶ ἐγχωρεῖ τούτων κειμένων τὸ Β τῷ Γ ὑπάρχειν· οὐδεὶς γὰρ κωλύει τὸ μὲν Γ ὑπὸ τὸ Β εἶναι τὸ δὲ Α τῷ μὲν Β παντὶ ἐνδεχεσθαι τῷ δὲ Γ εξ ἀνάγκης ὑπάρχειν, οἷον εἰ τὸ μὲν Γ εἰη ἐγρηγορὸς τὸ δὲ Β ἤφων τὸ δ᾽ εφ᾽ ἂν ἐγρηγοροῖς· τῷ μὲν γὰρ ἐγρηγοροῖς εξ ἀνάγκης κίνησις, ἤφων δὲ παντὶ ἐνδεχεται, καὶ πᾶν τὸ ἐγρηγοροῖς ἤφων. φανερὸν οὖν ὅτι οὐδὲ τοῦ μὴ ὑπάρχειν, εἰπερ οὕτως ἐχόντων ἀνάγκη ὑπάρχειν.
and B applies to some C, A cannot possibly apply to some C. But it was assumed that it may apply to all.

The proof can also be effected in the same way supposing that the negative be attached to C.

On the other hand, let the affirmative statement be apodeictic and the other problematic: let A possibly apply to no B, and necessarily apply to all C. Then when the terms are in this relation there will be no syllogism; for it can so happen that B necessarily does not apply to C. E.g., let A be 'white,' B 'man' and C 'swan.' Then white necessarily applies to swan, but may apply to no man; and 'man' necessarily applies to no swan. Thus it is evident that there is no syllogism of the problematic type; for we have seen \(b\) that the necessary is not possible.

Nor again will there be an apodeictic syllogism; for we saw \(c\) that an apodeictic conclusion (only) results when both premisses are apodeictic, or when the negative premiss is apodeictic. Again, it is possible, with the terms taken in this way, for B to apply to C. For there is no reason why C should not fall under B in such a way that A may apply to all B, but must apply to all C; e.g., if C were 'waking,' B 'animal' and A 'motion'; for that which is awake must have motion, and every animal may have motion, and every waking thing is an animal. Thus it is evident that there is no negative assertoric conclusion either, since with this arrangement of terms the conclusion is assertoric and affirmative.

\(a\) This is a fallacy. Cf. note on 36 a 15.

\(b\) 32 a 28.

\(c\) 30 b 7, 31 a 21.
οὐδὲ δὴ τῶν ἀντικειμένων καταφάσεων, ὡστ' οὔδεις ἐσται συλλογισμός.

5 Ὅμως δὲ δειχθῆσαι καὶ ἀνάπαυν τεθείσης τῆς καταφατικῆς.

'Εάν δ' ὀμοιοσχήμονες ἃς αἱ προτάσεις, στερητικῶν μὲν οὐσῶν ἀεὶ γίγνεται συλλογισμός ἀντιστραφείσης τῆς κατὰ τὸ ἐνδέχεσθαι προτάσεως, καθάπερ ἐν τοῖς πρώτον. εἰλήφθω γὰρ τὸ Α τῷ Μὲν Β ἐξ ἀνάγκης μὴ ἑχεῖν, τῷ δὲ Γ', ἐνδέχεσθαι μὴ ὑπάρχειν, ἀντιστραφείσων οὖν τῶν προτάσεων τὸ μὲν Β τῷ A οὔδειν ὑπάρχει τὸ δὲ A παντὶ τῷ Γ ἐνδέχεται· γίγνεται δὴ τὸ πρῶτον σχήμα. κἂν εἰ πρὸς τῷ Γ τεθείῃ τὸ στερητικὸν ὠσαύτως.

'Εάν δὲ κατηγορικὰ τεθῶσιν, οὐκ ἐσται συλλογισμός. τοῦ μὲν γὰρ μὴ ὑπάρχειν ἡ τοῦ εὖ ἀνάγκης μὴ ὑπάρχειν φανερὸν ὅτι οὐκ ἐσται διὰ τὸ μὴ εἰλήφθαι στερητικὴν προτασιν μήτ' ἐν τῷ ὑπάρχειν μήτ' ἐν τῷ εὐ ἀνάγκης ὑπάρχειν. ἀλλὰ μὴν οὐδὲ οὗ τὸ ἐνδέχεσθαι μὴ ὑπάρχειν· εὐ ἀνάγκης γὰρ οὐτως ἐχόντων τὸ B τῷ Γ οὐχ ὑπάρξει, οἴον εἰ τὸ μὲν A τεθείῃ λευκὸν ἐφ' ὁ δὲ τὸ B κύκνος τὸ δὲ Γ ἀνθρωπος. οὐδὲ γε τῶν ἀντικειμένων καταφάσεων, ἐπεὶ δεδεικται τὸ B τῷ Γ εὐ ἀνάγκης οὐχ ὑπάρξῃ. οὐκ ἂρα γίγνεται συλλογισμός ὀλως.

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Nor again is there a conclusion which takes the form of any of the opposite statements. Therefore there will be no syllogism.

There will be a similar proof if the affirmative premiss occupies the other position.

If the premisses are similar in quality, where they are negative a syllogism always results on the conversion of the problematic premiss, as before. Let it be assumed that A necessarily does not apply to B, and may not apply to C. Then on the conversion of the premisses B applies to no A, and A may apply to all C. Thus the first figure results. Similarly also if the negative statement relates to C.

If, however, the premisses are taken as affirmative, there will be no syllogism. It is evident that there will be none of the negative assertoric or of the negative apodeictic type, since no negative premiss has been assumed, either in the assertoric or in the apodeictic sense. Furthermore, there will be none of the negative problematic type; for with the terms in this relation B will necessarily not apply to C; e.g., if A is taken to be 'white,' B 'swan' and C 'man.' Nor can we conclude any of the opposite affirmations, because we have shown that B necessarily does not apply to C. Thus no syllogism at all results.

The same will also hold good in the case of particular syllogisms.

a Aristotle has proved that in each of the three modes a negative conclusion is impossible; he now adds that the corresponding affirmatives are also impossible (sc. because an affirmative conclusion can only be drawn from two affirmative premisses).

b i.e., if the minor premiss is apodeictic. The problematic premiss is originally negative, but becomes affirmative by conversion.

c By the examples just cited.

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δέχεσθαι καὶ τοῦ μὴ ὑπάρχειν (ἀπόδειξις δὲ διὰ τῆς ἀντιστροφῆς), ὅταν δὲ τὸ καταφατικὸν, οὐδὲνοτε τὸν αὐτὸν γὰρ τρόπον δειχθῆσται δὲν καὶ ἐν τοῖς καθόλου, καὶ διὰ τῶν αὐτῶν ὅρων.

Οὖν ὅταν ἀμφότεραι ληφθῶσιν καταφατικαὶ καὶ γὰρ τούτον ἑαυτὴ ἀπόδειξις ἑ καὶ πρότερον.

Ὅταν δὲ ἀμφότεραι μὲν στερητικαὶ καθόλου δὲ καὶ ἀναγκαῖα ἡ τὸ μὴ ὑπάρχειν σημαίνουσα, δὴ αὐτῶν μὲν τῶν εὐθυμημένων οὐκ ἔσται τὸ ἀναγκαῖον, ἀντιστραφεῖσθαι δὲ τῆς κατὰ τὸ ἐνδέχεσθαι πρὸς τάσεως ἐσται συλλογισμός, καθάπερ ἐν τοῖς πρότερον.

Ἐὰν δὲ ἀμφότεραι ἀδιόριστοι ἢ ἐν τεθῶσιν, ἐξ τῷ ὑπομένων ἀπόδειξις ἡ αὐτὴ καὶ διὰ τῶν αὐτῶν ὅρων.

Φανερὸν οὖν ἐκ τῶν εἰρημένων ὅτι τῆς μὲν στερητικῆς τῆς καθόλου τιθεμένης ἀναγκαίας ἀδεί γίγνεται συλλογισμός, οὐ μόνον τοῦ ἐνδέχεσθαι μὴ ὑπάρχειν ἀλλὰ καὶ τοῦ μὴ ὑπάρχειν, τῆς δὲ καταφατικῆς οὐδέποτε καὶ ὅτι τὸν αὐτὸν τρόπον ἐξόντων ἐν τε τοῖς ἀναγκαίοις καὶ ἐν τοῖς ὑπάρχουσι γίγνεται τε καὶ οὐ γίγνεται συλλογισμός. οὕτως δὲ καὶ ὅτι πάντες ἀτελεῖς οἱ συλλογισμοὶ, καὶ ὅτι τελειώνται διὰ τῶν προειρημένων σχημάτων.

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* A fallacy; cf. notes on 36 a 15, 35 a 24.

38 a 26–b 4.

38 b 13–23.

Cf. 36 b 12–18.

Cf. 36 a 15, 35 a 24, b 26.

Actually by the first figure only.
ticular syllogisms. When the negative statement is universal and apodeictic, a syllogism will always result to give both a problematic and a negative assertoric conclusion (the proof will proceed by conversion); but when the affirmative statement is universal and apodeictic, there will never be a syllogism. The proof will be effected in the same way as in universal syllogisms, and by means of the same terms.

Nor will there be a syllogism when both premisses are taken as affirmative. The proof of this also is the same as before.

When, however, both premisses are negative, and that which has the non-attributive sense is universal and apodeictic, although there will be no necessary conclusion from the assumptions as they are, when the problematic premiss is converted there will be a syllogism, as before.

If, however, both premisses are assumed as indefinite or particular, there will be no syllogism. The proof is the same as before, and is effected by means of the same terms.

Thus it is evident from the foregoing analysis (a) that when the negative universal premiss is taken as apodeictic a syllogism always results, giving not only a conclusion of the negative problematic type but also one of the negative assertoric type, but when the affirmative universal premiss is so taken a syllogism never results; (b) that a syllogism results or does not result from the same arrangement of terms in apodeictic as in assertoric propositions. It is obvious also that all these syllogisms are imperfect, and that they are completed by means of the figures already mentioned.
μενον" καὶ ὅταν ἡ ἡ δ᾽ ὑπάρχειν ὅταν δ᾽ ἡ ἑτέρα τεθῇ ἀναγκαία, ἐὰν μὲν ἦ κατα-
πέρασμα οὔτε ὑπάρχειν ἔσται, καθάπερ καὶ ἐν τοῖς πρότερον. ληπτέον δὲ καὶ ἐν τούτοις ὁμοίως τὸ ἐν τοῖς συμπεράσμασιν ἐνδεχόμενον.

'Εστωσαν δὴ πρῶτον ἐνδεχόμεναι, καὶ τὸ Α καὶ τὸ Β παντὶ τῷ Γ ἐνδεχόσθω ὑπάρχειν. ἐπεὶ οὐν ἀντιστρέφει τὸ καταφατικὸν ἐπὶ μέρους τὸ δὲ Β παντὶ τῷ Γ ἐνδέχεται, καὶ τὸ Γ τινὶ τῷ Β ἐνδέχοιτ' ἀν' ὡστ' εἴ τὸ μὲν Α παντὶ τῷ Γ ἐν-
δέχεται τὸ δὲ Γ τινὶ τῶν Β, καὶ τὸ Α τινὶ τῶν Β ἐν-
δέχεται γίγνεται γὰρ τὸ πρῶτον σχῆμα. καὶ εἰ τὸ μὲν Α ἐνδέχεται μηδενὶ τῷ Γ ὑπάρχειν τὸ δὲ Β παντὶ τῷ Γ, ἀνάγκη τὸ Α τινὶ τῷ Β ἐνδέχεσθαι μὴ ὑπάρχειν ἐσται γὰρ πάλιν τὸ πρῶτον σχῆμα διὰ τῆς ἀντιστροφῆς. εἰ δ' ἀμφότεραι στερητικαὶ τεθείησαν, ἐξ αὐτῶν μὲν τῶν εἰλημμένων οὐκ ἐσται τὸ ἀναγκαῖον, ἀντιστραφεῖσθων δὲ τῶν προτάσεων ἐσται συλλογισμός, καθάπερ ἐν τοῖς πρότερον. εἰ γὰρ τὸ Α καὶ τὸ Β τῷ Γ ἐνδέχεται μὴ ὑπάρχειν, ἐάν μεταληφθῇ τὸ ἐνδέχεσθαι μὴ ὑπάρχειν, πάλιν ἐσται τὸ πρῶτον σχῆμα διὰ τῆς ἀντιστροφῆς.

Εἰ δ' ο μὲν ἐστι καθόλου τῶν ὄρων ὁ δ' ἐν μέρει, τὸν αὐτὸν τρόπον ἐχοντων τῶν ὄρων ὃνπερ ἐπὶ

1 μῆν: om. cett.
XX. In the last figure when both premisses are problematic, and also when only one is problematic, there will be a syllogism. When both the premisses have a problematic sense the conclusion will also be problematic, and likewise when one premiss is problematic and the other assertoric. When, however, the other premiss is apodeictic, if it is affirmative, the conclusion will be neither apodeictic nor assertoric; but if it is negative, there will be a negative assertoric conclusion, as before.\(^a\) In these syllogisms also the sense of 'possibility' in the conclusions must be understood in the same way as before.\(^b\)

First, then, let the premisses be problematic, and let both A and B possibly apply to all C. Then since the affirmative statement is convertible as particular, and since B may apply to all C, C may also apply to some B. Thus if A may apply to all C, and C to some B, A may also apply to some B; for we get the first figure. And if A may apply to no C, and B may apply to all C, it necessarily follows that A may not apply to some B; for again we shall have the first figure by conversion. But supposing that both premisses are assumed as negative, there will be no necessary conclusion from the assumptions as they stand, but when the premisses are converted there will be a syllogism, as before; for if both A and B may not apply to C, if we substitute in each case the expression 'may apply,' we shall have the first figure again by conversion.

If one of the terms is universal and the other particular, there will or will not be a syllogism with A. Both premisses problematic.

\(^a\) Cf. 36 a 15, 38 a 24, b 26, 40.

\(^b\) 33 b 30, 34 b 27, 35 b 32, 36 b 33.
 Aristotelē

ποὺ ὑπάρχειν ἐσται τε καὶ οὐκ ἐσται συλλογισμός. ἐνδεχέσθω γὰρ τὸ μὲν Α παντὶ τῷ Γ τοῦ δὲ Β τινὶ τῷ Γ ὑπάρχειν ἐσται δὴ πάλιν τὸ πρῶτον σχῆμα τῆς ἐν μέρει προτάσεως ἀντιστραφεῖτος· εἰ γὰρ τὸ Α παντὶ τῷ Γ τοῦ δὲ Γ τινὶ τῶν Β, τὸ Α τινὶ τῶν Β ἐνδέχεται· καὶ εἰ πρὸς τῷ ΒΓ τεθείη τὸ καθόλου, ὡσαυτὸς. ὁμοίως δὲ καὶ εἰ τὸ μὲν ΑΓ στερητικὸν εἰ ὁ δὲ ΒΓ καταφατικὸν ἐσται γὰρ πάλιν τὸ πρῶτον σχῆμα διὰ τῆς ἀντιστροφῆς.

Εἰ δ᾽ ἀμφότερα στερητικαὶ τεθείσαι, ἡ μὲν καθόλου ἡ δ᾽ ἐν μέρει, δι᾽ αὐτῶν μὲν τῶν εὐλημ-μένων οὐκ ἐσται συλλογισμός, ἀντιστραφεῖσων δ᾽ ἐσται, καθάπερ ἐν τοῖς πρότερον.

Όταν δὲ ἀμφότερα ἀδιόριστοι ἢ ἐν μέρει ληφθῶσιν οὐκ ἐσται συλλογισμός· καὶ γὰρ παντὶ ἀνάγκη τὸ Α τῷ Β καὶ μηδενὶ ὑπάρχειν. ὅροι τοῦ ὑπάρχειν ζώον—ἀνθρώπος—λευκόν, τοῦ μὴ ὑπάρχειν ἔπος—ἀνθρώπος—λευκόν, μέσον λευκόν.

XXI. 'Εὰν δὲ ἡ μὲν ὑπάρχειν ἡ δ᾽ ἐνδεχεσθαι σημαίνῃ τῶν προτάσεων, τὸ μὲν συμπέρασμα ἐσται ὅτι ἐνδέχεται καὶ οὐ̣χ ὅτι ὑπάρχει, συλ-λογισμὸς δ᾽ ἐσται τῶν αὐτῶν τρόπον ἔχουσαν τῶν ὄρων ὅν καὶ ἐν τοῖς πρὸτερον. ἐστώσαι γὰρ πρῶτον κατηγορικός, καὶ τὸ μὲν Α παντὶ τῷ Γ ὑπαρχέτω τοῦ δὲ Β παντὶ ἐνδεχόσθω ὑπάρχειν. ἀντιστραφέντος οὖν τοῦ ΒΓ τοῦ πρῶτον ἐσται σχῆμα, καὶ τὸ συμπέρασμα ὅτι ἐνδέχεται τὸ Α τινὶ τῶν Β ὑπάρχειν· ὅτε γὰρ ἡ ἐτέρα τῶν προ-

Οὐδὲν ὑπάρχειν ἐσται τε καὶ οὐκ ἐσται συλλογισμός. ἐνδεχεσθω γὰρ τὸ μὲν Α παντὶ τῷ Γ τοῦ δὲ Β τινὶ τῷ Γ ὑπάρχειν· ἐσται δὴ πάλιν τὸ πρῶτον σχῆμα τῆς ἐν μέρει προτάσεως ἀντιστραφεῖτος· εἰ γὰρ τὸ Α παντὶ τῷ Γ τοῦ δὲ Γ τινὶ τῶν Β, τὸ Α τινὶ τῶν Β ἐνδέχεται· καὶ εἰ πρὸς τῷ ΒΓ τεθείη τὸ καθόλου, ὡσαυτὸς. ὁμοίως δὲ καὶ εἰ τὸ μὲν ΑΓ στερητικὸν εἰ ὁ δὲ ΒΓ καταφατικὸν ἐσται γὰρ πάλιν τὸ πρῶτον σχῆμα διὰ τῆς ἀντιστροφῆς. Εἰ δ᾽ ἀμφότερα στερητικαὶ τεθείσαι, ἡ μὲν καθόλου ἡ δ᾽ ἐν μέρει, δι᾽ αὐτῶν μὲν τῶν εὐλημ-μένων οὐκ ἐσται συλλογισμός, ἀντιστραφεῖσων δ᾽ ἐσται, καθάπερ ἐν τοῖς πρότερον.

Όταν δὲ ἀμφότερα ἀδιόριστοι ἢ ἐν μέρει ληφθῶσιν οὐκ ἐσται συλλογισμός· καὶ γὰρ παντὶ ἀνάγκη τὸ Α τῷ Β καὶ μηδενὶ ὑπάρχειν. ὅροι τοῦ ὑπάρχειν ζώον—ἀνθρώπος—λευκόν, τοῦ μὴ ὑπάρχειν ἔπος—ἀνθρώπος—λευκόν, μέσον λευκόν.

ΧΧΙ. 'Εὰν δὲ ἡ μὲν ὑπάρχειν ἡ δ᾽ ἐνδεχεσθαι σημαίνῃ τῶν προτάσεων, τὸ μὲν συμπέρασμα ἐσται ὅτι ἐνδέχεται καὶ οὐ̣χ ὅτι ὑπάρχει, συλ-

λογισμὸς δ᾽ ἐσται τῶν αὐτῶν τρόπον ἔχουσαν τῶν ὄρων ὅν καὶ ἐν τοῖς πρότερον. ἐστώσαι γὰρ πρῶτον κατηγορικός, καὶ τὸ μὲν Α παντὶ τῷ Γ ὑπαρχέτω τοῦ δὲ Β παντὶ ἐνδεχόσθω ὑπάρχειν. ἀντιστραφέντος οὖν τοῦ ΒΓ τοῦ πρῶτον ἐσται σχῆμα, καὶ τὸ συμπέρασμα ὅτι ἐνδέχεται τὸ Α τινὶ τῶν Β ὑπάρχειν· ὅτε γὰρ ἡ ἐτέρα τῶν προ-

τῷ ΒΓ) τῷ Cadn.
the same arrangement of terms as in assertoric syllogisms. Let it be assumed that A may apply to all C, and B to some C. Then by the conversion of the particular premiss we shall again have the first figure; for if A may apply to all C, and C to some B, then A may apply to some B. The same will be true if the universal statement relates to the premiss BC. Similarly also if the premiss AC is negative and BC affirmative; for conversion will again give us the first figure.

If both premisses are assumed as negative, the one universal and the other particular, there will be no conclusion from the assumptions as they stand, but on their conversion we shall have a syllogism, as before.

When, however, both premisses are taken as indefinite or particular, there will be no syllogism; for A necessarily applies both to none and to all of B. Examples of terms where the predicate applies to the subject are animal—man—white; where it does not apply, horse—man—white. White is the middle term.

XXI. If one of the premisses has an assertoric and the other a problematic sense, the conclusion will be problematic, not assertoric, and a syllogism will result from the same arrangement of terms as in the previous examples. First let the terms be positive: let A apply to all C, and let B possibly apply to all C. Then the conversion of the premiss BC will give us the first figure, and the conclusion that A may apply to some B; for we have seen

\[ \text{B. One assertoric and one problematic premiss.} \]

\[ \text{(1) Both premisses universal.} \]

\[ b \text{ i.e. terms can be found (as in the examples which follow) to exhibit both these relations.} \]

\[ c \text{ In ch. xx.} \]

\[ d \text{ 33 b 25-40.} \]
ἐνδεχόμενον εν τῷ πρώτῳ σχήματι σημαίνοι ἐνδεχεσθαι, καὶ τὸ συμπέρασμα ἣν ἐνδεχόμενον. ὅμως δὲ καὶ εἰ τὸ μὲν ΒΓ ὑπάρχει τὸ δὲ ΑΓ ἐνδεχεσθαι, καὶ εἰ τὸ μὲν ΑΓ στερητικὸν τὸ δὲ ΒΓ κατηγορικὸν, ὑπάρχοι δὲ ὁποτερων, ἀμφοτέρως ἐνδεχόμενον ἔσται τὸ συμπέρασμα· γίγνεται γὰρ

πάλιν τὸ πρῶτον σχήμα, δεδεικται δ' ὅτι τῆς ἐτέρας προτάσεως ἐνδεχεσθαι σημαίνονται εν αὐτῷ καὶ τὸ συμπέρασμα ἔσται ἐνδεχόμενον. εἰ δὲ τὸ [ἐνδεχόμενον] στερητικὸν τεθεὶς πρὸς τὸ ἑλλειπτον ἄκρον ἢ καὶ ἀμφῶς ληφθεὶς στερητικά, δι' αὐτῶν μὲν τῶν κειμένων οὐκ ἔσται συλλογισμός.

ἀντιστράφεται δ' ἐσται, καθάπερ ἐν τοῖς πρότερον.

Εἰ δ' ἡ μὲν καθόλου τῶν προτάσεων ἡ δ' ἐν μέρει, κατηγορικῶν μὲν υστέρων ἀμφοτέρων ἢ τῆς μὲν καθόλου στερητικῆς τῆς δ' ἐν μέρει καταφατικῆς, ὅ αὐτὸς τρόπος ἔσται τῶν συλλογισμῶν·

πάντες γὰρ περαινοῦνται διὰ τοῦ πρῶτου σχήματος· ὥστε φανερὸν ὅτι τοῦ ἐνδεχέσθαι καὶ οὔ τοῦ ὑπάρχειν ἔσται δ'' συλλογισμός. εἰ δ' ἡ μὲν καταφατικὴ καθόλου ἡ δὲ στερητικῆ ἐν μέρει, διὰ τοῦ ἁπάντων ἔσται ἡ ἀπόδειξις. ὑπάρχειν γὰρ τὸ μὲν Β παντὶ τῷ Γ, τὸ δὲ Α ἐνδεχεσθω τινὶ τῷ Γ μὴ ὑπάρχειν· ἀνάγκη δὴ τὸ Α ἐνδεχεσθαι τινὶ τῷ Β μὴ ὑπάρχειν. εἰ γὰρ παντὶ τῷ Β τὸ Α ὑπάρχει εὖ ἀνάγκης τὸ δὲ Β παντὶ τῷ Γ κεῖται ὑπάρχειν, τὸ Α παντὶ τῷ Γ εὖ ἀνάγκης ὑπάρχει (τοῦτο γὰρ δεδεικται πρότερον)· ἀλλ' ὑπέκειτο τοι ἐνδεχεσθαι μὴ ὑπάρχειν.

"Οταν δ' ἀδιόριστοι ἦ ἐν μέρει ληφθῶσιν ἀμφότεραι, οὐκ ἔσται συλλογισμός. ἀπόδειξις δ' ἡ
that when one of the premisses in the first figure has a problematic sense, the conclusion is also problematic. Similarly too if BC is assertoric and AC problematic; or if AC is negative and BC affirmative, and either is assertoric: in both cases the conclusion will be problematic, for again we get the first figure, and it has been shown that in it when one of the premisses is problematic in sense the conclusion will also be problematic. If, however, the negative problematic statement is attached to the minor term, or if both statements are taken as negative, no syllogism will result from the assumptions as they stand, but on their conversion there will be a syllogism, as before.

If one of the premisses is universal and the other particular, when both are affirmative, or when the universal is negative and the particular affirmative, the syllogisms will be effected in the same way; for all the conclusions are reached by means of the first figure. Hence it is evident that the conclusion will be problematic, not assertoric. If, however, the affirmative premiss is universal and the negative particular, the proof will be per impossibile. Let B apply to all C, and let A possibly not apply to some C. Then it necessarily follows that A may not apply to some B. For if A necessarily applies to all B, and B is still assumed to apply to all C, A will necessarily apply to all C; for this has been proved already. But it was assumed that it may not apply to some.

When both premisses are taken as indefinite or particular, there will be no syllogism. The proof

\[30 \text{a 15-23.}\]

1 om. n, comm., Waitz.
2 \(\delta\) om. AC Bekker.
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αὕτη ἢ καὶ ἐν τοῖς καθόλου, καὶ διὰ τῶν αὐτῶν ὅρων.

XXII. Ἐι δ᾽ ἐστίν ἡ μὲν ἀναγκαία τῶν προτάσεων ἡ ἐν ὑποθετημένη, κατηγορικῶν μὲν ὄντων τῶν ὅρων ἀεὶ τοῦ ἐνδεχομένου ἀναγκαίου, ὅταν δ᾽ ἢ τὸ μὲν κατηγορικὸν τὸ δὲ στερητικὸν, ἐὰν μὲν ἢ τὸ καταφατικὸν ἀναγκαίον, τοῦ ἐνδεχομένου μὴ ὑπάρχειν, ἡμὶ δὲ τὸ στερητικὸν, καὶ τοῦ ἐνδεχομένου μὴ ὑπάρχειν καὶ τοῦ μὴ ὑπάρχειν τοῦ δ᾽ ἐξ ἀνάγκης μὴ ὑπάρχειν οὐκ ἔσται συλλογισμός, ἀναγκαῖον τοῦ μὲν κατηγορικὸν τὸ δὲ στερητικὸν, δὰν βὲν ἀναγκαίον τοῦ σθαίνειν, ἐὰν δὲ τὸ στερητικὸν, καὶ τοῦ ἐνδεχομένου μὴ ὑπάρχειν καὶ τοῦ μὴ ὑπάρχειν τοῦ δ᾽ ἐξ ἀνάγκης μὴ ὑπάρχειν οὐκ ἔσται συλλογισμός, ἀναγκαῖον τοῦ μὲν κατηγορικὸν τὸ δὲ στερητικὸν.

Ἔστωσαν δὴ οἱ πρῶτοι οἱ ὅροι, καὶ τὸ μὲν Α παντὶ τῷ Γ υπάρχειν ἐξ ἀνάγκης, τὸ δὲ Β [τῷ Γ]: παντὶ ἐνδεχόμενον ὑπάρχειν. ἐπὶ οὖν τὸ μὲν Α παντὶ τῷ Γ ἀνάγκη, τὸ δὲ Γ των τῶν τῷ Β ἐνδεχομένου, καὶ τὸ Α των τῷ Β ἐνδεχόμενον ἔσται καὶ οὐχ ὑπάρχον. οὕτω γάρ συνεπιπτείν ἐπί τοῦ πρώτου σχήματος. ὡμοίως δὲ δεικθήσεται καὶ ἐφ᾽ τὸ μὲν ΒΓ τεθείς ἀναγκαῖον τὸ δὲ ΑΓ ἐνδεχόμενον.

Πάλιν ἐστὼ τὸ μὲν κατηγορικὸν τὸ δὲ στερητικὸν, ἀναγκαῖον δὲ τὸ κατηγορικὸν, καὶ τὸ μὲν τῷ πρώτῳ σχήματι τῷ Γ ὑπάρχειν τῷ Β παντὶ ὑπάρχεσθαι ἐξ ἀνάγκης. ἔσται δὴ πάλιν τὸ πρώτον σχῆμα, καὶ [γαρ] ἡ στερητικὴ πρότασις ἐνδεχόμενον υπηρείν: φανερὸν οὖν ὅτι τὸ συμπέρασμα ἐσται ἐνδεχόμενον: οὔτε γαρ οὕτως ἔχοιει αἱ προτάσεις ἐν τῷ πρώτῳ σχήματι, καὶ τὸ συμπέρασμα ἔν ἐνδεχόμενον.

Εἰ δ᾽ ἡ στερητικὴ πρότασις ἀναγκαία, τὸ συμ-
is the same as in the case of universal syllogisms, and is obtained by means of the same terms.

XXII. If one of the premisses is apodeictic and the other problematic, when the terms are positive the conclusion will always be problematic; but when one is positive and the other negative, if the affirmative statement is apodeictic, the conclusion will be negative and problematic, but if the negative statement is apodeictic the conclusion will be negative problematic and negative assertoric; there will be no negative apodeictic conclusion, just as there was none in the other figures.

Thus let the terms first be positive, and let A necessarily apply to all C, and B possibly apply to all C. Then since A must apply to all C, and C may apply to some B, A will also apply, in a problematic and not in an assertoric sense, to some B; for we have seen that this is the consequence in the first figure. The proof will be similar also if the premiss BC be assumed as apodeictic and AC as problematic.

Next, let one statement be affirmative and the other negative, the affirmative being apodeictic; and let A possibly apply to no C, and B necessarily apply to all C. Then we shall again have the first figure; and the negative premiss has the problematic sense. Thus it is evident that the conclusion will be problematic; for we saw that when the premisses are in this relation in the first figure the conclusion is also problematic.

If, however, the negative premiss is apodeictic,
τασις. ὅτε δ᾽ οὕτως εἶ: αἱ προτάσεις, συνέβαινε ἐν τοῖς πρότερον, ἐὰν δ᾽ ἀναγκαῖον, οὐκ ἔσται" καὶ γὰρ παντὶ ἀνάγκη καὶ οὐδενὶ ἐνδέχεται a it ὕροι τοῦ παντὶ ὑπάρχει, ὥστε καὶ τὸ Λ τῷ Γ ἀνάγκη τινὶ μη ὑπάρχει. ὅταν δὲ τὸ στερητικὸν τεθῇ πρὸς τὸ ἔλαττον ἀκρον, εὰν μὲν ἐνδεχόμενον, ἐσται συλ-
λογισμὸς μεταληθεύσεως τῆς προτάσεως, καθάπερ εἰ τοῖς πρότερον, εὰν ὁ ἀναγκαῖον, συν ἐσται· καὶ γάρ παντὶ ἀνάγκη καὶ οὐδενὶ ἐνδέχεται ὑπάρχει. ὥροι τοῦ παντὶ ὑπάρχει ὑπνός—ἱππος καθεύδαν—
ἄνθρωπος, τοῦ μηδενὶ ὑπνός—ἱππος ἀγρηγορῶς—
ἄνθρωπος.

Ομοίως δὲ ἐξει καὶ εἰ ὁ μὲν καθόλου τῶν ὅρων ὅπως, καὶ τὸ μὲν στερητικὸν ληφθῇ καταφατικόν, ἀναγκαῖον ὅταν δὲ τὸ στερητικὸν λάθος τὸ μὲν καθαρτικὸν τελειοῦσθαι τοὺς συλλογισμοὺς, ὥστε καθάπερ ἐν ἐκείνοις, καὶ ἐπὶ τούτων ἀναγκαίον συμπέρασμα. ὅταν δὲ τὸ στερητικὸν καθόλου ληφθεῖν τεθῇ πρὸς τὸ ἔλαττον ἀκρον, εὰν

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* 36 a 33, where see note.
* Se. in the present example.
there will be not merely a negative particular problematic but a negative particular assertoric conclusion. For let us assume that A necessarily does not apply to C, and that B may apply to all C. Then the conversion of the affirmative premiss BC will give the first figure, and the negative premiss is apodeictic. But we saw\(^a\) that when the premisses are in this relation it follows not merely that A may not apply but that A does not apply to some C; and so it must also follow\(^b\) that A does not apply to some B. When, however, the negative statement refers to the minor term, if it is problematic there will be a syllogism after substitution of the premiss,\(^c\) as before; but if the statement is apodeictic there will be no syllogism; for A both must apply to all B and must apply to none. Terms to illustrate the former relation are sleep—sleeping horse—man; to illustrate the latter, sleep—waking horse—man.

The same principle will also apply if one of the (extreme) terms is in a universal and the other in a particular relation to the middle term. If both statements are affirmative the conclusion will be problematic and not assertoric; and also when one is taken as negative and the other as affirmative, the latter being apodeictic. When, however, the negative statement is apodeictic, the conclusion will be negative and assertoric; for the proof will take the same form whether the terms are universal or not, because the syllogisms must be completed by means of the first figure, and so the result must be the same in these as in the former examples.\(^d\) When, however, the negative statement, taken as universal, refers to the

\(^a\) i.e. the corresponding affirmative premiss.
\(^b\) Cf. 40 a 25.
μὲν ἐνδεχόμενον, ἔσται συλλογισμός διὰ τῆς ἀντιστροφῆς, εάν δ᾽ ἀναγκαῖον, οὐκ ἔσται. δειχθεῖται δὲ τῶν αὐτῶν τρόπον ὃς καὶ ἐν τοῖς καθόλου, καὶ διὰ τῶν αὐτῶν ὃρων.

Φανερὸν οὖν καὶ ἐν τούτῳ τῷ σχήματι πότε καὶ πῶς ἔσται συλλογισμός, καὶ πότε τοῦ ἐνδέχεσθαι καὶ πότε τοῦ ὑπάρχειν. δήλον δὲ καὶ ὅτι πάντες ἀτελεῖς, καὶ ὅτι τελειοῦνται διὰ τοῦ πρώτου σχήματος.

ΧΧΠΙ. Ὅτι μὲν οὖν οἱ ἐν τούτοις τοῖς σχήμασι συλλογισμοὶ τελειοῦνται διὰ τῶν ἐν τῷ πρώτῳ σχήματι καθόλου συλλογισμῶν καὶ εἰς τούτους ἀνάγονται, δῆλον ἐκ τῶν εἰρημένων ὅτι δ᾽ ἁπλῶς πᾶς συλλογισμὸς οὕτως ἔξει, νῦν ἔσται φανερὸν, ὅταν δειχθῇ πᾶς γεγνόμενος διὰ τούτων τῶν σχημάτων.

Ἀνάγκη δὴ πᾶσαν ἀπόδειξιν καὶ πάντα συλλογισμόν ἢ ὑπάρχουν τι ἢ μὴ ὑπάρχον δεικνύναι, καὶ τοῦτο ἢ καθόλου ἢ κατὰ μέρος, ἢ τῆς δεικτικῆς ἢ εξ ὑποθέσεως: τοῦ δ᾽ εξ ὑποθέσεως μέρος τὸ διὰ τοῦ ἀδυνάτου. πρῶτον οὖν εἰπωμεν περὶ τῶν δεικτικῶν: τούτων γὰρ δειχθέντων φανερὸν ἔσται καὶ ἐπὶ τῶν εἰς τὸ ἀδύνατον καὶ ὅλως τῶν εξ ὑποθέσεως.

Εἴ δὴ δέοι τὸ Α κατὰ τοῦ Β συλλογίσασθαι ἢ ὑπάρχου ἢ μη ὑπάρχον, ἀνάγκη λαβεῖν τι κατὰ τινος. εἰ μὲν οὖν τὸ Α κατὰ τοῦ Β ληφθεῖν, τὸ εξ ἀρχῆς ἔσται εἰλημμένον. εἰ δὲ κατὰ τοῦ Γ, τὸ δὲ...
minor term, if it is problematic, there will be a syllogism by conversion; but if it is apodeictic, there will be no syllogism. The proof will be effected in the same way as in the universal syllogisms, and by means of the same terms.

Thus it is evident, in this figure also, when and in what circumstances there will be a syllogism, and when this will be problematic and when assertoric. It is also clear that the syllogisms are all imperfect, and that they are completed by means of the first figure.

XXIII. It is evident, then, from the foregoing analysis that the syllogisms in this figure are completed by means of the universal syllogisms in the first figure, and are reducible to them. This holds good of every syllogism without exception, as will at once be evident when it has been shown that every syllogism is effected by means of one of these figures.

Now every demonstration and every syllogism must prove that some attribute does or does not apply to some subject, and that either universally or in a particular sense. Further, the proof must be either ostensive or hypothetical. One kind of hypothetical proof is proof per impossibile. First, then, let us deal with ostensive proofs; for when we have shown the conditions which govern these, the facts will also be made clear with regard to proofs by reduction ad impossibile and to hypothetical proofs in general.

Supposing, then, that it is required to draw an inference that the predicate A applies or does not apply to the subject B, we must assume some predication of some subject. Now if we assume that A is predicated of B, we shall have a petitio principii. If we assume that A is predicated of C, but C is predi-
Γ κατὰ μηδενός, μηδ' ἄλλο κατ' ἐκείνου, μηδὲ
κατὰ τοῦ Α ἕτερον, οὐδεὶς ἐσται συλλογισμὸς τῶν
gὰρ ἐν καθ' ἐνὸς ληφθῆναι οὐδὲν συμβαίνει ἐξ
ἀνάγκης· ὅπερ προσληπτέον καὶ ἔτεραν πρότασιν.
'Εάν μὲν οὖν ληφθῇ τὸ A κατ' ἄλλον ἢ ἄλλο
κατὰ τοῦ Α, ἢ κατὰ τοῦ Γ ἕτερον, εἶναι μὲν συλ-
λογισμοῦ οὐδέν κωλύει, πρὸς μέντοι τὸ B οὐκ
ἔσται διὰ τῶν εἰλημμένων. οὐδ' ὅταν τὸ Γ ἔτέρω,
κάκεινο ἄλλω, καὶ τοῦτο ἔτέρω, μη συνάπτῃ δὲ
πρὸς τὸ B, οὐδ' οὔτως ἐσται πρὸς τὸ B συλλογι-
σμὸς. οὐδὲν κωλύει, πρὸς μέντοι τὸ Β. οὐκ
"0 ἔσται διὰ τῶν εἰλημμένων. οὐδ᾽ ὅταν τὸ Γ',
κατὰ μηδὲν καταμαθεῖν τοῦτο, μὴ συνάπτῃ δὲ
πρὸς τὸ B, οὐδὲν μήτε κατηγοροῦντας
ἀμφοῖν, ὁ μὲν γὰρ συλλογισμὸς ἁπλῶς ἐκ προ-
tάσεων ἐστιν, ὁ δὲ πρὸς τὸ B λαβεῖν πρότασιν
μηδὲν μήτε κατηγοροῦντας αὐτοῦ μήτ' ἀπαρνομένους, ἢ πάλιν τοῦ A πρὸς τὸ
B μηδὲν καταμαθεῖν τοῦτο, ἢ ἅτι ἀκατηγοροῦντας αὐτοῦ μήτ' ἀπαρνομένους· ὅπερ λη-
tέον τι μέσον ἀμφοῖν, δια τὰς κατηγορίας,
eἰπέρ ἐσται τοῦτο πρὸς τὸ B συλλογισμὸς.

1 συλλογισμὸς] συλλογισμὸς τοῦ A Βίου.
cated of nothing, and no other term is predicated of C, and nothing else is predicated of A, there will be no syllogism; for no necessary conclusion follows from the assumption that one term is predicated of one other term. Hence we must also assume another premiss.

Now if we assume that A is predicated of another term, or another term of A, or some other term of C, there is nothing to prevent a syllogism; but if it proceeds from these assumptions it will have no reference to B. Again, when C is connected to another term, and this to another, and this to yet another, and the series is not connected with B, in this case too we shall have no syllogism with reference to B. For we have stated a the general principle that we shall never have any syllogism proving that one term is predicated of another unless some middle term is assumed which is related in some way by predication to each of the other two; for the syllogism in general proceeds from premisses, and the syllogism relating to a given term proceeds from premisses relating to that term, and the syllogism proving the relation of one term to another is obtained by means of premisses which state the relation of one to the other. But it is impossible to obtain a premiss relating to B if we neither assert nor deny anything of B; or again one which states the relation of A to B if we cannot find something common to both, but merely assert or deny certain attributes peculiar to each. Therefore we must take some middle term relating to both, which will link the predications together, if there is to be a syllogism proving the relation of one term to the other.

a 25 b 32.
Εἰ οὖν ἀνάγκη μὲν τι λαβεῖν πρὸς ἁμφω κοινῶν, τούτο δ' ἐνδέχεται τριχῶς (ἡ γὰρ τὸ Α τοῦ Γ καὶ τὸ Γ τοῦ Β κατηγορήσαντας, ἡ τὸ Γ κατ' ἁμφῶν, ἡ ἁμφω κατὰ τοῦ Γ), ταῦτα δ' ἐστὶ τὰ εἰρημένα σχῆματα, φανερὸν ὅτι πάντα συλλογισμὸν ἀνάγκη γίγνεσθαι διά τούτων τινῶς τῶν σχημάτων. ὁ γὰρ αὐτὸς λόγος καὶ εἰ διὰ πλειονῶν συνάπτοι πρὸς τὸ Β. ταῦτο γὰρ ἐσται σχῆμα καὶ ἐπὶ τῶν πολλῶν.

"Οτι μὲν οὖν οἱ δεικτικοὶ πάντες περαίνονται διὰ τῶν προειρημένων σχημάτων, φανερὸν· ὅτι δὲ καὶ οἱ εἰς τὸ ἀδύνατον, δὴλον ἐσται διὰ τούτων. πάντες γὰρ οἱ διὰ τοῦ ἀδύνατον περαίνοντες τὸ μὲν ψεῦδος συλλογίζονται, τὸ δ' ἐξ ἀρχῆς ἐξ ὑποθέσεως δεικνύονται, ὅταν ἀδύνατον τι συμβαίνῃ τῆς ἀντιφάσεως τεθείσης, οἷον ὅτι ἀσύμμετρος ἡ διάμετρος διὰ τὸ γίγνεσθαι τὰ περιττὰ ἴσα τοῖς ἀρτίοις συμμέτρου τεθείσης. τὸ μὲν οὖν ἴσα γίγνεσθαι τὰ περιττὰ τοῖς ἀρτίοις συλλογίζονται, τὸ δ' ἀσύμμετρον εἶναι τὴν διάμετρον ἐξ ὑποθέσεως δεικνύονται, ἐπεὶ ψεῦδος συμβαίνει διὰ τῆς ἀντιφάσεως. τοῦτο γὰρ ἡν τὸ διὰ τοῦ ἀδύνατον συλλογίσασθαι, τὸ δειχθεῖ τι ἀδύνατον διὰ τὴν ἀρχὴς ὑπόθεσιν. ὡστ' ἐπεὶ τοῦ ψεῦδος γίγνεται συλλογισμὸς δεικτικὸς ἐν τοῖς εἰς τὸ ἀδύνατον ἀπαγομένοις, τὸ δ' ἐξ ἀρχῆς ἐξ ὑποθέσεως δεικνυται, τοὺς δὲ δεικτικοὺς πρότερον εἴπομεν ὅτι διὰ τούτων περαίνονται τῶν σχημάτων, φανερὸν ὅτι καὶ οἱ διὰ τοῦ

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* For the proof see Euclid, *Elements*, x. app. 27 (Heiberg and Menge).
Since, then, we must take some common term which is related to both, and this may be done in three ways, viz., by predicating A of C and C of B, or C of both, or both of C, and these are the figures already described, it is evident that every syllogism must be effected by means of one of these figures; for the same principle will also hold good if A is connected with B by more than one term; the figure will be the same also in the case of several terms.

It is evident, then, that ostensive proofs are carried out by means of the figures already described. That proofs by reduction *ad impossibile* are also carried out by their means will be clearly shown by what follows. Everyone who carries out a proof *per impossibile* proves the false conclusion by syllogism and demonstrates the point at issue *ex hypothesi* when an impossible conclusion follows from the assumption of the contradictory proposition. *E.g.*, one proves that the diagonal of a square is incommensurable with the sides by showing that if it is assumed to be commensurable, odd become equal to even numbers. Thus he argues to the conclusion that odd becomes equal to even, and proves *ex hypothesi* that the diagonal is incommensurable, since the contradictory proposition produces a false result. For we saw that to reach a logical conclusion *per impossibile* is to prove some conclusion impossible on account of the original assumption. Therefore since in reduction *ad impossibile* we obtain an ostensive syllogism of falsity (the point at issue being proved *ex hypothesi*), and we have stated above that ostensive syllogisms are effected by means of these figures, it is evident that *per impossibile*...
ἀδυνάτου συλλογισμοὶ διὰ τούτων ἔσονται τῶν σχημάτων. ῥωσαύτως δὲ καὶ οἱ ἄλλοι πάντες οὶ ἐξ ὑποθέσεως. ἐν ἀπασὶ γὰρ ὁ μὲν συλλογισμὸς γίνεται πρὸς τὸ μεταλαμβανόμενον, τὸ δὲ ἐξ ἀρχῆς περαινείται δι᾽ ὁμολογίας ἢ τινος ἄλλης ὑποθέσεως. εἰ δὲ τούτως ἀληθείς, πᾶσαν ἀπόδειξιν καὶ πάντα συλλογισμὸν ἀνάγκη γίγνεσθαι διὰ τριῶν τῶν προειρημένων σχημάτων. τούτου δὲ δειχθέντος δῆλον ως ἅπασ τε συλλογισμὸς ἐπιτελεῖται διὰ τοῦ πρώτου σχήματος καὶ ἀνάγεται εἰς τοὺς ἐν τούτῳ καθόλου συλλογισμοὺς.

Μᾶλλον δὲ γίγνεται φανερὸν ἐν τοῖς διαγράμμασι, ὡσαύτως. ἕτερα τοῦ ἰσοσκελοῦς ἴσαι αἱ πρὸς τῇ βάσει. ἐστωσαν εἰς τὸ κέντρον ἡγμέναι αἵ ΑΒ. εἰ οὖν
bile syllogisms will also be obtained by means of these figures. The same is true of all other hypothetical proofs; for in every case the syllogism is effected with reference to the substituted proposition, and the required conclusion is reached by means of a concession or some other hypothesis. But if this is true, every demonstration and every syllogism will be effected by means of the three figures already described; and this being proved, it is obvious that every syllogism is completed by means of the first figure, and is reducible to the universal syllogisms in this figure.

XXIV. Further, in every syllogism one of the terms must be positive, and universality must be involved. Without universality either there will be no syllogism, or the conclusion will be unrelated to the assumption, or there will be petitio principii. Suppose that we have to prove that musical enjoyment is commendable. Then if we postulate that enjoyment is commendable, unless 'all' is prefixed to 'enjoyment,' there will be no syllogism. If we postulate that some enjoyment is commendable, then if it is a different enjoyment, there is no reference to the original assumption; and if it is the same, there is a petitio principii.

The point can be seen more clearly in the case of geometrical theorems. E.g., take the proposition that the angles adjacent to the base of an isosceles triangle are equal. Let the lines A and B be drawn

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\* The process referred to belongs rather to dialectic reasoning. One's opponent is induced to concede that the proposition to be proved is true if some other proposition is true; the latter is then proved syllogistically.

\* i.e. one of the premisses must be affirmative.
Aristotle seems to imply the figure given here. A and B are radii of a circle; the chord which joins them forms the base, as they form the equal sides, of an isosceles triangle. E and F are the angles (between the radii and the chord) at the base of this triangle. AC and BD are the angles formed by A and B with the circumference (not with the base, as in the Oxford translation), or rather with the tangents to the circumference; similarly C and D are the angles formed by the chord with the circumference. This
to the centre. Then if you assume that $\angle AC = \angle BD$ without postulating generally that the angles of semicircles are equal, and again if you assume that $\angle C = \angle D$ without also assuming that all angles of the same segment are equal, and further if you assume that when equal angles are subtracted from the whole angles the remaining angles $E$ and $F$ are equal, unless you assume (the general principle) that when equals are subtracted from equals the remainders are equal, you will be guilty of petitio principii.

Thus it is evident that in every syllogism universality must be involved, and that a universal conclusion can only be proved when all the terms are universal, whereas a particular conclusion can be proved whether the terms are or are not all universal; so that if the conclusion is universal, the terms must also be universal, but if the terms are universal the conclusion may not be universal. It is clear also that in every syllogism one or both of the premisses must be similar to the conclusion; I do not mean merely in being affirmative or negative, but in being apodeictic or assertoric or problematic.

We must also take into account the other forms of predication.

It is, however, evident both generally when there interpretation of the phrase 'angles of semicircles' or 'of the same segment' is given by all the commentators and is supported by Euclid III. 16. 31. Waitz's interpretation, involving the excision of τὰς EZ in 1. 20, is less satisfactory.

This is inconsistent with the view, stated in 38 a 15-25, that an assertoric conclusion may be drawn from one apodeictic and one problematic premiss.

i.e. any other form of predication which appears in the conclusion must also appear in at least one premiss.
ἔσται συλλογισμός, καὶ πότε δυνατός καὶ πότε τέλειος, καὶ ὅτι συλλογισμοῦ ὅντος ἀναγκαῖον ἔχειν τοὺς ὅρους κατὰ τινὰ τῶν εἰρημένων τρόπων.

XXV. Δῆλον δὲ καὶ ὅτι πᾶσα ἀπόδειξις ἔσται διὰ τριῶν ὅρων καὶ οὐ πλείων, εὰν μὴ δὲ ἀλλων καὶ ἀλλων τὸ αὐτὸ συμπέρασμα γίγνηται, οἷον τὸ Ε διὰ τῶν ΑΒ καὶ διὰ τῶν ΓΔ, ἢ διὰ τῶν ΑΒ καὶ ΑΓ καὶ ΒΓ (πλείω γὰρ μέσα τῶν αὐτῶν οὐδὲν ἔσται διὰ τριῶν ὅρων καὶ οὐ πλείων, εἰσὶν οἱ συλλογισμοὶ· ἤ πάλιν ὅταν ἐκάτερον τῶν ΑΒ διὰ συλλογισμοῦ ληφθῇ (οἷον τὸ Α διὰ τῶν ΔΕ καὶ πάλιν τὸ Β διὰ τῶν ΖΘ), ἢ τὸ μὲν ἐπαγωγῇ, τὸ δὲ συλλογισμῷ. ἀλλὰ καὶ οὕτως πλείους οἱ συλλογισμοὶ· πλείω γὰρ τὰ συμπέρασματά ἐστιν, οἷον τὸ τε Α καὶ τὸ Β καὶ τὸ Γ. εἰ δὲ οὐν μὴ πλείους ἀλλ' εἰς, οὕτω μὲν εἰνῇς τὰ ἐναλλοίς διὰ πλείων τὸ αὐτὸ συμπέρασμα, ὡσ δὲ τὸ Γ διὰ τῶν ΑΒ ἀδύνατον. ἔστω γὰρ τὸ Ε συμπεπερασμένον ἐκ τῶν ΑΒΓΔ. οὐκοῦν ἀνάγκη τι αὐτῶν ἄλλο πρὸς ἄλλο εἰλῆφθαι, τὸ μὲν ως οἷον τὸ δ' ως μέρος· τοῦτο γὰρ δεδεικταί πρότερον, ὅτι ὅντος συλλογισμοῦ ἀναγκαῖον οὕτως τινὰς ἔχειν τῶν ὅρων. ἐχέτω οὖν τὸ Α οὕτως πρὸς τὸ Β. ἔστω ἄρα τι ἐξ αὐτῶν συμπέρασμα. οὐκοῦν ἦτοι τὸ Ε ἢ τῶν ΓΔ θάτερον ἢ ἄλλο τι παρὰ ταύτα. καὶ εἰ μὲν τὸ Ε, ἢκ τῶν ΑΒ μόνον ἂν εἴη ὁ συλλογισμός.

1 καὶ ΑΓ supra lineam add. Bu: om. A.

* Cf. 28 a 16, note.
5 i.e. as an immediate conclusion from two simple premises.
6 40 b 30.

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will and when there will not be a syllogism, and when the syllogism will be valid and when perfect; and that if there is a syllogism the terms must be related in one of the ways already described.

XXV. It is clear also that every demonstration will be effected by means of three terms and no more—unless the same conclusion is reached by means of different combinations of terms; e.g., if E is concluded both from the propositions A and B and from the propositions C and D, or from A and B, A and C, and B and C (for there is no reason why there should not be more than one middle between the same terms), but in this case there is not one syllogism but several; or again when each of the propositions A and B is obtained by syllogism (e.g., A by means of D and E, and B by means of F and G), or one by induction and the other by syllogism; but here again there will be several syllogisms, since there are several conclusions, viz., A, B and C. If it be granted that these are not several syllogisms but only one, then the same conclusion can be reached by more than three terms in this way; but it cannot be reached as C is by means of A and B. For let E be the conclusion reached by means of the premisses A, B, C and D. Then some one of these must have been assumed to be related to some other as whole to part; for it has already been shown that where there is a syllogism certain of the terms must be so related. Let A, then, be so related to B. Then there is some conclusion from these premisses; either (1) E, or (2) one of the propositions C and D, or something else apart from these. (1) If it is E, the syllogism could be

\[ \text{Three terms only are required for demonstration.} \]
τὰ δὲ ΓΔ εἰ μὲν ἐχεῖς οὕτως ὡστ' εἶναι τὸ μὲν ὡς ὁλον τὸ δ' ὡς μέρος, ἐσται τι καὶ εξ ἐκείνων, καὶ ἦτοι τὸ Ε ἡ τῶν ΑΒ βάτερον ἡ ἄλλο τι παρὰ ταύτα. καὶ εἰ μὲν τὸ Ε ἡ τῶν ΑΒ βάτερον, ἡ πλείουσ ἐσονται οἱ συλλογισμοὶ, ἡ ὡς ἐνεδέχετο ταῦτο διὰ πλεινον ὅρων περαίνεσθαι συμβαίνει εἰ δ' ἄλλο τι παρὰ ταύτα, πλείουσ ἐσονται καὶ ἀσύν- απτοι οἱ συλλογισμοὶ πρὸς ἄλληλους. εἰ δὲ μὴ οὕτως ἔχοι τὸ Γ πρὸς τὸ Δ ὡστε περιεῖ συλ- λογισμόν, μάτην ἐσται εἰλημμένα, εἰ μή ἐπαγωγής ἡ κρύφεως ἡ τινος ἄλλου τῶν τοιούτων χάριν.

Εἰ δ' ἐκ τῶν ΑΒ μὴ τὸ Ε ἀλλ' ἄλλο τι γίνεται συμπέρασμα, εἰ δὲ τῶν ΓΔ ἡ τούτων βάτερον ἡ ἄλλο παρὰ ταύτα, πλείους τε οἱ συλλογισμοὶ γίγνονται καὶ οὐ τοῦ ὑποκειμένου ὑπέκειτο γὰρ εἶναι τοῦ Ε τὸν συλλογισμόν. εἰ δὲ μὴ γίγνεται εἰκ τῶν ΓΔ μηδὲν συμπέρασμα, μάτην τε εἰληφθαι αὐτὰ συμ- βαίνει καὶ μὴ τοῦ ἐξ ἄρχης εἶναι τὸν συλλογισμόν· ὅστε φανερὸν ὅτι πάσα ἀπόδειξις καὶ πᾶς συλ- λογισμός ἐσται διὰ τριῶν ὅρων μόνον.

Τούτου δ' ὄντος φανεροῦ, δῆλον ὡς καὶ ἐκ δύο προτάσεων καὶ οὐ πλειόνων (οἱ γὰρ τρεῖς ὅροι δύο προτάσεις), εἰ μὴ προσλαμβάνοιτο, καθάπερ ἐν τοῖς ἐξ ἄρχης ἐλέξθη, πρὸς τὴν τελείωσιν τῶν συλ- λογισμῶν. φανερὸν οὖν ὡς ἐν ὧν λόγῳ συλλογι-
drawn from A and B alone. And (i.), if C and D are in the relation of whole to part, there will be some conclusion from these too; either (a) E or one of the propositions A and B or (b) something else apart from these. (a) If it is E or one of the propositions A and B, either there will be more than one syllogism, or it follows that the same conclusion is reached by several terms in the way which we saw to be possible. (b) If, however, the conclusion is something else apart from these, there will be several syllogisms which are unconnected with one another. (ii.) If, on the other hand, C is not related to D in such a way as to produce a conclusion, they will have been assumed to no purpose, unless with a view to induction or obscuring the argument or some other such object.

Again, (2) if the conclusion drawn from A and B is not E but something else, and (i.) the conclusion from C and D is either one of the propositions A and B or something else apart from them, more than one syllogism results, and these syllogisms do not prove the required conclusion; for it was assumed that the syllogism proved E. And (ii.) if no conclusion follows from C and D, it follows that these propositions were assumed to no purpose, and that the syllogism does not prove the original assumption. Hence it is evident that every demonstration and every syllogism will be effected by means of three terms only.

This being evident, it is clear also that every syllogism proceeds from two premisses and no more (for the three terms form two premisses)—unless some further assumption be made, as we said at the beginning, in order to complete the syllogisms. Thus it is evident that if in any syllogistic argument...
οί τι κυρίως προτάσεις λαμβανομένων τῶν συλλογισμῶν, ἅπας ἐστιν συλλογισμὸς ἐκ προτάσεων μὲν ἄρτων ἐκ ὅρων δὲ περιττῶν. ἐν γὰρ πλείους οἱ ὥροι τῶν προτάσεων. ἐστιν δὲ καὶ τὰ συμπεράσματα ήμίσι τῶν προτάσεων. ὅταν δὲ διὰ προσυλλογισμῶν περαίνηται ἡ διὰ πλείους μέσων (μὴ) συνεχῶν (οἷον τὸ ἈΒ διὰ τῶν ΓΔ), τὸ μὲν πλῆθος τῶν ὅρων ὑσιμίως ἐν ὑπερέξει τὰς προτάσεις ἡ γὰρ ἐξήκει ἠ εἰς τὸ μέσον τεθήσεται ὁ παρεμπύπτων ὥρος, ἀμφοτέρως δὲ συμβάινει ἐν ἐλάττων εἰνα τὰ διωστήματα τῶν ὅρων, αἱ δὲ προτάσεις ὅσι τοῖς διωστήμασιν, οὐ μέντοι ἀλλ' ἄρτων ἐσονται οἱ δὲ περιττοί, ἀλλ' ἐλάττων ὥρων, ὅταν μὲν αἱ προτάσεις ἄρτιαι περιττοὶ οἱ ὥροι, ὅταν δ' οἱ ὥροι ἄρτιοι, περιτταὶ αἱ προτάσεις (ἀμα γὰρ τῶ ὅρῳ μία προστίθεται προτάσις, ἀν ὅποθεν ὁ προστιθῇ ὁ ὥρος), ὥστέ ἐπει αἱ μὲν ἄρτιαι οἱ δὲ περιττοὶ ἦσαν, ἀνάγκη παραλλάττεσθαι τῆς αὐτῆς προσθέσεως γιγνομένης. τὰ δὲ συμπεράσματα οὐκέτι τῆς αὐτῆς εἰς τὰς προτάσεις ἑνὸς γὰρ ὅροι προστίθεμέν συμπεράσματα προστίθησεται ἐν ἐλάττων τῶν προοπαρχόντων ὅρων πρὸς μόνον γὰρ τῶν
the premisses by which the conclusion proper is reached (I say 'proper' because some of the earlier conclusions must necessarily be premisses) are not even in number, then this argument either has not been proved syllogistically or has postulated more premisses than are necessary for proving the hypothesis.

Thus if syllogisms are considered with respect to their premisses properly so called, every syllogism will consist of an even number of premisses and an odd number of terms; for the terms are one more than the premisses. Moreover, the conclusions will be half as many as the premisses. But when the conclusion is reached by means of prosyllogisms or of several consecutive middle terms\(^a\)(e.g., the conclusion AB by means of the terms C and D), the number of the terms will exceed that of the premisses, as before, by one (for each further term which is introduced will be added either externally or intermediately to the sequence, and in either case it follows that the intervals are one fewer than the terms, and there are as many premisses as intervals); the former will not, however, always be even and the latter odd, but alternately when the premisses are even the terms will be odd, and when the terms are even the premisses will be odd; for wherever a term is added one premiss is added as well. Thus since the premisses were\(^b\) even and the terms odd, their numbers must change accordingly when the same addition is made to both. But the conclusions will no longer preserve the same numerical relation either to the terms or to the premisses; for the addition of one term will increase the number of conclusions by one less than the original number of terms, since it will form con-
έσχατον οὐ ποιεῖ συμπέρασμα, πρὸς δὲ τοὺς ἄλλους πάντας, οἷον εἰ τῷ ΑΒΓ πρόσκειται τὸ Δ, εὐθὺς καὶ συμπεράσματα δύο πρόσκειται, τὸ τε πρὸς τὸ Α καὶ τὸ πρὸς τὸ Β. ὁμοίως δὲ καὶ τῶν ἄλλων. κἂν εἰς τὸ μέσον δὲ παρεμπίπτη, τὸν αὐτὸν τρόπον 25 πρὸς ἕνα γὰρ μόνον οὐ ποιήσει συλλογισμόν. ἢ ὅτι πολὺ πλείω τὰ συμπεράσματα καὶ τῶν ὅρων ἐσται καὶ τῶν προτάσεων.

XXVI. Ἐπεὶ δ᾽ εἴχομεν περὶ ὧν οἱ συλλογισμοὶ, καὶ ποῖον ἐν ἐκάστῳ σχήματι καὶ ποσακχῶς δείκνυται, φανερὸν ἡμῖν ἐστι καὶ ποῖον πρόβλημα 30 χαλεπὸν καὶ ποῖον εὐεπιχείρητον· τὸ μὲν γὰρ ἐν πλείοις σχήμασι καὶ διὰ πλείονων πτώσεων περαινόμενον ῥάον, τὸ δ' ἐν ἐλάττωσι καὶ δε' ἐλάττωνων δυσεπιχειρητότερον.

Τὸ μὲν οὖν καταφατικὸν τὸ καθόλου διὰ τοῦ πρῶτου σχήματος δείκνυται μόνον, καὶ διὰ τούτου μοναχῶς· τὸ δὲ στερητικὸν διὰ τοῦ πρῶτου καὶ 35 διὰ τοῦ μέσου, καὶ διὰ μὲν τοῦ πρῶτου μοναχῶς, διὰ δὲ τοῦ μέσου διχῶς· τὸ δ' ἐν μέρει καταφατικόν διὰ τοῦ πρῶτου καὶ διὰ τοῦ ἐσχάτου, μοναχῶς μὲν διὰ τοῦ πρῶτου, τριχῶς δὲ διὰ τοῦ ἐσχάτου. τὸ δὲ στερητικὸν τὸ κατὰ μέρος ἐν ἀπασὶ τοῖς σχήμασι δείκνυται, πλὴν ἐν μὲν τῷ πρῶτῳ ἀπαξ, ἐν δὲ τῷ 40 μέσῳ καὶ τῷ ἐσχάτῳ ἐν τῷ μὲν διχῶς ἐν τῷ δὲ τριχῶς.

43 a Φανερὸν οὖν ὅτι τὸ καθόλου κατηγορικὸν κατασκευάσαι μὲν χαλεπώτατον, ἀνασκευάσαι δὲ ῥᾴδιον. ἀλλὸς δὲ ἐστὶν ἀναρωτεῖται μὲν τὰ καθόλου τῶν

* Barbara.
* Cesare and Camestres.
* Celarent.
* Darii.
conclusions with all the terms except the last. E.g., if
the term D is added to the terms A, B and C, two
further conclusions are added *ipso facto*, viz., those
which are given by the relation of D severally to A
and B. Similarly too in all other cases. And even
if the term be introduced intermediately, the same
principle holds; for the term will form a conclusion
with all the rest but one. Thus there will be many
more conclusions than either terms or premisses.

XXVI. Now that we understand the scope of the
syllogism, and what sort of proof can be obtained in
each figure and in how many ways, it is also evident
to us what kind of proposition is difficult and what is
easy to deal with; for that which is concluded in more
figures and by more moods is easier, while that which
is concluded in fewer figures and by fewer moods is
harder to deal with.

The universal affirmative is proved only by the first
figure, and by this in one *a* mood only; but the nega-
tive is proved both by the first and by the middle
figure: by the first in one *b* and by the middle in
two *c* moods. The particular affirmative is proved
by the first and the last figures: by the first in one *d*
and by the last in three *e* moods. The particular
negative is proved in all three figures, with this
difference, that in the first figure it is proved in one *
* mood, while in the second and third it is proved
respectively in two *g* and in three *h* moods.

Thus it is evident that the universal affirmative is
the hardest to establish and the easiest to overthrow.
In general, universal propositions are more open to

*a* Darapti, Disamis and Datisi.

*b* Ferio.

*c* Festino, Baroco.

*d* Felapton, Bocardo and Ferison.
ἐν μέρει ῥῶν· καὶ γὰρ ἤν μηδενὶ καὶ ἤν τινι μὴ ὑπάρχῃ ἀνήρηται· τούτων δὲ τὸ μὲν τινὶ μὴ ἐν 5 ἅπασι τοῖς σχήμασι δείκνυται, τὸ δὲ μηδενὶ ἐν τοῖς δυσίν. τῶν αὐτῶν δὲ τρόπον κατὰ τῶν στερητικῶν· καὶ γὰρ εἰ παντὶ καὶ εἰ τινι, ἀνήρηται τὸ εἰς ἀρχῆς τούτο δ’ ἦν ἐν δύο σχήμασι. ἐπὶ δὲ τῶν ἐν μέρει μοναχῶς, ἢ παντὶ ἢ μηδενὶ δειξαντα ὑπάρχειν. 10 κατασκευάζοντι δὲ ῥῶν τὰ ἐν μέρει καὶ γὰρ ἐν πλείοσι σχήμασι καὶ διὰ πλείονων τρόπων.

"Ολως τε οὐ δεὶ λανθάνειν ὅτι ἀνασκευάσαι μὲν δι’ ἄλληλων ἐστὶ καὶ τὰ καθόλου διὰ τῶν ἐν μέρει καὶ ταῦτα διὰ τῶν καθόλου, κατασκευάσαι δ’ οὐκ ἐστὶ διὰ τῶν κατὰ μέρος τὰ καθόλου, δι’ ἐκείνων δὲ ταῦτ’ ἐστίν. ἀμα δὲ ὅτι παντὶ τὰ καὶ τὸ ἀνασκευάζειν ἐστὶ τοῦ κατασκευάζειν ῥῶν.

Πῶς μὲν οὖν γίγνεται πᾶς συλλογισμὸς καὶ διὰ πόσων ὄρων καὶ προτάσεων, καὶ πῶς ἔχουσῶν πρὸς ἄλληλας, ἐτι δὲ ποιον πρόβλημα ἐν ἐκάστῳ σχήματι καὶ ποιον ἐν πλείοσι καὶ ποιον ἐν ἐλάττωσι δεί- κνυται, δήλον ἐκ τῶν εἰρημένων.

ΧΧΒ. Πῶς δὲ εὐπορήσομεν αὐτοὶ πρὸς τὸ τιθέμενον ἀεὶ συλλογισμῶν, καὶ διὰ ποιας ὁδοὶ ληφόμεθα τὰς περὶ ἐκαστον ἀρχάς, νῦν ἓνη λεκτέον·

* 42 b 35. 1 In chs. xxiii.-xxvi.

* i.e. the premisses; cf. 43 b 36.
refutation than particular ones; for the proposition is refuted not only if the predicate applies to none, but also if it does not apply to some of the subject, and of these alternatives the latter can be proved in all three figures, and the former in two of them. Similarly in the case of negative propositions; for the hypothesis is refuted not only if the predicate applies to all but also if it applies to some of the subject, and we have seen that this can be proved in two figures. But in particular propositions the refutation can only be effected in one way, by showing that the predicate applies to all, or to none. For constructive purposes, however, particular propositions are easier, since they can be proved in more figures and by more moods.

We must not fail to observe the general principle that whereas propositions can be overthrown reciprocally, the universal by the particular and the particular by the universal, universal propositions cannot be established by means of particular ones, although the latter can be established by means of the former. At the same time it is obvious also that it is easier to overthrow a proposition than to establish it.

The foregoing analysis clearly shows how every syllogism is effected, and by means of how many terms and premisses, and how these are related one to another; and also what kind of proposition is proved in each figure, and what kind is proved in more and what kind in fewer figures.

XXVII. We must next proceed to describe how we ourselves shall find an adequate supply of syllogisms to meet any given problem, and by what method we shall apprehend the starting-points appropriate to each problem; for presumably we
οὐ γὰρ μόνον ἵσως δεῖ τὴν γένεσιν θεωρεῖν τῶν συλλογισμῶν, ἀλλὰ καὶ τὴν δύναμιν ἔχειν τοῦ ποιεῖν.

Ἄπαντων δὲ τῶν ὄντων τὰ μέν ἐστι τοιαῦτα ὡστε κατὰ μηδενὸς ἄλλου κατηγορεῖσθαι ἀληθῶς καθόλου (οἷον Κλέων καὶ Καλλίας καὶ τὸ καθ’ ἐκαστον καὶ αἰσθητῶν), κατὰ δὲ τούτων ἄλλα (καὶ γὰρ ἀνθρωπος καὶ ζῷον ἐκάτερος τούτων ἐστὶ) τὰ δ’ αὐτὰ μὲν κατ’ ἄλλων κατηγορεῖται, κατὰ δὲ τούτων ἄλλα πρῶτερον οὐ κατηγορεῖται· τὰ δὲ καὶ αὐτὰ ἄλλων καὶ αὐτῶν ἔτερα, οἷον ἀνθρώπων Καλλίου καὶ ἀνθρώπου ζῷον. ὅτι μὲν οὖν ἐνα τῶν ὄντων κατ’ οὐδενὸς πέφυκε λέγεσθαι δῆλον· τῶν γὰρ αἰσθητῶν σχεδὸν ἐκαστῶν ἐστὶ τοιούτων ὡστε μὴ κατηγορεῖσθαι κατὰ μηδενὸς, πλὴν ὡς κατὰ συμβεβηκός· φαμέν γὰρ ποτε τὸ λευκὸν ἐκείνο Σωκράτην εἶναι καὶ τὸ προσιόν Καλλίαν. ὅτι δὲ καὶ ἔπει τὸ ἄνω πορευομένοις ἵσταται ποτε, πάλιν ἐροῦμεν· νῦν δ’ ἐστω τούτο κείμενον. κατὰ μὲν οὖν τούτων οὐκ ἐστιν ἀποδείξει κατηγοροῦμενον ἐτερον, πλὴν εἰ μὴ κατὰ δόξαν, ἅλλα ταῦτα κατ’ ἄλλων· οὐδὲ τὰ καθ’ ἐκαστα κατ’ ἄλλων ἅλλ’ ἐτερα κατ’ ἐκείνων. τὰ δὲ μεταξὺ δῆλον ὡς ἀμφιτέρως ἐν- δέχεται· καὶ γὰρ αὐτὰ κατ’ ἄλλων καὶ ἅλλα κατὰ τούτων λεχθήσεται, καὶ σχεδὸν οἱ λόγοι καὶ αἱ σκέψεις εἰσὶ μάλιστα περὶ τούτων.
should not merely speculate about the formation of syllogisms, but also possess the capacity to construct them.

Now all existing things either (1) are such that they cannot be truly predicated in a universal sense of anything else (e.g., Cleon and Callias and anything which is individual and sensible), but other attributes can be so predicated of them (for each of the two examples just quoted is a man and an animate being); or (2) are predicated of other things, but other things are not first predicated of them; or (3) both are themselves predicated of other things and have other things predicated of them (as 'man' is predicated of Callias and 'animal' of man). Thus it is obvious that some things are naturally predicable of nothing, for broadly speaking every sensible thing is such that it cannot be predicated of anything—except in an accidental sense; for we sometimes say 'That white thing is Socrates' or 'That which is approaching is Callias.' We shall explain elsewhere that there is also an upward limit to the process of predication; for the present let this be taken as assumed. It cannot be demonstrated, then, that anything else is predicated of this class of things, except by way of opinion; but they are predicated of other things. Individuals, on the other hand, are not predicated of other things, but other things are predicated of them. Things which are intermediate between universals and individuals, however, clearly admit of both processes; for they both are predicated of other things and have other things predicated of them. It is with this class of things, broadly speaking, that arguments and inquiries are chiefly concerned.
Δεί δὴ τὰς προτάσεις περὶ ἕκαστον αὐτοῖς ἐκ-λαμβάνειν, ὑποθέμενον αὐτὸ πρῶτον καὶ τοὺς ὀρισμούς τε καὶ ὅσα ἴδια τοῦ πράγματός ἐστιν, εἶτα μετὰ τούτο ὅσα ἐπεται τῷ πράγματι, καὶ κάλων ὅς τὸ πράγμα ἀκολουθεῖ, καὶ ὅσα μὴ ἐνδέχεται αὐτῷ ὑπάρχειν, εἶτα τὸ ἀντιστρέφειν τῷ στερητικῷ. Διαιρετέον δὲ καὶ τῶν ἐπομένων ὅσα τε ἐν τῷ τί ἐστι καὶ ὅσα Ὡς ἴδια καὶ ὅσα ἴδια συμβεβηκότα κατηγορεῖται, καὶ τούτων ποιὰ δοξαστικῶς καὶ ποιὰ κατ᾽ ἀλήθειαν. ὃς μὲν γὰρ ἂν πλειόνων τοιούτων εὐπορῇ τις, θάττον ἐντεύξεται συμπεράσματι, ὃς δ’ ἂν ἀληθεστέρων, καίδον ἀποδείξει.

Δεῖ δ’ ἐκλέγειν μὴ τὰ ἑπόμενα τινὶ, ἀλλ’ ὅσα ὅλῳ τῷ πράγματι ἐπεται, ὅλῳ τῷ τί να ἀνθρώπῳ ἀλλὰ τῇ παντὶ ἀνθρώπῳ ἐπεται. διὰ γὰρ τῶν καθ-όλου προτάσεων ὁ συνλογισμός. ἀδιορίστου μὲν ὅν ὅντος ἄδηλον εἰ καθόλου ἡ πρότασις, διωρισμένου δὲ φανερὸν. ὁμοίως δ’ ἐκλεκτέον καὶ οἰς αὐτὸ ἐπεται ὅλος, διὰ τὴν εἰρημένην αἰτίαν. αὐτὸ δὲ τὸ ἐπόμενον ὑπὸ ληπτεόν ὅλον ἐπεσθαί, λέγω δ’ οἶος ἀνθρώπῳ πᾶν ζῷον ἡ μουσικὴ πᾶσαν ἐπιστήμην, ἀλλὰ μόνον ἄπλως ἀκολουθεῖν, καθάπερ καὶ προ-πεινόμεθα: καὶ γὰρ ἄχρηστον θάτερον καὶ ἄδυνατον, ὅλον πάντα ἀνθρώπων εἶναι πᾶν ζῷον ἡ δικαιοσύνην.
Now we must select the premisses connected with each problem in the following manner. We must set down (1) the subject itself, its definitions and all its properties, (2) all the concepts which are consequents of the subject, (3) the concepts of which the subject is a consequent, and (4) the attributes which cannot apply to the subject. We need not select the concepts to which it cannot apply, because the negative premiss is convertible. We must also distinguish among these consequents those which are included in the essence, those which are predicated as properties, and those which are predicated as accidents; and of these we must distinguish those which are supposedly from those which are really associated with the subject, for the greater our supply of the latter, the sooner we shall arrive at a conclusion, and the truer they are, the more convincing will be our proof.

We must select consequents not of some part but of the whole of the subject, e.g., not those of some individual man, but those of every man; for it is from universal premisses that the syllogism proceeds. Thus when a statement is indefinite it is uncertain whether the premiss is universal, but when the statement is definite this is quite clear. Similarly we must select only those concepts of the whole of which the subject is a consequent, for the reason just stated. But we must not assume that the consequent is consequent as a whole; I mean, e.g., that all 'animal' is a consequent of 'man,' or all 'scientific knowledge' of 'music,' but only that it is a consequent, without qualification; as indeed we express it in a proposition; the other form of expression (e.g., 'every man is every animal' or 'probity is all good') is
ἀπαν ἀγαθῶν· ἀλλ' ὃ ἐπεταί, ἐπ' ἐκείνου τὸ παντὶ λέγεται.

"Ὅταν δ' ὑπὸ τινὸς περιέχηται τὸ ὑποκείμενον ὃ τὰ ἐπόμενα δεῖ λαβείν, τὰ μὲν τῷ καθόλου ἐπόμενα ἢ μὴ ἐπόμενα οὐκ ἐκλεκτέον ἐν τούτοις (ἐἰληπταί γὰρ ἐκεῖνος· ὄσα γὰρ ζῷω καὶ ἀνθρώπως ἐπεταί, καὶ ὃς μὴ ὑπάρχει ὡσαύτως), τὰ δὲ περὶ ἕκαστον ἑπτεύον· ἐστὶ γὰρ ἀττα τῷ εἴδει ἰδιὰ παρὰ τὸ γένος· ἀνάγκη γὰρ τοῖς ἑτέροις εἴδεσιν ἰδιὰ ἀττα ὑπάρχειν.

Οὐδὲ δὴ τῷ καθόλου ἐκλεκτέον οἷς ἐπεταί τὸ περιεχόμενον, οἷον ζῷω οἷς ἐπεταί ἀνθρώπος· ἀνάγκη γὰρ, εἰ ἀνθρώπως ἀκολουθεῖ τῷ ζῷων, καὶ τούτοις ἀπασιν ἀκολουθείν. οὐκετέρα δὲ ταῦτα τῆς τοῦ ἀνθρώπου ἐκλογῆς.

Αὐτεύον δὲ καὶ τὰ ἰστ ἐπὶ τὸ πολὺ ἐπόμενα καὶ οἷς ἐπεταί· τῶν γὰρ ἦστι τὸ πολὺ προβλημάτων καὶ οἱ συλλογισμοὶ ἐκ τῶν ὡς ἐπὶ τὸ πολὺ προτάσεων, ἢ πασᾶν ἢ τινῶν· ὁμοίον γὰρ ἐκάστου τὸ συμπέρασμα ταῖς ἀρχαῖς.

"Ετι τὰ πᾶσιν ἐπόμενα οὐκ ἐκλεκτέον· οὐ γὰρ ἐσται συλλογισμός ἐξ αὐτῶν· δι' ἦν δ' αἰτίαν ἐν τοῖς ἐπομένοις ἐσται δὴλον.

XXVIII. Κατασκευάζειν μὲν οὖν βουλομένους

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43 b  ἀπαν ἀγαθῶν· ἀλλ' ὃ ἐπεταί, ἐπ' ἐκείνου τὸ παντὶ λέγεται.

"Ὅταν δ' ὑπὸ τινὸς περιέχηται τὸ ὑποκείμενον ὃ τὰ ἐπόμενα δεῖ λαβείν, τὰ μὲν τῷ καθόλου ἐπόμενα ἢ μὴ ἐπόμενα οὐκ ἐκλεκτέον ἐν τούτοις (ἐἰληπταί γὰρ ἐκεῖνος· ὄσα γὰρ ζῷω καὶ ἀνθρώπως ἐπεταί, καὶ ὃς μὴ ὑπάρχει ὡσαύτως), τὰ δὲ περὶ ἕκαστον ἑπτεύον· ἐστὶ γὰρ ἀττα τῷ εἴδει ἰδιὰ παρὰ τὸ γένος· ἀνάγκη γὰρ τοῖς ἑτέροις εἴδεσιν ἰδιὰ ἀττα ὑπάρχειν.

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"Ετι τὰ πᾶσιν ἐπόμενα οὐκ ἐκλεκτέον· οὐ γὰρ ἐσται συλλογισμός ἐξ αὐτῶν· δι' ἦν δ' αἰτίαν ἐν τοῖς ἐπομένοις ἐσται δὴλον.

XXVIII. Κατασκευάζειν μὲν οὖν βουλομένους

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4 That it is useless (for purposes of argument) is probably true; but it is recognized as possible in modern logic.

b Literally 'starting-points.'

c i.e. of both major and minor terms. This would give a syllogism in the second figure with two affirmative premises, from which no conclusion follows.

44 b 20.
useless and impossible. It is to the antecedent that 'all' or 'every' is attached.

When the subject whose consequents we have to apprehend is included in some wider term, we must not select the consequents or non-consequents of the universal in dealing with the particular (for they have been apprehended already in considering the universal, for the consequents of 'animal' are consequents of 'man,' and similarly with non-consequents), but we must apprehend the consequents which are peculiar to the individual. For there are some properties which are peculiar to the species apart from the genus, since the other species must also have some properties peculiar to them.

Nor again should we in the case of the universal term select the antecedents of the subordinate term; e.g., in the case of 'animal' we should not select the antecedents of 'man,' for if 'animal' is a consequent of 'man,' it must be a consequent of all these concepts as well. They belong more properly, however, to the selection of concepts associated with the term 'man.'

We must also apprehend those concepts which are usually consequents of our subject, and those of which it is usually a consequent; for the syllogism of propositions about the usual is also drawn from premisses which are usually true, either all or some of them; for the conclusion of every syllogism is similar to its original premisses.

Further, we must not select concepts which are consequents of all the terms, because they will not produce a syllogism. Why this is so will be clear presently.

XXVIII. When we wish to establish a proposition
κατά τινος ὅλου τοῦ μὲν κατασκευαζόμενον βλεπτέον εἰς τὰ ὑποκείμενα, καθ' ὧν αὐτὸ τυγχάνει λεγόμενον, οὗ δὲ δεὶ κατηγορεῖσθαι, ὅσα τούτω ἐπεταίρων γὰρ τούτων ἢ ταυτῶν, ἀνάγκη θάτερον θατέρων ὑπάρχειν. ἤν δὲ μὴ ὁτι παντὶ ἀλλ᾽ ὡστι τω, οἷς ἐπεταίροντει εἰ γὰρ τούτων ταυτῶν, ἀνάγκη τω ὑπάρχειν. ὅταν δὲ μηδενὶ δὲ ὑπάρχει, ὥστι μὲν οὐ δεὶ ὑπάρχειν, εἰς τὰ ἐπομενα, ὃ δὲ δεὶ μη ὑπάρχει, εἰς νὰ ἐνδέχεται αὐτῷ παρεῖναι, ἢ ἀνάπαυς, ὥστι μὲν δεὶ μη ὑπάρχει, εἰς ὁ ἐνδέχεται αὐτῷ παρεῖναι, ὁ δὲ μη ὑπάρχει, εἰς τα ἐπομενα, τούτων γὰρ ὑπάρχει τῶν αὐτῶν ὑποτερων, οὐκετε ἐνδέχεται διὰ τοῦ ὑπάρχειν γίγνεται γὰρ ὁτι μὲν ὁ ἐν τῷ πρῶτῳ σχηματισμῷ, ὁτε δ᾽ ὃ ἐν τῷ μέσῳ ἐαν δὲ τω μὴ ὑπάρχει, ὃ μὲν δεὶ μη ὑπάρχει, οἷς ἐπεταίροντει, ὃ δὲ μη ὑπάρχει, ἃ μη δυνατὸν αὐτῷ ὑπάρχειν, εἰ γὰρ τούτων εἰς ταυτῶν, ἀνάγκη τω μη ὑπάρχειν.  

Μάλλον δ᾽ ἵσως ὥστε ἐσται τῶν λεγομένων ἐκαστόν φανερόν. ἐστω γὰρ τά μὲν ἐπομενα τῷ Α ἐφ᾽ ὁν Β, οἷς δ᾽ αὐτῷ ἐπεται ἐφ᾽ ὁν Γ, ὃ δὲ μὴ ἐνδέχεται αὐτῷ ὑπάρχειν ἐφ᾽ ὁν Δ, πάλιν δὲ τῷ Ε τά μὲν ὑπάρχοντα ἐφ᾽ οἷς Ζ, οἷς δ᾽ αὐτῷ ἐπεται ἐφ᾽ οἷς Η, ὃ δὲ μὴ ἐνδέχεται αὐτῷ ὑπάρχειν ἐφ᾽ οἷς Θ. εἰ μὲν οὖν ταυτὸ τι ἐσται τῶν Γ τοῦ τῶν Ζ, ἀνάγκη τῷ Α

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1. φ᾽ δ᾽ ῃ, Waitz.  
2. εἰς τὰ ἐπομενα, ὃ δὲ δεὶ μη ὑπάρχειν om. Waitz, habent codd., sed ὃ δὲ πρὸ δ δὲ Λ.  
3. εἰς om. AB'Cdu.

By converting the major premiss in Cesare or the minor in Camestres.
about a subject as a whole, we must consider (1) the subjects of which the predicate which we are trying to establish is actually asserted, and (2) the consequents of the subject whose predicate we are required to establish; for if there is anything which is common to both classes, then the predicate must apply to the subject.\(^a\) If we are trying to establish that it applies not to all but to some, we must consider the antecedents of both terms; for if anything is common to both classes, then one term must apply to some of the other.\(^b\) When it is required that one term shall apply to none of the other, we must consider the consequents of the subject, and the attributes which cannot belong to the predicate,\(^c\) or conversely we must consider the attributes which cannot belong to the subject and the consequents of the predicate;\(^d\) for if any term is the same in both series, the predicate term cannot apply to any of the subject; for a syllogism results sometimes in the first\(^e\) and sometimes in the middle figure. If it is required that one term shall not apply to some of the other, we must consider the antecedents of the subject and the attributes which cannot apply to the predicate; for if anything is common to these two classes, it must follow that the predicate does not apply to some of the subject.\(^f\)

Perhaps the several rules stated above will be clearer if we express them in the following manner. Let the consequents of A be designated by B, the antecedents of A by C, and the attributes which cannot apply to A by D; again, let the attributes of E be designated by F, the antecedents of E by G, and the attributes which cannot apply to E by H. Then (1) if any of the Cs is the same as any of the Fs,
παντὶ τῷ E ὑπάρχειν: τὸ μὲν γὰρ Z παντὶ τῷ E, τὸ δὲ Γ παντὶ τῷ A, ὥστε παντὶ τῷ E τὸ A. ei 20 δὲ τὸ Γ καὶ τὸ H ταὐτῶν, ἀνάγκη τινὶ τῶν E τὸ A ὑπάρχειν: τῷ μὲν γὰρ Γ τὸ A, τῷ δὲ H τὸ E παντὶ ἀκολουθεῇ. ei δὲ τὸ Z καὶ τὸ Δ ταὐτῶν, οὐδενὶ τῶν E τὸ A ὑπάρξει εἰ προσυλλογισμῷ· εἰπε γὰρ ἀντιστρέφει τὸ στερητικὸν καὶ τὸ Z τῷ Δ ταὐτῶν, οὐδενὶ τῶν Z ὑπάρξει τὸ A, τὸ δὲ Z παντὶ τῷ E. 25 πάλιν ei τὸ B καὶ τὸ Θ ταὐτῶν, οὐδενὶ τῶν E τὸ A ὑπάρξει· τῷ γὰρ B τῷ μὲν A παντὶ, τῷ δὲ Ἐ ἐφ᾽ ϕ τὸ E οὐδενὶ ὑπάρξει· ταῦτο γὰρ ἤν τῷ Θ, τὸ δὲ Θ οὐδενὶ τῶν E ὑπῆρχεν. ei δὲ τὸ Δ καὶ τὸ H ταὐτῶν, τὸ A τινὶ τῶν E οὐχ ὑπάρξει· τῷ γὰρ Η οὐχ ὑπάρξει, ὥστε τινὶ τῶν E οὐχ ὑπάρξει· ei δὲ τῷ H τὸ B ταὐτῶν, ἀντεστραμμένος ἐσται συλλογισμός· τὸ μὲν γὰρ E τῷ A ὑπάρξει παντὶ—τῷ γὰρ B τῷ A, τὸ δὲ E τῷ B (ταὐτὸ γὰρ ἤν τῷ Η)—τὸ δὲ A τῷ E παντὶ μὲν οὐκ ἀνάγκη ὑπάρχειν, τινὶ δ᾽ ἀνάγκη διὰ τὸ 30 ἀντιστρέφειν τῇ καθόλου κατηγορίᾳ τὴν κατὰ μέρος.  

Φανερὸν οὖν ὅτι εἰς τὰ προειρημένα βλεπτέον ἐκάτερον καθ᾽ ἐκαστὸν πρόβλημα· διὰ τούτων γὰρ ἀπαντεῖς οἱ συλλογισμοί. δεῖ δὲ καὶ τῶν ἐπομένων, καὶ οἷς ἐπεται ἐκαστὸν, εἰς τὰ πρώτα καὶ τὰ καθό- 40 λον μάλιστα βλέπειν, οἷον τοῦ μὲν E μᾶλλον εἰς τὸ KΖ ἢ εἰς τὸ Z μόνον, τοῦ δὲ A εἰς τὸ ΚΓ ἢ εἰς τὸ Γ μόνον. ei μὲν γὰρ τῷ KΖ ὑπάρχει τὸ A, καὶ τῷ Z καὶ τῷ E ὑπάρχει· ei δὲ τοῦτῳ μὴ ἐπεται,  

1 τῷ corr. Αf; τὸ Bdun.  
2 E AB²Cd²n² : H B'd'fmn².
A must apply to all E; for F applies to all E, and C applies to all A, so that A applies to all E. (2) If C and G are the same, A must apply to some E. For A is a consequent of all C, and E of all G. (3) If F and D are the same, by a prosyllogism A will apply to no E; for since the negative proposition is convertible, and F is the same as D, A will apply to no F; but F applies to all E. (4) Again, if B and H are the same, A will apply to no E; for B will apply to all A, but to no E; for B is ex hypothesi the same as H, and we assumed that H applies to no E. (5) If D and G are the same, A will not apply to some E. For it will not apply to G, inasmuch as it does not apply to D. But G falls under E, and so A will not apply to some E. (6) If B is the same as G, there will be a syllogism by conversion. For E will apply to all A, since B applies to A and E to B (since B is ex hypothesi the same as G). It does not necessarily follow, however, that A applies to all E, but only that it applies to some, because the universal is convertible into a particular statement.

Thus it is evident that in the proving of every proposition we must consider the foregoing relations of subject and predicate; for it is by these that all syllogisms are determined. Moreover we must consider especially those of the consequents and antecedents of each term which are primary and universal; e.g., in the case of E we must consider KF rather than F alone, and in the case of A we must consider KC rather than C alone.a For if A applies to KF it applies both to F and to E, but if it is not a consequent of the latter, it may still be a consequent of F.

a KF and KC are universals which include F and C respectively.
ἐγχωρεῖ τῷ Ζ ἐπεσθαί. ὠμοίως δὲ καὶ ἐφ' ὑπὸ αὐτοῦ ἀκολουθεῖ σκεπτέον· εἰ μὲν γὰρ τοὺς πρῶτους, καὶ τοὺς ὑπὸ ἐκείνα ἐπεταί, εἰ δὲ μὴ τούτους, ἀλλὰ τοὺς ὑπὸ ταύτα ἐγχωρεῖ.

Δήλον δὲ καὶ ὅτι διὰ τῶν τριῶν ὅρων καὶ τῶν δύο προτάσεων ἡ σκέψις, καὶ διὰ τῶν προειρημένων σχημάτων οἱ συλλογισμοὶ πάντες. δεικνυται γὰρ ὑπάρχει μὲν παντὶ τῷ Ε τῷ Α, ὅταν τῶν Γ καὶ Ζ ταὐτόν τι ληφθῇ. τούτο δὲ ἐσται μέσον, ἀκρα δὲ τὸ Α καὶ Ε· γίγνεται οὖν τὸ πρῶτον σχῆμα. τυλί δὲ, ὅταν τὸ Γ καὶ τὸ Η ληφθῇ ταὐτόν. τούτῳ δὲ τὸ ἐσχατὸν σχῆμα, μέσον γὰρ τὸ Η γίγνεται. μηδενὶ δὲ, ὅταν τὸ Δ καὶ τὸ Ζ ταὐτόν. οὔτω δὲ καὶ τὸ πρῶτον σχῆμα καὶ τὸ μέσον, τὸ μὲν πρῶτον ὃτι οὐδενὶ τῷ Ζ ὑπάρχει τῷ Α, εἰπέρ ἀντιστρέφει τὸ στερητικὸν, τὸ δὲ Ζ παντὶ τῷ Ε, τὸ δὲ μέσον ὃτι τὸ Δ τῷ μὲν Α οὐδενὶ τῷ Ε παντὶ ὑπάρχει. τυλί δὲ μὴ ὑπάρχει, ὅταν τὸ Δ καὶ τὸ Η ταὐτόν. τούτῳ δὲ τὸ ἐσχατὸν σχῆμα τὸ μὲν γὰρ Α οὐδενὶ τῷ Η ὑπάρχει, τὸ δὲ Ε παντὶ τῷ Η.

Φανερὸν οὖν ὅτι διὰ τῶν προειρημένων σχημάτων οἱ συλλογισμοὶ πάντες, καὶ ὅτι οὐκ ἐκλεκτεῖν ὁσα πάσων ἐπεταί, διὰ τὸ μηδένα γίγνεσθαι συλλογισμὸν ἐξ αὐτῶν. κατασκευάζει μὲν γὰρ ὅλως οὐκ ἢν ἐκ τῶν ἐπομένων, ἀποστερεῖν δὲ οὐκ ἐνδέχεται διὰ τοῦ πάσων ἐπομένου· δεί γὰρ τῷ μὲν ὑπάρχει τῷ δὲ μὴ ὑπάρχει.
Similarly we must observe the antecedents of the term in question; for if it is a consequent of those which are primary, so it is also of the terms which fall under these; but if it is not a consequent of the former, it may still be so of the latter.

It is clear also that our inquiry is carried out by means of the three terms and two premisses, and that all the syllogisms are effected by means of the three figures already described. For it is proved (1) that A applies to all E when one of the Cs is taken as identical with one of the Fs. This will be the middle term, and the extremes will be A and E. Thus the first figure results. (2) That A applies to some E when C and G are taken as identical. This is the last figure; for G becomes the middle term. (3) That A applies to no E when D and F are identical. In this case we get both the first and the middle figure; the first because A applies to no F (the negative proposition being converted) and F applies to all E, and the middle figure because D applies to no A but to all E. (4) That A does not apply to some E when D and G are identical. This is the last figure, for A will apply to no G and E will apply to all G.

Thus it is evident that all syllogisms are effected by means of the figures already described, and that we must not select consequents of all the terms, because no syllogism results from these. For we saw that there is no way at all of establishing a proposition from consequents, while on the other hand refutation is impossible by means of a common consequent, because it should apply to one term but not to the other.

as a common consequent of both the extreme terms (second figure).
Φανέρων δὲ καὶ ὅτι αἱ ἄλλαι σκέψεις τῶν κατὰ τὰς ἐκλογὰς ἀχρεῖοι πρὸς τὸ ποιεῖν συλλογισμὸν, οἷον εἰ τὰ ἐπόμενα ἐκατέρω ταύτα ἐστίν, ἢ εἰ ὅσα ἐπεται τὸ Α καὶ ἃ μὴ ἐνδέχεται τῷ Ε, ἢ ὅσα πάλιν μὴ ἐγχωρεῖ ἐκατέρω ὑπάρχειν· οὐ γὰρ γίγνεται συλλογισμὸς διὰ τούτων. εἰ μὲν γὰρ τὰ ἐπόμενα ταύτα, οἷον τὸ Β καὶ τὸ Ζ, τὸ μέσον γίγνεται σχῆμα κατηγορικὰς ἔχον τὰς προτάσεις, εἰ δ' ὅσα ἐπεται τὸ Α καὶ ἃ μὴ ἐνδέχεται τῷ Ε, οἷον τὸ Γ καὶ τὸ Θ, τὸ πρῶτον σχῆμα στερητικὴν ἔχον τὴν πρὸς τὸ ἐλαττον ἀκρον πρότασιν. εἰ δ' ὅσα μὴ ἐνδέχεται ἐκατέρω, οἷον τὸ Δ καὶ τὸ Θ, στερητικαὶ ἀμφότεραι αἱ προτάσεις, ἡ ἐν τῷ πρῶτῳ ἡ ἐν τῷ μέσῳ σχήματι· οὕτως δ' οὐδαμῶς ἐσται συλλογισμός.

Δήλον δὲ καὶ ὅτι ὅποια ταύτα λήπτειν τὰ κατὰ τὴν ἐπίσκεψιν, καὶ ὁμοία ἐτερα ἡ ἐναντία, πρῶτον μὲν ὅτι τοῦ μέσου χάριν ἡ ἐπίβλεψις, τὸ δὲ μέσον οὐχ ἐτερον ἀλλὰ ταύτον δεὶ λαβεῖν. εἴτε ἐν ὅσοις καὶ συμβαίνει γίγνεσθαι συλλογισμὸν τῷ ληφθῆναι ἐναντία ἡ μὴ ἐνδεχόμενα τῷ αὐτῷ ὑπάρχειν, εἰς τοὺς προειρημένους ἀπαντὰ ἀναχθῆσεται τρόπους, οἷον εἰ τὸ Β καὶ τὸ Ζ ἐναντία ἡ μὴ ἐνδέχεται τῷ αὐτῷ ὑπάρχειν· ἐσται μὲν γὰρ τούτων ληφθέντων συλλογισμὸς ὅτι οὐδενὶ τῶν Ε τὸ Α ὑπάρχει ἀλλ' οὐκ εἰς αὐτῶν ἀλλ' ἐκ τοῦ προειρημένου τρόπου· τὸ γὰρ Β τῷ μὲν Α παντὶ τῷ δὲ Ε...
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It is evident also that all other methods of investigation which proceed by selection are useless for producing a syllogism; e.g., (a) if the consequents of both terms are identical, or (b) if the antecedents of A and the attributes which cannot apply to E are identical; or again (c) if the attributes which cannot apply to either are identical; because no syllogism results from these conditions. For (a) if the consequents, viz. B and F, are identical, we get the third figure with both premisses affirmative; (b) if the antecedents of A and the attributes which cannot apply to E, viz. C and H respectively, are identical, we get the first figure with a negative minor premiss; and (c) if the attributes which cannot apply to either of the terms A and E, viz. D and H, are identical, both premisses are negative, either in the first or in the middle figure. In these circumstances no syllogism at all is possible.

It is clear also that we must apprehend which of the terms that come under our survey are the same, and not which are different or contrary; firstly, because the object of our investigation is to discover the middle term, and the middle term must be taken as the same in each premiss, and not as something different. Secondly, even those examples in which a syllogism happens to result from taking attributes which are contrary or which cannot apply to the same subject, will all be reducible to the types which we have already described; e.g., if B and F are contrary or cannot apply to the same subject. For if we take these terms, there will be a syllogism to the effect that A applies to no E, but the conclusion will be drawn not from the terms as they stand but from the type described above. For B will apply to all A
οὐδενὶ ὑπάρξει, ὡστ' ἀνάγκη ταυτὸ εἶναι τὸ B τινὶ τῶν Θ. πάλιν εἰ τὸ B καὶ H μὴ ἐγχωρεῖ τῷ αὐτῷ παρεῖναι, ὅτι τινὶ τῶν E οὐχ ὑπάρξει τὸ Α· καὶ γὰρ οὖτως τὸ μέσον ἐσται σχῆμα· τὸ γὰρ B τῷ μὲν A παντὶ τῷ δὲ E οὐ τινὶ ὑπάρξει, ὡστ' ἀνάγκη τὸ B ταὐτὸν τινὶ εἶναι τῶν Θ. τὸ γὰρ μὴ ἐνδέχεσθαι τὸ B καὶ τὸ H τῷ αὐτῷ ὑπάρχειν οὐδὲν διαφερεῖ ἢ τὸ B τῶν Θ τινὶ ταὐτὸν εἶναι· πάντα γὰρ εὐλητται τὰ μὴ ἐνδεχόμενα τῷ E ὑπάρχειν.

Φανερὸν μὲν οὖν ὅτι εἰς αὐτῶν μὲν τούτων τῶν ἐπιβλέψεων οὐδεὶς γίγνεται συλλογισμός, ἀνάγκη δ', εἰ τὸ B καὶ τὸ Z ἑαυτία, ταὐτὸν τινὶ εἶναι τὸ B τῶν Θ καὶ τὸν συλλογισμὸν γίγνεσθαι διὰ τούτων. συμβαίνει δὴ τοῖς οὖτως ἐπισκοποῦσι προσεπι- βλέπειν ἅλλην οὖν τῆς ἀναγκαίας διὰ τὸ λανθάνειν τὴν ταυτότητα τῶν B καὶ τῶν Θ.

XXIX. Τὸν αὐτὸν δὲ τρόπον ἔχουσι καὶ οἱ εἰς τὸ ἀδύνατον ἀγοντες συλλογισμοῖς τοῖς δεικτικοῖς· καὶ γὰρ οὖτοι γίγνονται διὰ τῶν ἐπομένων καὶ οἷς ἐπεται ἐκάτερον. καὶ ἡ αὐτὴ ἐπιβλεψις ἐν ἀμφοῖν· ὅ γὰρ δείκνυται δεικτικῶς καὶ διὰ τοῦ ἀδυνατοῦ ἐστὶ συλλογισασθαι διὰ τῶν αὐτῶν ὅρων, καὶ ὁ διὰ τοῦ ἀδυνατοῦ καὶ δεικτικῶς· οἷον ὅτι τὸ A οὐδενὶ τῶν Ε ὑπάρχει. κείσθω γὰρ τινὶ ὑπάρχειν οὐκοῦν εἰπεὶ τὸ B παντὶ τῷ A τὸ δὲ A τινὶ τῶν E, τὸ B τινὶ τῶν E ὑπάρξει· ἀλλ' οὐδενὶ ὑπήρχεν. πάλιν ὅτι τινὶ ὑπάρχει· εἰ γὰρ μηδενὶ τῶν E τὸ A τὸ δὲ E

1 EBου: H uolgo.
2 οὗ του Waitz: oüden codd.
3 ἀνάγκη δ', εἰ Bnu, Waitz: εἰαρ δὲ ACdsm.

* 44 a 16.
but to no E, and so B must be the same as some H. Again, if B and G cannot apply to the same subject, there will be a syllogism to the effect that A will not apply to some E. In this case too we shall have the middle figure, because B will apply to all A but not to some E, so that B must be the same as some H. For the statement ‘B and G cannot apply to the same subject’ is equivalent to ‘B is the same as some H’; since H has been assumed to designate all the attributes which cannot apply to E.

Thus it is evident that no syllogism results from the foregoing methods of investigation as they stand, but that if B and F are contrary, B must be the same as some H, and in this way the syllogism is obtained. Thus it follows that those who consider the problem in the manner which has just been described are looking for a further method of proof than they need, through overlooking the identity between the Bs and Hs.

XXIX. Syllogisms which employ reduction ad impossibile are governed by the same conditions as those which are ostensive; for they too are effected by means of the consequents and antecedents of the two extreme terms. The method of investigation, too, is the same in both types; for that which is proved ostensively can be established per impossibile by means of the same terms, and vice versa: e.g., that A applies to no E. For let it be assumed that it applies to some. Then since B applies to all A, and A to some E, B will apply to some E. But ex hypothesi it applies to none. Again, it can be proved that A applies to some E; for if it applies to none, and

b The relations of these terms are still as assumed in ch. xxviii.
Ἕπεται ἑκάτερον. Καὶ καθ᾽ ἑκατον πρόβλημα ἡ αὐτὴ σκέψις δεικτικῶς τε βουλομένως συλλογίσασθαι καὶ εἰς τὸ ἀδύνατον ἀγαγεῖν· ἐκ γὰρ τῶν αὐτῶν ὅρων ἀμφότεραι αἱ ἀποδείξεις· οἷον εἰ δεδεικταὶ μηδεὶς ὑπάρχειν τῷ Ἐ τῷ Ἁ, ὅτι συμβαίνει καὶ τῷ Ὁ τινὶ τῶν Ἑ ὑπάρχειν, ὅπερ ἀδύνατον· ἐὰν ληφθῇ τῷ μὲν Ἐ μηδεὶς τῷ δὲ Ἀ παντὶ ὑπάρχειν τῷ Ὁ, φανερῶν ὅτι οὕδεν τῷ Ἐ τῷ Ἁ ὑπάρχει· πάλιν εἰ δεικτικῶς συλλελογισμαὶ τῷ Ἀ τῷ Ἐ μηδεὶς ὑπάρχειν, ὑποθεμένοις ὑπάρχειν τινὶ διὰ τοῦ ἀδύνατον δεικθῆσεται οὕδεν ὑπάρχειν. ὑμοῖος δὲ κατὶ τῶν ἄλλων· ἐν ἀπασὶ γὰρ ἀνάγκη κοινῶν τινα λαβεῖν ὅρον ἄλλον τῶν ὑποκειμένων, πρὸς ὃν ἐσται τοῦ φευδοῦς ὁ συλλογισμός, ὅστ᾽ ἀντιστραφείσης ταύτης τῆς προτάσεως τῆς δὲ ἑτέρας ὑμοίως ἐχούσης, δεικτικὸς ἐσται ὁ συλλογισμός διὰ τῶν αὐτῶν ὅρων. διαφέρει γὰρ ὁ δεικτικὸς τοῦ εἰς τὸ ἀδύνατον ὅτι ἐν μὲν τῷ δεικτικῷ κατ᾽ ἀλήθειαν ἀμφότεραι τιθένται αἱ προτάσεις, ἐν δὲ τῷ εἰς τὸ ἀδύνατον φευδῶς ἡ μία.

Ταῦτα μὲν οὖν ἐσται μᾶλλον φανερὰ διὰ τῶν ἐπομένων, ὅταν περὶ τοῦ ἀδύνατον λέγωμεν νῦν δὲ τοσοῦτον ἢμῖν ἐστω δήλου, ὅτι εἰς ταῦτα βλέπετον δεικτικῶς τε βουλομένως συλλογίζεσθαι καὶ εἰς τὸ ταῦτα corr. C: ταῦτα codd.
E applies to all G, A will apply to no G; but ex hypothesi it applies to all. Similarly with all other propositions; proof per impossibile will always be possible in all cases by means of the consequents and antecedents of the extreme terms.

Moreover, in every problem the procedure is the same whether it is required to employ an ostensive syllogism or reduction ad impossibile; for both proofs are effected by means of the same terms. E.g., supposing that it has been proved that A applies to no E, because (if A applies to some) it follows that B also applies to some E, which is impossible: if it is assumed that B applies to no E but to all A, it is evident that A will apply to no E. On the other hand if the conclusion that A applies to no E has been reached ostensively, if we assume that A applies to some E, we can prove per impossibile that it applies to none. Similarly too in all other examples; for in every case we must take some common term (other than those which have been laid down) to which the syllogism proving the false conclusion will refer, so that when this premiss is converted a (the other remaining unchanged) the syllogism will become ostensive by means of the same terms. For the difference between ostensive proof and proof per impossibile is that in the former both premisses are assumed as true, while in the latter one is assumed as false.

These points will become clearer in the light of subsequent remarks when we are discussing proof per impossibile. b For the present let us take it that so much is obvious: that we must have regard to the same terms whether it is required to prove a conclusion ostensively or to employ reduction ad impossibile.
ἀδύνατον ἀγαγεῖν. ἐν δὲ τοῖς ἄλλοις συλλογισμοῖς τοῖς ἐξ ὑποθέσεως, οἷον ὅσοι κατὰ μεταληψιν ἢ κατὰ ποιώτητα, ἐν τοῖς ὑποκειμένοις οὐκ ἐν τοῖς ἐξ ἀρχῆς ἀλλ’ ἐν τοῖς μεταλαμβανομένοις ἐσται ἢ σκέψις, ὁ δὲ τρόπος ὁ αὐτὸς τῆς ἐπιβλέψεως.

20 ἐπισκέψασθαι δὲ δεῖ καὶ διελεῖν ποσάχως οἱ ἐξ ὑποθέσεως.

Δείκνυται μὲν οὖν ἕκαστον τῶν προβλημάτων οὕτως, ἐστὶ δὲ καὶ ἄλλον τρόπον ἐναὶ συλλογίσασθαι τούτων, οἷον τὰ καθόλου διὰ τῆς κατὰ μέρος ἐπιβλέψεως ἐξ ὑποθέσεως. εἰ γὰρ τὰ Γ καὶ τὰ Η ταῦτα εἰη, μόνοις δὲ ληφθεὶν τοῖς Η τοῦ Ε ὑπάρχειν, παντὶ ἀν τῶν Ε τὸ Α ὑπάρχοι· καὶ πάλιν εἰ τὰ Δ καὶ Η ταῦτα, μόνων δὲ τῶν Η τοῦ Ε κατηγοροῖτο, ὅτι οὐδενὶ τῶν Ε τὸ Α ὑπάρξει. φανερὸν οὖν ὅτι καὶ οὕτως ἐπιβλεπτέον.

Τὸν αὐτὸν δὲ τρόπον καὶ ἐπὶ τῶν ἀναγκαίων καὶ τῶν ἐνδεχομένων· ἢ γὰρ αὐτῇ σκέψις καὶ διὰ τῶν αὐτῶν ὀρῶν ἐσται τῇ τάξει τοῦ τ' ἐνδέχεσθαι καὶ τοῦ ὑπάρχειν ὁ συλλογισμός. ληπτέον δ' ἐπὶ τῶν ἐνδεχομένων καὶ τὰ μὴ ὑπάρχοντα δυνατὰ δ' ὑπάρχειν· δεδεικται γὰρ ὅτι καὶ διὰ τούτων γίγνεται ὁ τοῦ ἐνδέχεσθαι συλλογισμός. ὁμοίως δ' ἔξει καὶ ἐπὶ τῶν ἀλλων κατηγοριῶν.

Φανερὸν οὖν ἐκ τῶν εἰρημένων οὐ μόνον ὅτι ἐγχωρεῖ διὰ ταύτης τῆς ὁδοῦ γίγνεται πάντας τοὺς συλλογισμοὺς, ἀλλὰ καὶ ὅτι δ' ἄλλης ἀδύνατον.

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* Cf. 41 a 39.
* A fortiori or analogical arguments (Alexander 324. 19).
* e.g., the hypothesis in the immediately following examples, that E applies to G only. 32 b 25 fff.
* i.e. propositions expressing a modal relation other than that of necessity or possibility.

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the case of other hypothetical syllogisms, however, e.g., such as involve substitution or a qualitative relation, inquiry will be concerned not with the terms originally assumed but with those which are substituted, while the manner of investigation will be the same as before. We must, however, consider and analyse the different types of hypothetical syllogisms.

Every kind of proposition, then, can be proved in the way described above; but some can be established syllogistically in another way also. E.g., universal propositions can be proved by the method of investigation proper to the corresponding particular conclusion, with the help of a further hypothesis. For assuming that C and G are identical, and E applies to G only, A will apply to all E; and again assuming that D and G are identical, and E is predicated only of G, it follows that A will apply to no E. Thus it is evident that we must consider the problem in this way also.

The same method applies also to apodeictic and problematic syllogisms; for the process of inquiry is the same, and the syllogisms will be effected by means of the same arrangement of terms, whether it is problematic or assertoric. In the case of problematic propositions, however, we must include those terms which, although they do not apply, might possibly do so; for it has been shown that the problematic syllogism is effected by means of these also. The same principle will hold good in the other modes of predication.

Thus it is evident from the foregoing analysis not only that all syllogisms can be effected by this method, but also that they cannot be effected by any
ἅπας μὲν γὰρ συλλογισμὸς δεδεικται διὰ τινὸς τῶν προειρημένων σχημάτων γιγνόμενος, ταῦτα δ' ούκ ἐγχωρεί δι' ἄλλων συνταθήναι πλὴν διὰ τῶν ἐπομένων καὶ οἷς ἐπετει ἐκαστον· ἐκ τούτων γὰρ αἱ προτάσεις καὶ ἡ τοῦ μέσου λῆψις, ὡστ' οὐδὲ συλλογισμὸν ἐγχωρεῖ γίγνεσθαι δι' ἄλλων.

XXX. Ἡ μὲν οὖν ὁδὸς κατὰ πάντων ἡ αὐτὴ καὶ περὶ φιλοσοφιῶν καὶ περὶ τέχνην ὁποιανοῦ καὶ μάθημα· δεῖ γὰρ τὰ ὑπάρχοντα καὶ οἷς ὑπάρχει περὶ ἐκάτερον' ἀθρεῖν, καὶ τούτων ὡς πλείστων εὑπορεῖν, καὶ ταῦτα διὰ τῶν τριῶν ὅρων σκοπεῖν, ἀνασκευάζοντα μὲν ὡδε, κατασκευάζοντα δὲ ὡδε, κατὰ μὲν ἄλῃθειαν ἐκ τῶν κατ' ἄλῃθειαν διαγεγραμμένων ὑπάρχειν, εἰς δὲ τοὺς διαλεκτικοὺς συλλογισμοὺς ἐκ τῶν κατὰ δόξαν προτάσεων.

Αἰ δ' ἄρχαι τῶν συλλογισμῶν καθόλου μὲν εἰρήνεται, διὸ τρόπων ἔχουσι καὶ διὸν τρόπων δεῖ θερεύειν αὐτάς, ὥσες μὴ βλέπωμεν εἰς ἀπαντα τὰ λεγόμενα, μηδ' εἰς ταῦτα κατασκευάζοντες καὶ ἀνασκευάζοντες, μηδὲ κατασκευὰζοντες τε κατὰ παντὸς ἡ τινὸς καὶ ἀνασκευάζοντες ἀπὸ πάντων ἡ τινῶν, ἀλλ' εἰς ἐλάττων καὶ ὁρισμένα, καθ' ἐκαστον δὲ ἐκλέγειν τῶν ὅτων, οἷον περὶ ἀγαθοῦ ἡ ἐπιστήμη.

"'Ιδιαὶ δ' καθ' ἐκαστήν εἰσὶν αἱ πλείσται. διὸ τὰς μὲν ἄρχας τὰς περὶ ἐκαστον ἐμπειρίας ἐστὶ παραδοῦναι. λέγω δ' οἷον τὴν ἀστρολογικὴν μὲν ἐκαστὸν μὺ, Bekker.

* i.e. the premisses.
other. For it has been proved that every syllogism is effected by means of one of the figures already described, and these cannot be composed otherwise than by means of the consequents and antecedents of the terms in each particular case; for it is from these that the premisses are formed and the middle term discovered. Hence a syllogism cannot be effected by any other terms than these.

XXX. The method, then, is the same in all cases, not only in philosophy but in every kind of art or study. We must look for the attributes and subjects of both our terms, and supply ourselves with as many as we can: and then we must consider them by means of the three terms, refuting in this way, establishing in that; when our object is truth, working from terms which are arranged to express a true relation, and when we require dialectical syllogisms, working from plausible premisses.

The principles of syllogisms have now been described in general terms, both how they are constituted and how we should look for them; not by considering all that is predicated of the terms in question, nor by considering the same attributes whether we are establishing or refuting a proposition, nor whether we are establishing it of all or some or refuting it of all or some; but by considering a limited number of definite attributes. We must select with regard to each particular thing that is, e.g., with regard to goodness or knowledge.

Most of the principles, however, which are connected with a particular science are peculiar to it. Hence to convey to us the principles connected with each particular science is the task of experience. I mean, e.g., that it is for astronomical experience to

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ἈΡΙΣΤΟΤΕΛΟΣ

20 ἐμπειρίαν τῆς ἀστρολογικῆς ἐπιστήμης· ληφθέντων γὰρ ἱκανῶς τῶν φαινομένων οὔτως εὑρέθησαν αἱ ἀστρολογικαὶ ἀποδείξεις, ὁμοίως δὲ καὶ περὶ ἀλλήν ὁποιανοῦ ἔχει τέχνην τε καὶ ἐπιστήμην. ὥστε ἐὰν ληφθῇ τὰ ὑπάρχοντα περὶ ἑκαστον, ἡμέτερον ἡ ὅτας ἀποδείξεις ἐτοίμως ἐμφανίζειν. 
25 εἰ γὰρ μηδέν κατὰ τὴν ἱστορίαν παραλειφθείη τῶν ἀληθῶς ὑπαρχόντων τοῖς πράγμασιν, ἔξομεν περὶ ἀπαντος οὐ μὲν ἐστιν ἀποδείξεις, ταύτην εὑρεῖν καὶ ἀποδεικνύναι, οὐ δὲ μὴ πέφυκεν ἀποδείξεις, τότε ποιεῖν φανερόν.

Καθόλου μὲν οὖν, ὅπειρον τὰς προτάσεις ἐκλέγειν, εἰρηται σχεδὸν· δι’ ἀκριβείας δὲ δι’  
20 εἰρηλύθαμεν ἐν τῇ πραγματεια τῇ περὶ τὴν διαλεκτικήν.

XXXI. Ὅτι δὲ ἡ διὰ τῶν γενῶν διαίρεσις μικρὸν τι μόριον ἐστι τῆς εἰρημένης μεθόδου, ὥστε ἡ διαίρεσις οὐκ ἀπὸ τῶν συλλογισμῶν· δὲ μὲν γὰρ δὲι δειξαι αἰτεῖται, συλλογίζεται δὲ ἀτι τι 
25 τῶν ἰνόθεν. πρῶτον δ’ αὐτὸ τοῦτο ἔλεσθε τοὺς χρωμένους αὐτῇ πάντας, καὶ πείθειν ἐπεχείρου ὡς οὗτος δυνατοῦ περὶ οὗιας ἀποδείξεις γίγνεσθαί καὶ τοῦ τι ἐστιν· ἃτι οὔτε ὅ τι ἐνδέχεται συλλογι- 
σασθαι διαιρομένους διαιρομένους1 ἐνυίσκαν, οὔτε ὅτι οὔτως ἐνεδέχετο ὥσπερ εἰρήκαμεν. ἐν μὲν οὖν ταῖς ἀπο- 
40 δειξεσιν, ὅταν δὲ τὶ συλλογίζασθαι ὑπάρχειν, δεὶ 
45 τὸ μέσον, δι’ οὐ γίγνεται τὸ συλλογισμός, καὶ ἡ ὅτον 

1 διαιρομένους ὀμι, Alexander, Waitz: διαιρούμενον.

* Topics, I. xiv.
convey to us the principles of astronomy (for it was not until the phenomena had been thoroughly apprehended that the demonstrations of astronomy were discovered); and the same applies to any other art or science. So if we apprehend the attributes of the object in question, it will at once be in our power readily to exhibit the demonstrations; for assuming that none of the true attributes of the objects concerned has been omitted in our survey, we shall be able to discover and demonstrate the proof of everything which has a proof, and to elucidate everything whose nature does not admit of proof.

The foregoing is a rough description in general terms of the way in which the premisses should be selected. We have considered this subject with detailed accuracy in our treatise on dialectic.\(^a\)

XXXI. It is easy to see that the process of division by genera\(^b\) is a minor instance of the method described above; for the division is, as it were, a weak syllogism, since it begs the point which it is required to prove, and always reaches a more general conclusion than is required. In the first place this fact had escaped all the exponents of the process; and they tried to insist that it is possible to effect a demonstration of substance and essence. Hence they did not understand what syllogistic conclusion can be reached by the process of division, nor did they realize that it can be reached in the way which we have described. In demonstrations when it is required to prove syllogistically an affirmative proposition, the middle term, by means of which the syllogism is effected, must always be subordinate to

\(^a\) The Platonic method of dichotomy. Cf. Sophist 219 \(a\) ff., Politicus 258 \(b\) ff.
ἀεὶ εἶναι καὶ μὴ καθόλου τοῦ πρώτου τῶν ἄκρων
ἡ δὲ διαίρεσις τοῦναντίον βουλεταί: τὸ γὰρ καθόλου
λαμβάνει μέσον.

'Εστω γὰρ ζώον μὲν ἐφ' οὗ Α, τὸ δὲ θνητὸν ἐφ'
οὐ Β, καὶ ἀθάνατον ἐφ' οὗ Γ, ὁ δ' ἄνθρωπος, οὐ τοῦ
ὄρον δεῖ λαβεῖν, ἐφ' οὐ τὸ Δ. ἀπαν δὴ ζώον λαμ-
βάνει ἡ θνητὸν ἡ ἀθάνατον· τοῦτο δ' ἐστὶν, ὃ ἂν ἢ
Α, ἀπαν εἶναι ἡ Β ἡ Γ. πάλιν τὸν ἄνθρωπον ἀεὶ
diairouμενος τίθεται ζώον εἶναι, ὡστε κατὰ τοῦ
Δ τὸ Λ λαμβάνει ὑπάρχειν. ὁ μὲν οὖν συλλογισμὸς

10 ἐστιν ὅτι τὸ Δ ἡ Β ἡ Γ ἀπαν ἐσται, ὡστε τὸν
ἄνθρωπον ἡ θνητὸν μὲν ἡ ἀθάνατον ἀναγκαῖον
eῖναι, ζώον θνητὸν δε ὑπὲρ ἀναγκαῖον, ἂλλ' αἰτεῖται
tοῦτο δ' ἢν ὁ ἐδει συλλογίσασθαι. καὶ πάλιν
θέμενος τὸ μὲν Α ζώον θνητὸν, ἐφ' οὗ δὲ τὸ Β
ὑπόπουν, ἐφ' οὗ δὲ τὸ Γ ἀπούν, τὸν δ' ἄνθρωπον τὸ

15 Δ, ὡσαύτως λαμβάνει τὸ μὲν Α ἦτοι ἐν τῷ Β ἢ ἐν
tῷ Γ εἶναι (ἀπαν γάρ ζώον θνητὸν ἢ ὑπόπουν ἢ
ἀποῦν ἐστὶ), κατὰ δὲ τοῦ Δ τὸ Α (τὸν γάρ ἄνθρωπον
ζώον θνητὸν εἶναι ἑλαβεῖν). ἢστ' ὑπόπουν μὲν ἢ
ἀποῦν εἶναι ζώον ἀνάγκη τὸν ἄνθρωπον, ὑπόπουν
δ' ὑπὲρ ἀνάγκη ἂλλα λαμβάνει· τοῦτο δ' ἢν ὁ ἐδει

20 πάλιν δείξαι. καὶ τούτων δὴ τῶν τρόπων ἀεὶ δια-
ρουμένων τὸ μὲν καθόλου συμβαίνει αὐτοῖς μέσον
λαμβάνειν, καθ' οὗ δ' ἐδει δείξαι καὶ τὰς διαφορὰς
ἄκρα. τέλος δὲ ὅτι τοῦτ' ἐστιν ἄνθρωπος ἢ ὁ τι
ποτ' ἢ τὸ ζητοῦμεν οὐδὲν λέγουσι σαφὲς, ἢστ'
ἀναγκαῖον εἶναι· καὶ γὰρ τὴν ἁλλὴν ὁδὸν ποιοῦνται

25 πᾶσαν, οὐδὲ τὰς εἰνδεχομένας εὐπορίας ὑπολαμ-
βάνοντες ὑπάρχειν.
the major, not a universal which includes it; but the process of division requires the contrary procedure, since it takes the universal as the middle term.

For example, let A be ‘animal,’ B ‘mortal,’ C ‘immortal’ and D ‘man,’ whose definition it is required to find. Then the exponent of division assumes that every animal is either mortal or immortal, i.e., that everything which is A is either B or C. Next, continuing his process of division, he takes ‘man’ to be an animal, i.e. he assumes that A is predicated of D. The syllogism, then, is ‘Every D will be either B or C,’ so that man must necessarily be either mortal or immortal. But that he is a mortal animal is not a necessary inference, but is begged; and this is the very point which ought to have been proved by syllogism. Again, taking A as ‘mortal animal,’ B as ‘footed,’ C as ‘footless’ and D as ‘man,’ he assumes as before that A is included in either B or C (since every mortal animal is either footed or footless) and that A is predicated of D (for he assumed that man is a mortal animal). Hence man must be either a footed or a footless animal. That he is a footed animal, however, is not a necessary inference, but is begged; and this again is the very point which ought to have been proved by syllogism. Since they invariably divide in this way, it follows that they take the universal term as the middle, and the subject to be defined, together with the differentiae, as the extreme terms. Finally they make no definite statement such as is necessarily valid to the effect that man, or whatever concept they are examining, is so-and-so; for they follow the other method throughout, without even suspecting that the available facilities for demonstration exist.
Φανερὸν δ’ ὁτι οὔτ’ ἀνασκευάσαι ταύτη τῇ μεθόδῳ ἔστιν, οὔτε περὶ συμβεβηκότος ἢ ἰδίου συλλογίσασθαι, οὔτε περὶ γένους, οὔτ’ ἐν οἷς ἀγνοεῖται τὸ πότερον ὡδε ἢ ὡδε ἔχει, οἶον ἂρ’ ἢ διάμετρος ἀσύμμετρος. ἐὰν γὰρ λάβῃ ὁτι ἅπαν μήκος ἢ σύμμετρον ἢ ἀσύμμετρον, ἢ δὲ διάμετρος μήκος, συλλογίσηται ὅτι ἀσύμμετρον ἢ σύμμετρος ἢ διάμετρος. εἰ δὲ λήψεται ἀσύμμετρον, δ’ ἐδει συλλογίσασθαι λήψεται. οὐκ ἀρα ἐστι δεῖξαι ἢ μὲν γὰρ ὥδες αὐτὴν, διὰ ταύτης δ’ οὖκ ἔστιν. τὸ ἀσύμμετρον ἢ σύμμετρον ἢ ἀρκεῖ οὐ Α, μήκος Β, διάμετρος Γ.

Φανερὸν οὖν ὁτι οὔτε πρὸς πάσαν σκέψιν ἀρμόζει τῆς ζητήσεως ὁ τρόπος, οὔτ’ ἐν οἷς μάλιστα δοκεῖ πρέπειν, ἐν τούτοις ἐστὶ χρήσιμος. Ἐκ τίνων μὲν οὖν αἱ ἀποδείξεις γίγνονται καὶ πῶς, καὶ εἰς ποία βλεπτέον καθ’ ἕκαστον πρόβλημα, φανερὸν ἐκ τῶν εἰρημένων.

XXXII. Πῶς δ’ ἀνάξομεν τοὺς συλλογισμοὺς εἰς τὰ προειρημένα σχήματα, λεκτέον ἂν εἴη μετὰ ταῦτα· λοιπὸν γὰρ ἐτί τοῦτο τῆς σκέψεως. εἰ γὰρ τὴν τε γένεσιν τῶν συλλογισμῶν θεωροῖμεν καὶ τοῦ εὑρίσκειν ἐχοιμεν δύναμιν, ἐτί δὲ τοὺς γεγενημένους ἀναλύοιμεν εἰς τὰ προειρημένα σχήματα, τέλος ἂν ἔχοι ἢ ἔχει ἀρχής πρόθεσις. συμβήσεται δ’ ἀμα καὶ τὰ πρότερον εἰρημένα ἐπιβεβαιώσθαι καὶ φανερώτερα εἶναι ὅτι οὔτως ἔχει διὰ τῶν νῦν λεχ-
It is evident that by this method it is impossible either (a) to refute a proposition, or to draw an inference (b) about an accident or property, or (c) about a genus, or (d) in cases where a question of fact is uncertain, e.g., whether the diagonal of a square is incommensurable with the sides. For if one assumes that every linear magnitude is either commensurable or incommensurable, and the diagonal is a linear magnitude, the conclusion is that the diagonal is either commensurable or incommensurable; and if one assumes it to be incommensurable, he will be assuming what ought to have been proved by syllogism. Therefore proof is impossible; for this is the method, and by it there is no proof. A stands for 'commensurable or incommensurable,' B for 'linear magnitude,' C for 'diagonal.'

Thus it is evident (1) that this method of inquiry is not adapted for every investigation, and (2) that it is useless even in those cases for which it is supposed to be especially suitable.

Thus it is evident from the foregoing account by what means and in what way demonstrations are effected, and what kind of attributes should be taken into account in each type of problem.

XXXII. We must next explain how to reduce syllogisms\(^a\) to the figures previously described; this part of our inquiry still remains. For if we examine the means by which syllogisms are produced, and possess the ability to invent them, and can also reduce the syllogisms when constructed to the figures previously described, our original undertaking will be completed. Incidentally our previous statements will be further confirmed, and their accuracy will be made more evident, by what is now

\(^a\) Reduction of arguments to syllogistic form.
θησομένων: δεῖ γὰρ πᾶν τὸ ἀληθὲς αὐτὸ ἑαυτῷ ὀμολογούμενον εἶναι πάντη.

10 Πρῶτον μὲν οὖν δεῖ πειρᾶσθαι τὰς δύο προτάσεις ἐκλαμβάνειν τοῦ συλλογισμοῦ (ῥᾷον γὰρ εἰς τὰ μείζων διελεῖν ἡ τὰ ἐλάπτω, μείζων δὲ τὰ συγκεῖμενα ἡ ἐξ ἄν), εἰτα σκοπεῖν ποτέρα ἐν ὅλῳ καὶ ποτέρα ἐν μέρει, καὶ εἰ μὴ ἁμφω εἰλημμέναι εἰεν, αὐτὸν τιθέντα τὴν ἑτέραν. ἐνίοτε γὰρ τὴν καθὸλου προτείναντες τὴν ἐν ταύτῃ οὐ λαμβάνουσιν, οὔτε γράφοντες οὔτ᾽ ἐρωτῶντες ἢ τὰύτας μὲν προτείνουσι, δὲ ὁν δ᾽ αὐταὶ περαινοῦται παραλείπουσιν, ἄλλα δὲ μάτην ἐρωτῶσι. σκεπτέον οὖν εἰ τι περίεργον εἰληπταί καὶ τι τῶν ἀναγκαίων παρα- λέλειπται, καὶ τὸ μὲν βετέον τὸ δ᾽ ἁφαρετέον ἐώς ἂν ἐλθῇ τις εἰς τὰς δύο προτάσεις ἄνευ γὰρ τούτων οὐκ ἔστιν ἀναγαγεῖν1 τοὺς οὕτως ἐρωτημένους λόγους. ἐνίοτε γὰρ οὐν ράδιον ἰδεῖν τὸ ἐνδεές, ἐνιοὶ δὲ λανθάνουσι καὶ δοκοῦσι συλλογίζεσθαι διὰ τὸ ἀναγκαίον τι συμβαίνειν ἐκ τῶν κειμένων, οἷον εἰ τραγικῶς ὁι ὁμοιομέναι ἃναμη καὶ τὸ ὁμοιομενὴν καὶ τὸ ἐκ τούτων φθείρεσθαι τούτων γὰρ τεθέντων ἀναγκαίον μὲν τὸ ὁσιας μέρος εἶναι ὁσίαν οὐ μὴν συλλελογισται διὰ τῶν εἰλημμένων, ἄλλα ἑλλείπουσι προτάσεις. πάλιν εἰ ἄνθρωπον ὄντος ἁνάγκη ANTA οὐν εἶναι

1 ἀγαγεῖν Adnu.

* In this case the terms.  
* Cf. Topics, VIII. 1.  
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to follow; for every truth must be in all respects self-consistent.

First, then, we must try to select the two premisses of the syllogism (since it is easier to analyse into the greater than into the smaller parts, and the composite is greater than its constituents), and then consider which is universal and which particular, supplying the missing premiss ourselves if only one has been assumed; for both in writing and in argument people sometimes, while stating the universal premiss, fail to mention the premiss contained in it, or they state the immediate premisses, but omit to mention the premisses from which they are inferred, and unnecessarily ask for the concession of others. We must consider, then, whether anything superfluous has been assumed, and whether anything necessary has been left out, and we must posit the latter and reject the former until we arrive at the two premisses; for without these we cannot reduce arguments which have been suggested in the way described above. The inadequacy of some arguments is easily seen, but others escape detection and appear to have a syllogistic force because some necessary conclusion follows from what is laid down: e.g., if it were assumed (a) that substance is not destroyed by the destruction of non-substance, and (b) that if the constituents of anything are destroyed, that which is composed of them also perishes; for if we posit these assumptions it necessarily follows that any part of substance is substance, yet it has not been proved syllogistically by means of the assumptions; the premisses are deficient. Again, if something animate must exist if man exists, and substance must exist if something animate exists,
καὶ ξύφον οὐσίαν, ἄνθρωπον ὁντὸς ἀνάγκη οὐσίαν εἶναι. ἀλλ᾽ οὔτω συλλελόγισται: οὐ γὰρ ἔχουσιν αἱ προτάσεις ὡς εἴπομεν.

Ἀπατώμεθα δὲ ἐν τοῖς τοιούτοις διὰ τὸ ἀναγκαίον τι συμβαίνειν ἐκ τῶν κειμένων, ὅτι καὶ ὁ συλλογισμὸς ἀναγκαίον ἐστιν. ἐπὶ πλέον δὲ τὸ ἀναγκαίον ἢ ὁ συλλογισμὸς: ὁ μὲν γὰρ συλλογισμὸς πᾶς ἀναγκαίον, τὸ δὲ ἀναγκαίον οὐ πᾶν συλλογισμὸς. ὅστ᾽ οὐκ εἰ τι συμβαίνει τεθέντων τινῶν πειρατέων ἀνάγειν εὐθὺς, ἀλλὰ πρῶτον ληπτέον τὰς δύο προτάσεις, ἐὰν οὖτω διαφέρειν εἰς τοὺς ὁρους, μέσον δὲ θετέον τῶν ὁρων τὸν ἐν ἀμφοτέραις ταῖς προτάσεις λεγόμενον ἀνάγκη γὰρ τὸ μέσον ἐν ἀμφοτέραις ὕπαρχειν ἐν ἀπασί τοῖς σχήμαισι. ἐὰν μὲν οὖν κατηγορηται καὶ κατηγορηται τὸ μέσον, ἢ αὐτὸ μὲν κατηγορηται ἀλλ᾽ ἐκείνον ἀπαρνηται, τὸ πρῶτον ἐσται σχῆμα: εὰν δὲ καὶ κατηγορηται ἀπὸ τίνος, τὸ μέσον: εὰν δὲ ἀλλὰ ἐκείνου κατηγορηται, ἢ τὸ μὲν ἀπαρνηται τὸ δὲ κατηγορηται, τὸ ἐσχατον ἀπὸ γὰρ εἰσχεν ἐν ἐκάστῳ σχῆματι τὸ μέσον. ὥμως δὲ καὶ εᾶν μὴ καθόλου ὥσιν αἱ προτάσεις: ὁ γὰρ αὐτὸς διορίσιμος τοῦ μέσου. φανερὸν οὖν ὡς ἐν ὧν λόγῳ μὴ λέγεται ταὐτὸ πλεονάκις, ὅτι οὐ γύνεται συλλογισμός: οὐ γὰρ εἴληπται μέσον. ἐπεὶ δὲ ἔχομεν ποιον ἐν ἐκάστῳ σχῆματι περαινεται τῶν προβλημάτων, καὶ ἐν τίνι τὸ καθόλου καὶ ἐν ποιῷ τὸ ἐν μέρει, φανερὸν

* 25 b 35, 26 b 36, 26 a 12.
substance must exist if man exists; but the argument is not yet a syllogism, because the premisses are not conditioned in the way which we have described.

We are misled in these examples by the fact that something necessarily follows from what has been laid down, because the syllogism is also necessary. But 'necessary' has a wider extension of meaning than 'syllogism,' for every syllogism is necessary, but not everything necessary is a syllogism. Hence if something follows from certain assumptions we must not immediately try to reduce the argument to a syllogism; we must first grasp the two premisses, and so proceed to analyse them into their terms, and posit as the middle term that which is stated in both premisses; for in all the figures the middle term must be present in both premisses. Thus if the middle term both is and has a predicate, or is itself a predicate and has something else denied of it, we shall have the first figure; if it is a predicate and has something else denied of it, we shall have the middle figure; and if other terms are asserted of it, or if one term is denied and the other asserted of it, we shall have the last figure; for we have seen that the middle term stands in these relations in the several figures. Similarly too if the premisses are not universal; for the definition of the middle term is the same as before. Thus it is evident that if in any argument the same term is not stated more than once, there is no syllogism, because no middle term has been taken. And since we now comprehend what type of proposition is proved in each figure, i.e. in which figure the universal proposition is proved and in which the particular, it is evident that

Not every argument which gives a necessary conclusion is a syllogism.
τὸ σχῆμα.

XXXIII. Πολλάκις μὲν οὖν ἀπατᾶσθαι συμβαίνει περὶ τοὺς συλλογισμοὺς διὰ τὸ ἀναγκαῖον, ἀποτελεῖν εἰρητή πρότερον, ἐνίοτε δὲ παρὰ τὴν ὁμοιότητα τῆς τῶν ὀρων θέσεως· ὀπερ οὐ χρή λαυθάνειν ἡμᾶς. οἰον εἰ τὸ A κατὰ τοῦ B λέγεται καὶ τὸ B κατὰ τοῦ Γ. δόξεις γὰρ ἃν οὔτως ἐχόντων τῶν ὀρων εἶναι συλλογισμός, οὐ γίγνεται δ’ οὔτ’ ἀναγκαῖον οὔτε οὔτε συλλογισμός. ἔστω γὰρ ἐφ’ ω Α τὸ αἰε εἶναι, ἐφ’ ω δὲ Β διανοητὸς Ἀριστομένης, τὸ δ’ ἐφ’ ω Γ Ἀριστομένης. ἀληθεὶς δὴ τὸ A τῷ B ὑπάρχειν αἰε γὰρ ἐστὶ διανοητὸς Ἀριστομένης. ἀλλὰ καὶ τὸ B τῷ Γ. ὁ γὰρ Ἀριστομένης ἔστι διανοητὸς Ἀριστομένης. τὸ δ’ A τῷ Γ. οὐχ ὑπάρχει φθαρτὸς γὰρ ἐστὶν ὁ Ἀριστομένης. οὐ γὰρ ἐγίγνετο συλλογισμός οὔτως ἐχόντων τῶν ὀρων, ἀλλ’ ἔδει καθόλου τὴν ἉΒ ληφθῆναι πρότασιν. τούτῳ δὲ ψεύδος, τὸ ἄξιον πάντα τὸν διανοητὸν Ἀριστομένην αἰε εἶναι, φθαρτὸν ὄντος Ἀριστομένους.

Πάλιν ἐστιν τὸ μὲν ἐφ’ ω Γ Μίκκαλος, τὸ δ’ ἐφ’ ω Β μουσικὸς Μίκκαλος, ἐφ’ ω δὲ τὸ A τὸ φθειρεσθαι αὔριον. ἀληθεὶς δὴ τὸ Β τοῦ Γ κατηγορεῖν· ο γὰρ Μίκκαλος ἐστι μουσικὸς Μίκκαλος· ἀλλὰ καὶ τὸ A τοῦ B· φθειρούτο γὰρ ἃν αὔριον μουσικὸς Μίκ-

1 οὐ γὰρ] οὐκ ᾧ π n, Bekker.

* 47 a 31.  
* 26 a 30.  
* i.e. cease to be cultured. The example is unhappily chosen, since 'cultured Miccalus' is a narrower term than 'Miccalus' unqualified, and therefore cannot properly stand.
we should not take all the figures into account at any
given time, but only the figure proper to the proposi-
tion in question. Where the proposition can be
proved in more than one figure, we shall identify
the figure by the position of the middle term.

XXXIII. It often happens, then, as we have
already said, that we are misled in our consideration
of syllogisms by the sequence of a necessary con-
clusion; but we are also sometimes misled—a fact
which must not be overlooked—as the result of a
similar arrangement of terms, e.g., if A is predicated
of B and B of C. For it would seem that with this
relation of terms there is a syllogism, although no
necessary consequence or syllogism results. Let A
stand for 'always existing,' B for 'Aristomenes as an
object of thought' and C for Aristomenes. Then it
is true that A applies to B, because Aristomenes as an
object of thought always exists. But B also applies
to C; because Aristomenes is Aristomenes as an
object of thought. Yet A does not apply to C;
because Aristomenes is perishable. For no syllo-
gism is produced, as we saw, by the above combina-
tion of terms; to produce a syllogism the premiss AB
ought to have been taken universally. But it is false
to postulate that all Aristomenes as an object of
thought always exists, since Aristomenes is perishable.

Again, let C stand for Miccalus, B for 'cultured
Miccalus' and A for 'perishing to-morrow.' Then it
is true to predicate B of C, because Miccalus is
cultured Miccalus. But it is also true to predicate
A of B, for cultured Miccalus may perish to-morrow.

as a middle. In the previous example 'Aristomenes as an
object of thought,' being a kind of universal, is a legitimate
middle.
καλὸς· τὸ δὲ γε Α τοῦ Γ ψεύδος· τούτο δὴ ταύτῶν ἐστὶ τῷ προτέρον· οὐ γὰρ ἀληθὲς καθόλου Μίκ· καλὸς μουσικὸς ὅτι φθείρεται αὐριον· τούτοι δὲ μὴ ληφθέντος οὐκ ἦν συλλογισμός.

Αὐτὴ μὲν οὖν ἡ ἀπάτη γίγνεται ἐν τῷ παρὰ μικρόν· ὡς γὰρ οὐδὲν διαφέρον εἰπεῖν τὸ νῦν τῶν ὑπάρχειν ἢ τὸν τῶν παντὶ ὑπάρχειν συγχωροῦμεν.

XXXIV. Πολλάκις δὲ διαφείδεσθαι συμπεσεῖ·

tαι παρὰ τὸ μὴ καλῶς ἐκτίθεσθαι τοὺς κατὰ τὴν πρότασιν ὄρους, οἷον εἰ τὸ μὲν Α εἰ ὑγίεια, τὸ δὲ ἐφὶ ὃ B νόσος, ἐφὶ ὃ δὲ Γ ἀνθρώπος. ἀληθὲς γὰρ εἰπεῖν ὅτι τὸ Α οὕδεν τῷ B ἐνδέχεται ὑπάρχειν (οὔδεμιᾶ γὰρ νόσῳ ὑγίεια ὑπάρχει), καὶ πάλιν ὅτι τὸ B παντὶ τῷ Γ ὑπάρχει (πάς γὰρ ἀνθρώπος δεκτικὸς νόσου). δοξεῖν αὐτὸν κατὰ τὴν καλῶς ἐκκεῖσθαι τοὺς ὄρους κατὰ τὴν λέξιν, ἐπεὶ μεταληφθέντων τῶν κατὰ τὰς ἐξεις οὐκ ἔσται συλλογισμός, οἷον ἄντι μὲν τῆς ὑγίειας εἰ τεθείν τὸ ὑγιαῖν, ἄντι δὲ τῆς νόσου τὸ νοσίουν. οὐ γὰρ ἀληθές εἰπεῖν ὡς οὐκ ἐνδέχεται τῷ νοσίουν τὸ ὑγιαῖν ὑπάρξαι. τούτου δὲ μὴ ληφθέντος οὐ γίγνεται συλλογισμός, εἰ μὴ τοῦ ἐνδέχεσθαι· τούτῳ δὲ οὐκ ἄδινατον· ἐνδέχεται γὰρ μηδενὶ ἀνθρώπῳ ὑπάρχειν ὑγίειαν.

Πάλιν ἐπὶ τοῦ μέσου σχήματος ὁμοίως ἐστὶ τὸ ψεύδος· τὴν γὰρ ὑγίειαν νόσῳ μὲν οὔδεμιᾶ ἀνθρώπωρ δὲ παντὶ ἐνδέχεται ὑπάρχειν, ὅστ' οὖν ἔδει ἀνθρώπων

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26 a 30.

This should strictly be a problematic premise.

The reading νόσον implies an apodeictic conclusion.
But it is false to predicate A of C. Thus the case is the same as before, because it is not universally true of cultured Miccalus that he perishes to-morrow; and unless this is assumed there is, as we saw, no syllogism.

This mistake, then, has its origin in a slight distinction; for we assent to the argument as though there were no difference between the statements 'this applies to that' and 'this applies to all of that.'

XXXIV. It will often happen, however, that we are entirely misled through failure to set out the terms properly in the premiss: e.g., supposing that A is 'health,' B 'disease' and C 'man.' For it is true to say that A cannot apply to any B (since health applies to no disease) and again that B applies to all C (since every man is liable to disease). Thus it would seem to follow that health cannot apply to any man. The reason of this is that the terms are not properly expressed in the proposition, since if we substitute for the respective states the objects corresponding to them, there will be no syllogism; I mean supposing that 'the healthy' is posited instead of 'health,' and 'the diseased' instead of 'disease.' For it is not true to say that being healthy cannot apply at any time to the diseased; but if this is not assumed, no syllogism results, except of the problematic type. This is not impossible, since health may apply to no man.

Again, in the middle figure the fallacy will occur in a similar form: health cannot apply to any disease, but may apply to every man; hence disease does not 'cannot apply.' This is inconsistent with Aristotle's doctrine in 38 a 13 ff. Either it is a careless mistake, or we should read nóros.
νόσον.\(^1\) ἐν δὲ τῷ τρίτῳ σχήματι κατὰ τὸ ἐνδέχεσθαι συμβαίνει τὸ ψεύδος. καὶ γὰρ ὑγίειαν καὶ νόσον, καὶ ἐπιστήμην καὶ ἁγνοιαν, καὶ οὕτως τὰ ἑναντία τῷ αὐτῷ ἐνδέχεται ὑπάρχειν, ἀλλήλους δὲ ἁδύνατον. τὸ τὸν ἀνομολογούμενον τοῖς προειρημένοις ὅτε γὰρ τῷ αὐτῷ πλεῖω ἐνδέχετο ὑπάρχειν, ἐνδέχετο καὶ ἀλλήλοις.

Φανερὸν οὖν ὅτι ἐν ἀπασί τούτοις ἡ ἀπάτη γίγνεται παρὰ τὴν τῶν ὅρων ἐκθεσίν: μεταλήψις τῶν γὰρ τῶν κατὰ τὰς ἔξεις οὐδὲν γίγνεται ψεύδος. δὴ λοιπὸν οὖν ὅτι κατὰ τὰς τοιαύτας προτάσεις αἰεὶ τὸ κατὰ τὴν ἔξιν ἀντὶ τῆς ἔξεως μεταληπτέον καὶ θετέον ὅρων.

XXXV. Οὐ δεῖ δὲ τοὺς ὅρους αἰεὶ ζητεῖν ὅνομα ματὶ ἐκτίθεσθαι: πολλάκις γὰρ ἔσονται λόγοι οἷς οὐ κεῖται ὄνομα. διὸ χαλεπὸν ἀνάγειν τοὺς τοιούτους συνλογισμοὺς. ἐνίοτε δὲ καὶ ἀπατάσθαι συμβῆσαι διὰ τὴν τοιαύτην ζήτησιν, οἷον ὅτι τῶν ἀμέσων ἐστὶ συνλογισμὸς. ἐστώ τὸ Α δύο ὀρθὰ, τὸ ἐφ᾽ ὧ Β τρίγωνον, ἐφ᾽ ὧ δὲ Γ ίσοσκελῆς. τῷ μὲν οὖν Γ ὑπάρχει τὸ Α διὰ τὸ Β, τῷ δὲ Β οὐκετί δι᾽ ἄλλο: καθ᾽ αὐτὸ γὰρ τὸ τρίγωνον ἔχει δύο ὀρθὰς, ἀπὸ οὗ ἐσται μέσον τοῦ ΑΒ ἀποδεικτοῦ ὑπῶς. φανερὸν γὰρ ὅτι τὸ μέσον οὐχ οὕτως ἀεὶ ληπτέον ὡς τόδε τι, ἀλλ᾽ ἐνίοτε λόγον, ὅπερ συμβαίνει καὶ τοῦ λεγόμενος.

XXXVI. Τὸ δὲ ὑπάρχειν τὸ πρῶτον τῷ μέσῳ

\(^1\) an νόσος?

\(^{*}\) Cf. 39 a 14-19.

\(^{*}\) i.e. represent them by single words.
apply to any man. In the third figure, however, the fallacy results in respect of possibility; for health and disease, knowledge and ignorance, and in general any pair of contraries may apply to the same object, but it is impossible that they should apply to one another. But this is inconsistent with what we said above, \(^a\) for it was laid down that when several things may apply to the same thing they may apply also to one another.

Thus it is evident that in all these cases the error arises from the setting out of the terms; for when we substitute for the states the objects corresponding to them, no fallacy results. Thus it is clear that in such premisses as these we must always substitute for a given state the object which is in that state, and posit this as our term.

XXXV. We should not always attempt to set out the terms by name, \(^b\) because we shall often have expressions for which there is no accepted name. (Hence it is difficult to reduce syllogisms of this kind.) Sometimes it will happen that we are actually misled as the result of such an attempt; \(e.g.,\) so as to suppose that there can be a syllogism of propositions which have no middle term. Let A stand for 'two right angles,' B for 'triangle' and C for 'isosceles.' Then A applies to C because of B, but it is not because of any other term that A applies to B, for the triangle of itself contains two right angles, so that there will be no middle term of the proposition AB although it is demonstrable. For it is evident that the middle term is not always to be taken as an individual thing, but sometimes as a formula; as happens in the example just quoted.

XXXVI. We must not assume that the first term

Terms cannot always be expressed in a single word.
καὶ τοῦτο τῷ ἀκρῷ οὐ δεῖ λαμβάνειν ὡς δεὶ κατ᾽ ἡγορηθησομένων ἀλλήλων ἤ ὁμοίως τῷ μέσῳ καὶ τοῦτο τῷ ἐσχάτου (καὶ ἐπὶ τοῦ μὴ υπάρχειν δ’ ὁσαντωσ). ἀλλ’ ὁσαντωσ τὸ εἶναι λέγεται καὶ τὸ ἀληθὲς εἰπεῖν αὐτὸ τοῦτο, τοσαυταχώς οἶδεθαι χρὴ σημαίνειν καὶ τὸ υπάρχειν. ὅλον δὲ τῶν ἑναντίων ἐστὶ μιὰ ἑπιστήμη. ἐστὶν γὰρ τὸ Α τὸ μίαν εἶναι ἑπιστήμην, τὰ ἑναντία ἀλλήλοις ἐφ’ ὅπου Β· τὸ δὴ Α τῷ Β υπάρχει οὐχ ὡς τὰ ἑναντία τὸ μίαν εἶναι αὐτῶν ἑπιστήμην, ἀλλ’ ὅτι ἀληθὲς εἰπεῖν κατ’ αὐτῶν μίαν εἶναι αὐτῶν ἑπιστήμην.

Συμβαίνει δ’ ὅτε μὲν ἐπὶ τοῦ μέσου τὸ πρῶτον λέγεσθαι τὸ δὲ μέσου ἐπὶ τοῦ τρίτου μὴ λέγεσθαι, οἶδε η ἁπάτεια ἐστὶν ἑπιστήμη, τοῦ δ’ ἁγαθοῦ ἐστὶν ἥ ἁπάτεια [ἐπιστήμη], ὁμιλήσεως στὶ τοῦ ἁγαθοῦ ἐστὶν ἑπιστήμη, τὸ μὲν δὴ ἁγαθὸν οὐκ ἐστὶν ἑπιστήμη, ἡ δὲ ἁπάτεια ἐστὶν ἑπιστήμη. ὅτε δὲ τὸ μὲν μέσου ἐπὶ τοῦ τρίτου λέγεται, τὸ δὲ πρῶτον ἐπὶ τοῦ μέσου οὐ λέγεται· οἶδε η τοῦ ποιοῦ παντὸς ἐστὶν ἑπιστήμη ἡ ἑναντίον, τὸ δ’ ἁγαθὸν καὶ ἑναντίον καὶ ποιοῦν, ὁμιλήσεως μὲν ὅτι τοῦ ἁγαθοῦ ἐστὶν ἑπιστήμη, οὐκ ἐστὶ δὲ τὸ ἁγαθὸν ἑπιστήμη οὐδὲ τὸ ποιοῦ οὐδὲ τὸ ἑναντίον, ἀλλὰ τὸ ἁγαθὸν ταῦτα. ἐστὶ δὲ ὅτε μὴ τὸ πρῶτον κατὰ τοῦ μέσου μὴ τοῦτο κατὰ τοῦ τρίτου, τοῦ πρῶτου κατὰ τοῦ τρίτου ὅτε μὲν λεγομένου ὅτε δὲ μὴ λεγομένου· οἶδε η οὐ ἑπιστήμη ἐστὶν, ἐστὶ τούτου

1 om. Bekker.
applies to the middle and the middle to the extreme in the sense that they will always be predicated of one another or that the first term will be predicated of the middle in the same way as the middle is predicated of the last (the same caution applies also to negative predication). We must suppose that the expression 'to apply' has as many different senses as there are senses in which we say that a thing is, or that it is true to say that it is. Take, e.g., the statement that there is one science of contraries. Let A stand for 'there being one science,' and B for 'things contrary to one another.' Then A applies to B, not in the sense that the contraries are 'there being one science' of them, but in the sense that it is true to state of them that there is one science of them.

It happens sometimes that the first term is stated of the middle, but the middle is not stated of the third term; e.g., if wisdom is knowledge, and wisdom is concerned with the good, the conclusion is that knowledge is concerned with the good. Then the good is not knowledge, although wisdom is knowledge. Sometimes the middle term is stated of the third, but the first is not stated of the middle; e.g., if there is a science of every quality or contrary, and good is both a contrary and a quality, the conclusion is that there is a science of the good; but the good is not science, nor is the quality or the contrary, although the good is a quality and a contrary. Sometimes neither the first term is stated of the middle nor the middle of the third, while the first is sometimes stated of the third and sometimes not. E.g., if there is a genus of

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\[a\] i.e. minor term.

\[b\] i.e. that both members of any given pair of contraries (e.g. health and disease) are studied by the same science.
48 b
génos, tou ὑγαθὸν ἔστιν εἰπιθήμη, συμπέρασμα ὑπὸ τοῦ ἧγαθοῦ ἔστι γένος· κατηγορεῖται ὑ δ' οὐδὲν κατ' οὐδενός. εἰ δ' οὐ ἔστω εἰπιθήμη, γένος ἔστι τούτῳ, τοῦ δ' ἦγαθοῦ ἔστω εἰπιθήμη, συμπέρασμα ὑπὸ τὰ ἄγαθον ἔστι γένος· κατὰ μὲν δὴ τοῦ ἄκρου κατηγορεῖται τὸ πρῶτον, κατ' ἀλλήλων δ' οὖ λέγεται.

Τὸν αὐτὸν δὲ τρόπον καὶ ἐπὶ τοῦ μὴ ὑπάρχειν ληπτέον. οὐ γάρ ἀεὶ σημαίνει τὸ μὴ ὑπάρχειν τόδε τῶδε μὴ εἶναι τῶδε τῶδε, ἀλλ' ἐνίοτε τὸ μὴ εἶναι τῶδε τοῦ τῶδε· οἶνον ὅτι οὐκ ἐστὶν κινήσεως κίνησις ἡ γενεσεως γένεσις, ἥδονής δ' ἐστιν· οὐκ ἥδονη ἡ ἥδονη γένεσις. ἡ πάλιν ὅτι γελωτος μὲν ἐστὶν σημεῖον, σημείου δὲ οὐκ ἐστὶ σημεῖον, ὥστ' οὐδὲ σημεῖον ὑ γέλως. ὀμοίως δὲ κἂν τοῖς ἄλλοις ἐν ὃσοις ἀναφερεῖται τὸ πρόβλημα τῷ λέγοντά πῶς πρὸς αὐτὸ τὸ γένος. πάλιν ὅτι ὁ καιρὸς οὐκ ἐστιν χρόνος δεδων· θεῷ γὰρ καιρὸς μὲν ἐστιν, χρόνος δ' οὐκ ἐστιν δεδων διὰ τὸ μηδὲν εἶναι θεῷ ὑφέλιμον. θροὺς μὲν γὰρ θετέον καιρὸν καὶ χρόνον δέοντα καὶ θεόν, τῇ δὲ προτάσεως ληπτεόν κατὰ τὴν τοῦ ὁνοματο πτώσιν. ἀπλῶς γάρ τοῦτο λέγομεν κατὰ πάντων, ὅτι τοὺς μὲν θροὺς αἰτὶ θετέον κατὰ τὰς κλησεῖς τῶν ὁνομάτων, οἶνοι ἄνθρωπος ἡ ἀγαθὸν ἡ ἐναντία, οὐκ ἄνθρωπον ἡ ἀγαθὸν ἡ ἐναντίων, τὰς δὲ προτάσεις ληπτεύον κατὰ τὰς ἐκάστου πτώσεως· ἡ γὰρ ὅτι τοῦτω, οἶνον τὸ ἱσουν, ἡ ὅτι τοῦτο, οἶνον τὸ διπλάσιον, ἡ ὅτι τοῦτο, οἶνον τὸ τύπτον ἡ ὀρῶν, 376
that of which there is a science, and there is a science of the good, the conclusion is that there is a genus of the good; yet nothing is predicated of anything. But if that of which there is a science is a genus, and if there is a science of the good, the conclusion is that the good is a genus. Thus the first is predicated of the extreme term, but the terms are not predicated of one another in the premisses.

The same must be understood to apply to negative predication; for 'X does not apply to Y' does not always mean 'X is not Y' but sometimes 'there is no X of Y' or 'for Y.' Take, for instance, the statement 'there is no motion of motion or generation of generation, but there is generation of pleasure; therefore pleasure is not generation.' Or again 'there is a sign of laughter, but there is no sign of a sign; hence laughter is not a sign.' Similarly too in all other cases in which the proposition is refuted by stating the genus in a certain relation to the terms of the proposition. Again, there is the argument that opportunity is not the right time; for opportunity belongs to God, but the right time does not, because nothing is convenient to God. We must posit as terms 'opportunity' and 'right time' and 'God,' but the premiss must be understood according to the case of the noun. For we maintain as a general rule which applies without exception to all examples that whereas the terms must always be posited in the nominative case (e.g., 'man' or 'good' or 'contraries,' not 'of man' or 'of good' or 'of contraries'), the premisses must be understood in accordance with the case of each term: either in the dative, e.g., 'equal to this,' or in the genitive, e.g., 'double of this,' or in the accusative, e.g., 'that which strikes or sees this,' or in the
ἘΠῚ ΠΗ an | ΡΝ: * SE
$se8 Se
Hae a
re ined at Bn ih βέλτιον.

ΞΞΣΞVII. Τὸ δ᾽ ὑπάρχειν τὸδε τῶδε καὶ τὸ ἀληθεύεσθαι τὸδε κατὰ τοὺδε τοσαυτάς ληπτέον ὀσαχῶς αἱ κατηγορίαι διήρηται, καὶ ταῦτας ἡ πὴ ἡ ἀπλῶς, ἐτὶ ἀπλᾶς ἡ συμπεπλεγμένας ὀρμοῖς δὲ καὶ τὸ μὴ ὑπάρχειν. ἐπισκεπτέον δὲ ταῦτα καὶ διοριστέον βέλτιον.

ΞΞΣΞVIII. Τὸ δ᾽ ἐπαναδιπλούμενον ἐν ταῖς προ-
τάσεσι πρὸς τῷ πρῶτῳ ἀκρωθετέον, οὐ πρὸς τῷ μέσῳ. λέγω δ’ οἶνον εἰ γένοιτο συλλογισμὸς ὁτι τῆς δικαιοσύνης ἐστὶν ἐπιστήμη ὅτι ἄγαθον, τὸ ὅτι ἄγαθον ἦ ἡ ἄγαθον πρὸς τῷ πρῶτῳ θετέον. ἐστω γὰρ τὸ Ἀ ἐπιστήμη ὅτι ἄγαθον, ἐφ᾽ ὧ δὲ Ὁ ἄγαθον, ἐφ᾽ ὧ δὲ Γ δικαιοσύνη. τὸ δὴ Ἄ ἀληθὲς τοῦ Β κατηγορήσαι, τοῦ γὰρ ἄγαθον ἐστὶν ἐπιστήμη ὅτι ἄγαθον· ἀλλὰ καὶ τὸ Β τοῦ Γ, ἡ γὰρ δικαιοσύνη ὑπερ ἄγαθον. οὗτω μὲν οὖν γίγνεται ἀνάλυσις.

εἰ δὲ πρὸς τῷ Β τεθεῖν τὸ ὅτι ἄγαθον, οὐκ ἐσται-
tὸ μὲν γὰρ Α κατὰ τοῦ Β ἀληθές ἐσται, τὸ δὲ Β κατὰ τοῦ Γ οὐκ ἀληθὲς ἐσται τὸ γὰρ ἄγαθον ὅτι ἄγαθον κατηγορεῖν τῆς δικαιοσύνης ἤθεδος καὶ οὐ συνετόν. ὀρμοῖς δὲ καὶ εἰ τὸ ὕγιειν δειχθεῖ ὅτι ἐστὶν ἐπιστήμης ἡ ἄγαθον, ἡ τραγελαφος 1 ἡ μὴ 25 ὅν, ἡ ἄνθρωπος φθαρτὸν ἡ αἰσθητὸν· ἐν ἀπασὶ γὰρ

1 τραγελαφος δοσαςτὸν B3d.

* Literally 'goat-deer'; a conventional example of fabulous animal. Cf. Plato, Republic 488 a, Aristophanes, Frogs 937.
* i.e. it is known not to exist. This seems to be the true
nominative, e.g., 'man is an animal'; or in any other way in which the noun occurs in the premiss.

XXXVII. The statements that X applies to Y and that X is true of Y must be understood in as many different senses as there are distinct categories; and the categories must be taken either in a particular or in an unqualified sense, and further as either simple or compound. Similarly too with negative attribution. These points, however, call for further consideration and more adequate analysis.

XXXVIII. Any term which is duplicated in the premisses should be attached to the first extreme and not to the middle. I mean, e.g., that supposing we should have a syllogism to the effect that 'there is knowledge of probity that it is good,' the expression 'that it is good' or 'qua good' should be attached to the first term. Let A stand for 'knowledge that it is good,' B for 'good' and C for 'probity.' Then it is true to predicate A of B, for there is knowledge of good that it is good. But it is also true to predicate B of C; for probity is identical with one form of good. Thus in this way an analysis can be effected. Supposing, however, that the expression 'that it is good' be attached to B, there will be no analysis; for A will be true of B, but B will not be true of C, since to predicate of probity that it is good that it is good is false and unintelligible. Similarly too supposing that it be proved that the healthy is qua good an object of knowledge, or that a unicorn is qua non-existent an object of knowledge, or that a man is qua perceptible perishable; for in all meaning. δοξαστόν, 'as imaginary,' makes good sense, but it has very little authority, and I have followed Waitz and Jenkinson in rejecting it.
᾿ τοῖς ἐπικατηγορουμένοις πρὸς τῷ ἄκρῳ τὴν ἐπανά-
διπλωσιν θετέον.

Οὐχ ἦ αὐτὴ δὲ θέσις τῶν ὅρων ὅταν ἀπλῶς τι
συλλογισθῇ καὶ ὅταν τόδε τι ἡ πη ἡ πώς, λέγω δὴ
οἶον ὅταν τάγαθον ἐπιστήτων δειχθῇ καὶ ὅταν
ἐπιστήτων1 ὅτι ἄγαθον· ἀλλ’ εἰ μὲν ἀπλῶς ἐπι-
στήτων δέδεικται, μέσον θετόν τὸ ὁν, εἰ δ’ ὅτι
ἄγαθον, τὸ τὶ ὁν. ἐστώ γὰρ τὸ μὲν Α ἐπιστήμη
ὅτι τὶ ὁν, ἐφ’ ὃ δὲ Β ὁν τι, τὸ δ’ ἐφ’ ὃ Γ ἄγαθον.
ἀληθὲς δὴ τὸ Α τοῦ Β κατηγορεῖν, ἦν γὰρ ἐπιστήμη
τοῦ τινὸς ὁντος ὅτι τὶ ὁν ἀλλὰ καὶ τὸ Β τοῦ Γ,
τὸ γὰρ ἐφ’ ὃ Γ ὁν τι ᾧκτε καὶ τὸ Α τοῦ Γ. ἐσται
ἄρα ἐπιστήμη τάγαθου ὅτι ἄγαθον· ἦν γὰρ τὸ τὶ ὁν
τῆς ἑδίον σημείων ὀυσίας. εἰ δὲ τὸ ὁν μὲσον ἐτέθη
καὶ πρὸς τῷ ἄκρῳ τὸ ὁν ἀπλῶς καὶ μὴ τὸ τὶ ὁν
ἐλέχθη, οὐκ ἂν ἦν συλλογισμός ὅτι ἐστιν ἐπιστήμη
τάγαθον ὅτι ἄγαθον, ἀλλ’ ὅτι ὁν, οἶον ἐφ’ ὃ τὸ Α
ἐπιστήμη ὅτι ὁν, ἐφ’ ὃ Β ὁν, ἐφ’ ὃ Γ ἄγαθον.
φανερὸν οὖν ὅτι ἐν τοῖς ἐν μέρει συλλογισμοῖς
ὄντως ληπτεόν τοὺς ὀρους.

XXXIX. Деι δὲ καὶ μεταλαμβάνειν ἃ τὸ αὐτὸ
dύναται, ὀνόματα ἀντ’ ὀνομάτων καὶ λόγους ἀντὶ

1 ἐπιστήτων τι codd.: om. Boethius, Waitz.
instances of supplementary predication the reduplication must be attached to the extreme a term.

The arrangement of terms is not the same when a syllogism is proved without qualification and when the proof relates to a particular thing or sense or condition; I mean, e.g., when the good is proved to be an object of knowledge and when it is proved to be an object of knowledge that it is good. If it is proved to be the former, we must posit as the middle term 'that which is'; if to be the latter, with the qualification 'that it is good,' we must posit as the middle 'that which is something.' Let A stand for 'knowledge that it is something,' B for 'that which is something' and C for 'good.' Then it is true to predicate A of B, for ex hypothesi there is knowledge of something that it is something. But it is also true to predicate B of C, for that which C represents is something. Hence it is also true to predicate A of C. Therefore there will be knowledge of the good that it is good; for ex hypothesi the expression 'that which is something' refers to the thing's particular form of being. But if we had posited 'that which is' as the middle term, and had connected in a proposition with the extreme term the unqualified expression 'that which is' instead of 'that which is something,' there would have been no syllogism proving that there is knowledge of the good that it is good, but only that it is,—e.g., if A had stood for 'knowledge that it is,' B for 'that which is,' and C for 'good.' Thus it is evident that in syllogisms which are thus particularized the terms must be taken in this way.

XXXIX. We must also substitute equivalents, substituting word for word and phrase for phrase, and
λόγων καὶ ὅνωμα καὶ λόγων, καὶ ἀεὶ ἀντὶ τοῦ λόγου τούνομα λαμβάνειν· ρᾴων γὰρ ἡ τῶν ὅρων ἐκθέσεις. 
οἷον εἰ μηδὲν διαφέρει εἰπεῖν τὸ ὑπολιπτὸν τοῦ δοξαστοῦ μὴ ἐλναι γένος ἡ μῆ εἴναι ὑπὲρ ὑπολιπτόν 
ti τὸ δοξαστὸν (ταύτων γὰρ τὸ σημασίωμεν), ἀντὶ 
toῦ λόγου τοῦ λεχθέντος τὸ ὑπολιπτὸν καὶ τὸ 
δοξαστὸν ὅρους θετέον.

10 XL. Ἐπεὶ δ’ οὐ ταύτων ἐστι τὸ εἶναι τὴν ἡδονὴν ἀγαθόν καὶ τὸ εἶναι τὴν ἡδονὴν τὸ ἀγαθόν, οὐχ ὁμοίως θετέον τοὺς ὅρους, ἀλλ’ εἰ μὲν ἐστιν ὁ συλλογισμὸς ὅτι ἡ ἡδονὴ τάγαθον, τάγαθον, εἰ 
d’ ὅτι ἀγαθόν, ἀγαθόν. οὔτως κατ’ τῶν ἅλλων.

XLI. Οὐκ ἐστι δὲ ταύτων οὔτ’ εἶναι οὔτ’ εἰπεῖν 

15 ὅτι ὁ τὸ B ὑπάρχει, τούτω παντὶ τὸ A ὑπάρχει, 
καὶ τὸ εἰπεῖν τὸ ὁ παντὶ τὸ B ὑπάρχει, καὶ τὸ 
A παντὶ ὑπάρχει· οὔδὲν γὰρ κωλύει τὸ B τῷ Γ 
ὑπάρχειν, μὴ παντὶ δὲ. οἷον ἐστώ τὸ B καλὸν τὸ 
δὲ Γ λευκὸν. εἰ δὴ λευκῷ τῳ ὑπάρχει καλὸν, 
ἀληθῶς εἰπεῖν ὅτι τῷ λευκῷ ὑπάρχει καλὸν ἅλλ’ οὐ 

20 παντὶ ῥᾳδις. εἰ μὲν οὖν τὸ A τῷ B ὑπάρχει, μὴ 
pαντὶ δὲ καθ’ οὐ τὸ B, οὔτ’ εἰ παντὶ τῷ Γ τὸ B 
οὔτ’ εἰ μόνῳ ὑπάρχει ἀνάγκη τὸ A, οὐχ ὅτι οὐ 
pαντὶ, ἅλλ’ οὔδ’ ὑπάρχειν. εἰ δὲ καθ’ οὗ ἂν τὸ B 
λέγηται ἀληθῶς τούτῳ παντὶ ὑπάρχει, συμβηκεται 

25 τὸ A, καθ’ οὗ παντὸς τὸ B λέγεται, κατὰ τούτου 
pαντὸς λέγεσθαι. εἰ μέντοι τὸ A λέγεται καθ’ οὗ 
ἀν τὸ B λέγηται κατὰ παντός, οὔδὲν κωλύει τῷ Γ 
ὑπάρχειν τὸ B, μὴ παντὶ δὲ τὸ A ἡ ὅλως μὴ 
ὑπάρχειν. ἐν δὴ τοῖς τρισὶν ὅροις δήλον ὅτι τὸ καθ’ 
οὗ τὸ B, παντὸς τὸ A λέγεσθαι τούτ’ ἔστι, καθ’

* Sc. indefinitely.
interchanging word and phrase, but always preferring the word to the phrase, for this makes it easier to set out the terms. E.g., if it is immaterial whether we say 'the conceivable is not a genus of the imaginable' or 'the imaginable is not identical with some part of the conceivable' (for the meaning is just the same), we must posit as terms the conceivable and the imaginable in preference to the expression which we have quoted.

XL. Since the propositions 'pleasure is a good' and 'pleasure is the good' are not identical, the terms must not be posited identically in both, but if the syllogism is to prove the latter we must posit 'the good,' and if the former, 'good.' So too in all other cases.

XLI. It is not the same, either in fact or to say, that A applies to all of that to which B applies, and that A applies to all of that to all of which B applies; for there is no reason why B should not apply to C, but not to all C. E.g., let B stand for 'beautiful' and C for 'white.' Then if 'beautiful' applies to some white thing, it is true to say that 'beautiful' applies to 'white,' but not, presumably, to all 'white.' Thus if A applies to B, but not to everything of which B is stated, then whether B applies to all C or merely applies to C, not only need A not apply to all C, but it need not apply to C at all. If on the other hand A applies to all that of which B is truly stated, it will follow that A is stated of everything of all of which B is stated. If, however, A is stated of that of all of which B is stated, there is no reason why A should apply to all C or indeed apply to C at all, although B applies to C. With regard to these three terms, then, it is clear that 'A is stated of all of which
εὐθείαν τήνδε καὶ τοὐκ αὐτοῦς· οὐκ ἐν δὲ μην κατὰ παντὸς, οὐκ ἀνάγκη τὸ Α κατὰ παντὸς.

Οὐ δὲ δ’ οἰςοθαὶ παρὰ τὸ ἐκτίθεσθαι τι συμβαίνειν ἀτοπον· οὐδὲν γὰρ προσχρώμεθα τῷ τόδε τι εἶναι, ἀλλ᾽ ὡσπερ ὁ γεωμέτρης τὴν ποδιαίαν καὶ εὐθεῖαν τήνδε καὶ ἀπλατή εἶναι οὐκ οὕτως· ἀλλ’ οὖχ οὖτως χρῆται ὡς ἐκ τούτων συλλογιζόμενοι. Ὑς γὰρ δ’ οὐκ ἐστὶν ὡς ὅλον πρὸς μέρος καὶ ἀλλ’ πρὸς τοῦτο ὡς μέρος πρὸς ὅλον, ἐξ οὐδενὸς τῶν τοιούτων δείκνυσιν ὁ δεικνύων, ὡστε

50 οὐδὲ γίγνεται συλλογισμός. τῷ δ’ ἐκτίθεσθαι οὔτω χρώμεθα ὡσπερ καὶ τῷ αἰσθάνεσθαι, τὸν ἱμανθάνοντα οὐ τὸν αἰσθάνεσθαι, τὸν αἰσθάνομεν. οὐ γὰρ οὔτως ὡς ἀνευ τούτων οὔχ ὅλον τ’ ἀποδειχθῆναι, ὡσπερ εξ ὧν ὁ συλλογισμός.

5 XLII. Μὴ λανθανέτως δ’ ἡμᾶς δὴ εἰν τῷ αὐτῷ συλλογισμῷ οὐχ ἀπαντα τὰ συμπεράσματα δὲ ἐνός σχῆματος εἰσιν, ἀλλὰ τὸ μὲν διὰ τούτου τὸ δὲ δι’ ἀλλου. δὴ λοιπόν οὖν ὅτι καὶ τὰς ἀναλύσεις ὧν ποιητέοι ἐπει δ’ οὐ πάν τὸ πρόβλημα ἐν ἀπαντῇ σχῆματι ἀλλ’ ἐν ἑκάστῳ τεταγμένα, φανερὸν ἐκ τοῦ συμπεράσματος εἰν τ’ σχῆματι ζητητέοι.

10 XLIII. Τοὺς τε πρὸς όρισμὸν τῶν λόγων, ὁσοὶ πρὸς ἐν τῇ προβληματισμῷ τοῖς ἐν τῷ ὀρῷ, πρὸς δ’ διεύλεκτα θετέον ὁρον, καὶ οὐ τῶν ἀπαντᾷ λόγῳ ήττον γὰρ συμβῆσεται οὐ κατά τὸ

1 ὥσπερ Β’dίφ.

*Cf. An. Post. 76 b 39, Met. 1078 a 20.*
B is stated ' means ' A is stated of all things of which B is stated.' And if B is stated of all, so too is A; but if B is not stated of all, A is not necessarily stated of all.

It must not be supposed that any absurdity results from the setting out of terms. We do not base our argument upon the reality of a particular example; we are doing the same as the geometrician who says that such-and-such a one-foot line or straight line or line without breadth exists when it does not, yet does not use his illustrations in the sense that he argues from them. For in general unless two things are related as whole to part and as part to whole, the man who is trying to prove something can prove nothing from them; and hence no syllogism results. On the contrary, we (I mean the student) use the setting out of terms as one uses sense-perception; we do not use them as though demonstration were impossible without these illustrations, as it would be without the premisses of a syllogism.

XLII. We must not overlook the fact that not all the conclusions in the same syllogism are effected by means of one figure, but some by one and some by another. Thus it is clear that we must conduct our analysis accordingly. And since not every proposition is proved in every figure, but certain fixed types are proved in each, it will be evident from the form of the conclusion in which figure the inquiry should be conducted.

XLIII. With regard to such arguments as refer to a definition, whenever they are directed to prove some one part of the definition, that part to which the argument is directed, and not the whole formula, should be posited as a term (for so there will be less
XLIV. "Ετι δὲ τοὺς ἐξ ὑποθέσεως συλλογισμοὺς οὐ πειρατέον ἀνάγειν· οὐ γὰρ ἔστιν ἐκ τῶν κειμένων ἁνάγειν. οὐ γὰρ διὰ συλλογισμοῦ δεδειγμένωι εἰσίν, ἀλλὰ διὰ συνθήκης ὁμολογημένωι πάντες. οἶνοι δὲ υποθέμενοι, οὐ δυνάμες τις μία μή ἢ τῶν ἐναντίων, μηδ᾽ ἐπιστήμην μῖαν εἶναι, εἰτα διαλεγθεῖ ὅτι οὐκ ἔστιν πᾶσα ὁμολογεῖν τῶν ἐναντίων, οἶνοι τοῦ ὑγιείου καὶ τοῦ νοσῶν ἀμα γὰρ ἔσται τὸ αὐτὸ ὑγιείον καὶ νοσῶν, ὅτι μὲν οὖν οὐκ ἔστι νὰ πάντων τῶν ἐναντίων δύναμις ἐπιδεικται, ὅτι δ᾽ ἐπιστήμην ὥστε ἔστιν οὕτω διδεικται. καίτοι ὁμολογεῖν ἀναγκαῖον· ὅσ' οὐκ ἐκ συλλογισμοῦ, ἀλλ᾽ ἐξ ὑποθέσεως· τούτον μὲν οὖν οὐκ ἔστιν ἀναγαγεῖν, ὅτι δ᾽ οὐ μὲν δύναμες ἔστιν· οὔτος γὰρ ἔστιν ὡς καὶ ἦν συλλογισμός, ἐκεῖνο δ᾽ ὑπόθεσις. Ὅμοιος δὲ καὶ ἐπὶ τῶν διὰ τοῦ ἀδυνάτου πε- ραίων ὁμολογεῖν· οὐδὲ γὰρ τούτους οὐκ ἔστιν ἀναλύειν, ἀλλὰ τήν μὲν εἰς τὸ ἀδυνάτου ἀπαγωγὴν ἔστι (συλλογισμῷ γὰρ δείκνυται), τάτορον δ᾽ οὐκ ἔστιν· εἰς ἐπιστήμην γὰρ περαινεῖται. διαφέρουσι δὲ τῶν προειρημένων ὅτι ἐν ἑκείνοις μὲν δὲ προδοσιο- λογήσασθαι εἰ μέλλει συμφήσειν, οὐοις ἄν δειχθῇ μία δύναμις τῶν ἐναντίων, καὶ ἐπιστήμην εἶναι τήν

2 ἐπιστήμηται A1Bc1: ἐπιστήμηται A1c3 dsm.
likelihood of confusion due to the length of the term): e.g., if it is shown that water is drinkable liquid, the terms posited should be ‘drinkable’ and ‘water.’

XLIV. Further, we should not attempt to reduce hypothetical syllogisms, because it is impossible to reduce them by proceeding from the premisses laid down, since they have not been proved by a syllogism, but have all been admitted by agreement. E.g., suppose that, after assuming that unless there is some one potentiality for contraries there cannot be one science of them, you should then argue that not every potentiality is for contraries, e.g., for the healthy and for the diseased, for if there is, the same thing will be at the same time healthy and diseased: then it has been shown that there is not one potentiality for all contraries, but it has not been shown that there is not one science. It is true that the latter must necessarily be admitted, but only ex hypothesi and not as the result of syllogistic proof. The latter argument, then, cannot be reduced, but the argument that there is not one potentiality can; for presumably this actually was a syllogism, whereas the former was a hypothesis.

Similarly too in the case of arguments which are established per impossibile. These too cannot be analysed. The reduction ad impossibile can be analysed, because it is proved by a syllogism; but the rest of the argument cannot, because the conclusion is drawn from a hypothesis. These types differ from those described above in that in the former if the conclusion is to be admitted some preliminary argument is necessary, e.g., that if it be shown that there is one potentiality for contraries, the science which studies them is also the same. But in these
αὐτῶν· ἐνταῦθα δὲ καὶ μὴ προδιομολογησάμενοι συγχωροῦσι διὰ τὸ φανερὸν εἶναι τὸ ψεύδος, οἷον τεθείσης τῆς διαμέτρου συμμέτρου τὸ τὰ περὶ τά ἱσα εἶναι τοῖς ἀρτίοις.

Πολλοὶ δὲ καὶ ἕτεροι περαιώνονται εἰς ὑποθέσεως, οὕς ἐπισκέψασθαι δεῖ καὶ διασημῆναι καθαρῶς. τίνες μὲν οὖν αἱ τούτων καὶ ποσαχῶς γίγνεται τὸ εἰς ὑποθέσεως ύστερον ἐρωμέν· νῦν δὲ τοσοῦτον ἡμῖν ἔστω φανερὸν, ὅτι οὐκ ἔστων ἀναλύειν εἰς τὰ σχήματα τοὺς τοιούτους συλλογισμούς· καὶ δὲ ἡ αὐτίαν, εἰρήκαμεν.

"Οσοί δ" εν πλείοις σχήμασι δείκνυται τῶν προβλημάτων, ἦν ἐν θατέρῳ συλλογισθῆ, ἐστιν ἀναγαγείν τὸν συλλογισμὸν εἰς θάτερον, οἷον τὸν ἐν τῷ πρώτῳ στερητικῷ εἰς τὸ δεύτερον καὶ τὸν ἐν τῷ μέσῳ εἰς τὸ πρῶτον, οὕς ἄπαντας δὲ ἀλλ' ἐνίοις. ἔσται δὲ φανερὸν εἰς τοῖς ἐπομενοῖς. εἰ γὰρ τὸ Α μηδενι τῷ Β τὸ δὲ Β παντὶ τῷ Γ, τὸ Α οὐδενι τῷ Γ. οὔτω μὲν οὖν τῷ πρῶτῳ σχήμα, ἐὰν δ᾽ ἀντιστραφῇ τὸ στερητικόν, τὸ μέσον ἔσται· τὸ γὰρ Β τῷ μὲν Α οὐδενὶ τῷ δὲ Γ παντὶ ὑπάρχει. ὁμοίως δὲ καὶ εἰ μὴ καθόλου ἀλλ' ἐν μέρει ὁ συλλογισμός, οἷον εἰ τὸ μὲν Α μηδενὶ τῷ Β τὸ δὲ Β τινὶ τῷ Γ· ἀντιστραφεῖν γὰρ τὸν στερητικόν τὸ μέσον ἔσται σχήμα.

Τῶν δ' ἐν τῷ δεύτερῳ συλλογισμῶν οἱ μὲν καθόλου ἀναχώρησονται εἰς τὸ πρῶτον, τῶν δ' ἐν μέρει ἀτεροσ μόνον. ἔστω γὰρ τὸ Α τῷ μὲν Β μηδενὶ τῷ δὲ Γ παντὶ ὑπάρχειν. ἀντιστραφέντος

* Cf. 41 a 26.
* There is no such description to which we can refer.
* Cesare.
examples the conclusions are admitted even without a preliminary agreement, because the fallacy is obvious; as for example that if the diagonal of a square is taken to be commensurable, odd numbers are equal to even ones.°

Many other conclusions also are reached by hypothesis, and these require further study and clear explanation. What their differences are, and in how many ways a hypothetical conclusion is effected, will be described later.° For the present let us regard this much as evident: that it is impossible to analyse such syllogisms as these into the figures. We have explained why this is so.

XLV. With regard to such propositions as are proved in more than one figure, if a conclusion is drawn in one figure, it is possible to reduce the syllogism to another figure; e.g., a negative syllogism in the first figure can be reduced to the second, and in the middle figure—not all, however, but only some of them—to the first. The principle will be clearly seen in the following examples. If A applies to no B, and B applies to all C, A applies to no C. In this form we have the first figure. But if the negative proposition is converted, we shall have the middle figure; for B applies to no A but to all C. Similarly too if the syllogism is not universal but particular, e.g., if A applies to no B and B applies to some C; on the conversion of the negative proposition we shall have the middle figure.

Of syllogisms in the second figure, those which are universal can be reduced to the first figure, but only one of the two particular syllogisms can be so reduced. Let A be taken as applying to no B but to all C.

° See next paragraph.
Servi τοῦ στερητικοῦ τὸ πρῶτον ἐσται σχῆμα: τὸ μὲν γὰρ Β οὔδενι τῷ Α, τὸ δὲ Α παντὶ τῷ Γ ύπάρξει. εὰν δὲ τὸ κατηγορικὸν ὣς πρὸς τῷ Β τὸ δὲ στερητικὸν πρὸς τῷ Γ, πρῶτον ορον θετέον τὸ Γ· τοῦτο γὰρ οὔδενι τῷ Α, τὸ δὲ Α παντὶ τῷ Β· ὡς' οὔδενι τῷ Β τὸ Γ. οὔδ' ἀρα τὸ Β τῷ Γ οὔδενι· ἀντιστρέφει γὰρ τὸ στερητικὸν. εὰν δ' ἐν μέρει ὡς συλλογισμός, ὅταν μὲν ὡς τὸ στερητικὸν πρὸς τῷ μείζονι ἀκρῷ, ἀναχθήσεται εἰς τὸ πρῶτον, οἷον εἰ τὸ Α μηδενὶ τῷ Β τῷ Γ τινὶ· ἀντιστραφέντος γὰρ τοῦ στερητικοῦ τὸ πρῶτον ἐσται σχῆμα: τὸ μὲν γὰρ Β οὔδενι τῷ Α, τὸ δὲ Α τινὶ τῷ Γ. ὅταν δὲ τὸ κατηγορικὸν, οὐκ ἀναλυθήσεται, οἷον εἰ τὸ Α τῷ μὲν Β παντὶ τῷ Γ οὐ παντὶ· οὔτε γὰρ δέχεται ἀντιστροφὴν τὸ ΑΒ, οὔτε γενομένης ἐσται συλλογισμός.

Πάλιν οἱ μὲν ἐν τῷ τρίτῳ σχήματι οὐκ ἀναλυθήσονται πάντες εἰς τὸ πρῶτον, οἳ δ' ἐν τῷ πρῶτῳ πάντες εἰς τὸ τρίτον. ὑπαρχέτω γὰρ τὸ Α παντὶ τῷ Β, τὸ δὲ Β τινὶ τῷ Γ. οὐκοῦν ἐπειδῆ ἀντιστρέφει τὸ ἐν μέρει κατηγορικὸν, ὑπάρξει τὸ Γ τινὶ τῷ Β· τὸ δὲ Α παντὶ ὑπήρχεν, ὥστε γίγνεται τὸ τρίτον σχῆμα. καὶ εἰ στερητικὸς ὁ συλλογισμὸς ὡςαύτως· ἀντιστρέφει γὰρ τὸ ἐν μέρει κατηγορικὸν, ὥστε τὸ μὲν Α οὔδενι τῷ Β, τὸ δὲ Γ τινὶ ὑπάρξει. 51 a Τῶν δ' ἐν τῷ τελευταίῳ σχήματι συλλογισμῶν εἰς μόνος οὐκ ἀναλυται εἰς τὸ πρῶτον, ὅταν μὴ καθόλου τεθῇ τὸ στερητικὸν, οἳ δ' ἀλλοι πάντες ἀναλύονται. κατηγορεῖσθω γὰρ παντὸς τοῦ Γ τοῦ Α καὶ τὸ Β· οὐκοῦν ἀντιστρέφει τὸ Γ πρὸς ἑκάτερον

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Then on the conversion of the negative proposition we shall have the first figure; for B will apply to no A, but A will apply to all C. But if the affirmative statement is attached to B and the negative to C, C must be posited as first term; for C applies to no A, and A to all B: hence C applies to no B. Therefore B also applies to no C, for the negative proposition is convertible. If, however, the syllogism is particular, when the negative statement is attached to the major extreme, the syllogism can be reduced to the first figure,—for example, if A applies to no B but to some C; for on the conversion of the negative proposition we shall have the first figure, since B applies to no A, and A applies to some C. But when the affirmative statement is attached to the major term, the syllogism cannot be analysed: e.g., if A applies to all B but not to all C. For the statement AB does not admit of conversion, nor, even if conversion took place, would there be a syllogism.

Again, syllogisms in the third figure cannot all be resolved into the first, although those in the first can all be resolved into the third. Let A apply to all B, and B apply to some C. Then when the particular affirmative statement is converted, C will apply to some B. But it was assumed that A applies to all B, and so we get the third figure. The same also holds good if the syllogism is negative; for the particular affirmative statement is convertible, and so A will apply to no B and C to some B.

Of the syllogisms in the last figure only one cannot be resolved into the first figure, viz. when the negative statement is not universal. All the rest can be so resolved. Let A and B be predicated of all C. Then C will convert into a particular relation with each of
ἐπὶ μέρους. ὑπάρχει ἀρα τῷ Β. ὡστ' ἔσται τὸ πρῶτον σχῆμα, εἰ τὸ μὲν Α παντὶ τῷ Γ τὸ δὲ Γ τινὶ τῶν Β. καὶ εἰ τὸ μὲν Α παντὶ τῷ Γ τὸ δὲ Β τινὶ, ὁ αὐτὸς λόγος. ἀντιστρέφει γὰρ πρὸς τὸ Γ τὸ Β. εάν δὲ τὸ μὲν Β παντὶ τῷ Γ τὸ δὲ Α τινὶ τῷ Γ, πρῶτος ὁρὸς θετείς τὸ Β· τὸ γὰρ Β παντὶ τῷ Γ τὸ δὲ Γ τινὶ τῷ Α, ὡστε τὸ Β τινὶ τῷ Α. επεὶ δ' ἀντιστρέφει τὸ ἐν μέρει, καὶ τὸ Α τινὶ τῷ Β ὑπάρξει.

Καὶ εἰ στερητικὸς ὁ συλλογισμός, καθόλου τῶν ὁρῶν ὄντων, ὀμοίως ληπτέον. ὑπαρχέτω γὰρ τὸ Β παντὶ τῷ Γ, τὸ δὲ Α μηδενί· οὐκοῦν τινὶ τῷ Β ὑπάρξει τὸ Γ, τὸ δὲ Α οὐδενὶ τῷ Γ, ὡστ' ἔσται μέσον τῷ Γ. ὀμοίως δὲ καὶ εἰ τὸ μὲν στερητικὸν καθόλου τὸ δὲ κατηγoricalὸν ἐν μέρει· τὸ μὲν γὰρ Α οὐδενὶ τῷ Γ, τὸ δὲ Γ τινὶ τῶν Β ὑπάρξει. εάν δ' ἐν μέρει ληθθῇ τὸ στερητικὸν, οὐκ ἔσται ἀνάλυσις, οἷον εἰ τὸ μὲν Β παντὶ τῷ Γ τὸ δὲ Α τινὶ μὴ ὑπάρξει· ἀντιστραφέntos γὰρ τοῦ ΒΓ ἀμφότεραι αἱ προτάσεις ἔσονται κατὰ μέρος.

Φανερὸν δὲ καὶ ὅτι πρὸς τὸ ἀναλύειν εἰς ἄλληλα τὰ σχήματα ἡ πρὸς τῷ εἶλαττον ἀκρω ἀποτάσις ἀντιστρεπτέα ἐν ἀμφότεροι τοῖς σχήμασι· ταύτης γὰρ μεταπεθεμένης ἡ μετὰβασις ἐγγέντο.

Τῶν δ' ἐν τῷ μέσῳ σχῆματι ἄτερος μὲν ἀνα- λύεται ἄτερος δ' οὐκ ἀναλύεται εἰς τὸ τρίτον. ὅταν μὲν γὰρ ἢ τὸ καθόλου στερητικόν, ἀναλύεται· εἰ γὰρ τὸ Α μηδενὶ τῷ Β τῷ δὲ Γ τινὶ, ἀμφότερα ὀμοίως ἀντιστρέφει πρὸς τὸ Α, ὡστε τὸ μὲν Β οὐδενὶ τῷ Α, τὸ δὲ Γ τινὶ· μέσον ἄρα τὸ Α. ὅταν

· Sc. first and third.
these terms. Therefore it applies to some B. Thus we shall have the first figure, if A applies to all C, and C to some B. The same principle holds also if A applies to all C and B to some C; for B is convertible with C. If on the other hand B applies to all C and A to some C, B must be taken as the first term; for B applies to all C, and C to some A, so that B applies to some A; and since the particular statement is convertible, A will also apply to some B.

Also, if the syllogism is negative, provided that the terms are related universally, it should be treated in the same way. Let B apply to all, but A to no C. Then C will apply to some B, and A to no C, so that C will be the middle term. Similarly too if the negative statement is universal and the affirmative particular; for A will apply to no C, and C will apply to some B. If, however, the negative statement is taken as particular, there can be no resolution: e.g., if B applies to all C, and A does not apply to some C; for on the conversion of the premiss BC both the premisses will be particular.

It is also evident that for the purpose of resolving the figures into one another the premiss which is attached to the minor extreme must be converted in both figures; for we have seen that the change from one to another takes place by the substitution of this premiss.

Of the syllogisms in the middle figure, one can be resolved into the third figure and the other cannot. (1) When the universal statement is negative, resolution is possible; for if A applies to no B, but to some C, both statements alike are convertible with respect to A, so that B applies to no A and C to some A. Therefore A is the middle term. (2) When A applies
δὲ τὸ Ἀ παντὶ τῷ Β τῷ δὲ Γ τωὶ μὴ ὑπάρχῃ, οὐκ ἔσται ἀνάλυσις· οὐδὲτέρα γὰρ τῶν προτάσεων ἐκ τῆς ἀντιστροφῆς καθόλου.

Καὶ οἱ ἐκ τοῦ τρίτου δὲ σχήματος ἀναλυθήσονται εἰς τὸ μέσον ὡταν ἢ καθόλου τὸ στερητικὸν, οἷον εἰ τὸ Α μηδενὶ τῷ Γ, τὸ δὲ Β τωὶ ἢ παντὶ· καὶ γὰρ τὸ Γ τῷ μὲν Α οὐδενὶ τῷ δὲ Β τωὶ ὑπάρξει. ἔαν δὲ ἐπὶ μέρους ἢ τὸ στερητικὸν οὐκ ἀναλυθήσεται· οὐ γὰρ δέχεται ἀντιστροφὴν τὸ ἐν μέρει ἀποφατικὸν.

Φανερὸν οὖν ὡτι οἱ αὐτοὶ συλλογισμοὶ οὐκ ἀναλύονται ἐν τούτοις τοῖς σχήμασιν οὔπερ οὐδὲ εἰς τὸ πρῶτον ἀνελύοντο, καὶ ὡτι εἰς τὸ πρῶτον σχῆμα τῶν συλλογισμῶν ἀναγομένων οὔτοι μόνοι διὰ τοῦ ἀδυνάτου περαινοῦνται.

Πῶς μὲν οὖν δεὶ τοὺς συλλογισμοὺς ἀνάγειν, καὶ ὡτι ἀναλύεται τὰ σχῆματα εἰς ἄλληλα, φανερὸν ἐκ τῶν εἰρημένων.

XLVI. Διαφέρει δὲ τι ἐν τῷ κατασκευάζειν ἢ ἀνασκευάζειν τὸ ὑπολαμβάνειν ἢ ταύτων ἢ ἔτερων σημαινεῖν τὸ μὴ εἶναι τοὐδὲ καὶ εἶναι μὴ τοῦτο, οἷον τὸ μὴ εἶναι λευκὸν τῷ εἶναι μὴ λευκὸν. οὐ γὰρ ταύτων σημαινεῖ, οὐδὲ ἔστιν ἀπόφασις τοῦ εἶναι λευκὸν τὸ εἶναι μὴ λευκὸν, ἀλλὰ τὸ μὴ εἶναι λευκὸν. λόγος δὲ τοῦτον ὑποδέχεται τὸ δύναται βαδίζειν πρὸς τὸ δύναται οὐ βαδίζειν τῷ ἐστὶ λευκὸν πρὸς τὸ ἐστὶν οὐ λευκὸν, καὶ ἐπισταται τάγαθον πρὸς τὸ ἐπίσταται τὸ οὐκ ἀγαθὸν. τὸ γὰρ ἐπισταται τάγαθον ἢ ἐστὶν ἐπιστάμενος τάγαθον οὐδὲν διαφέρει, οὐδὲ τὸ δύναται βαδίζειν ἢ ἐστὶ δυνάμενος βαδίζειν.
to all B, but does not apply to some C, there can be no resolution; for neither premiss is universal after conversion.

The syllogisms of the third figure can also be resolved into the middle figure when the negative statement is universal, e.g., if A applies to no C and B applies to some or all of C; for then C will apply to no A but to some B. If, however, the negative statement is particular, resolution will be impossible, for the particular negative does not admit of conversion.

Thus it is evident (1) that the types of syllogism which cannot be resolved in these figures are the same as those which we saw could not be resolved into the first figure; and (2) that when syllogisms are reduced to the first figure these alone are established per impossibile.

It is evident, then, from the foregoing account how syllogisms should be reduced; and also that the figures can be resolved into one another.

XLVI. It makes no little difference in establishing or refuting a proposition whether we suppose that ‘not to be so-and-so’ and ‘to be not-so-and-so’ mean the same or something different: e.g., whether ‘not to be white’ means the same as ‘to be not-white.’ For it does not mean the same; the negation of ‘to be white’ is not ‘to be not-white’ but ‘not to be white.’ The explanation of this is as follows:

‘He can walk’ is to ‘he can not-walk’ as ‘it is white’ is to ‘it is not-white,’ and as ‘he understands the good’ is to ‘he understands the not-good.’ For there is no difference between ‘he understands the good’ and ‘he is understanding of the good,’ nor is there between ‘he can walk’ and ‘he is able to walk.’
δὴ Girre καὶ τὰ ἀντικαίμα, οὐ Sévavan Pabliatticie 
ἔστι δυνάμενος βαδίζειν. εἰ οὖν τὸ οὐκ ἔστι δυνά-
μενος βαδίζειν ταὐτὸ σημαίνει καὶ ἔστι δυνάμενος
οὐ βαδίζειν ἢ μὴ βαδίζειν, ταὐτά γε ἀμα ύπάρχει
tαυτῷ (ὀ γὰρ αὐτὸς δύναται καὶ βαδίζειν καὶ μὴ
βαδίζειν, καὶ ἐπιστήμων τάγαθον καὶ τοῦ μὴ
ἀγαθοῦ ἔστι)· φάσις δὲ καὶ ἀπόφασις οὐχ ύπάρ-
χουσιν αἱ ἀντικαίμεναι ἀμα τῷ αὐτῷ. ωσπερ οὖν
οὐ ταὐτὸ ἔστι τὸ μὴ ἐπιστασθαι τάγαθον καὶ
ἐπιστασθαι τὸ μὴ ἀγαθὸν, οὐδ' εἶναι μὴ ἀγαθὸν καὶ
μὴ εἶναι ἀγαθὸν ταὐτῷ. τῶν γὰρ ἀνὰ λόγον ἐὰν
θάτερα ἢ ἑτερα, καὶ βάτερα. οὐδὲ τὸ εἶναι μὴ ἴσον
καὶ τὸ μὴ εἶναι ἴσον· τῷ μὲν γὰρ ύπόκειται τι, τῷ
ὄντι μὴ ἴσω, καὶ τοῦτ' ἔστι τὸ ἀνίσον· τῷ δ' ὁ
οὔδεν. διόσπερ ἴσον μὲν ἢ ἀνίσον οὖν πάν, ἴσον δ' ἢ
οὔκ ἴσον πάν.

"Ετι τὸ ἐστὶν οὐ λευκὸν ξύλον καὶ οὐκ ἔστι λευκὸν
ξύλον οὐχ ἀμα ύπάρχει. εἰ γὰρ ἔστι ξύλον οὐ
λευκὸν, ἔσται ξύλον· τὸ δὲ μὴ ὁν λευκὸν ξύλον οὐκ
ἀνάγκη ξύλον εἶναι. ωστε φανερὸν ὅτι οὐκ ἔστι τοῦ
ἔστιν ἀγαθὸν τὸ ἔστιν οὐκ ἀγαθὸν ἀπόφασις. εἰ οὖν
κατὰ παντὸς ἐνὸς ἢ φάσις ἢ ἀπόφασις ἀληθῆς, εἰ μὴ
ἔστιν ἀπόφασις, δῆλον ώς κατάφασις ἀν πως εἰπ.

καταφάσεως δὲ πάσης ἀπόφασις ἐστὶ: καὶ ταύτης
ἀρα τὸ οὐκ ἔστιν οὐκ ἀγαθὸν.

"Εχει δὲ τάξιν τὴν πρὸς ἀλληλα. ἐστω τὸ
εἶναι ἀγαθὸν ἐφ' οὗ Α, τὸ δὲ μὴ εἶναι ἀγαθὸν ἐφ' οὗ
Β, τὸ δὲ εἶναι μὴ ἀγαθὸν ἐφ' οὗ Γ, ὑπὸ τὸ Β, τὸ δὲ
μὴ εἶναι μὴ ἀγαθὸν ἐφ' οὗ Δ, ὑπὸ τὸ Α. παντὶ δὴ
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Hence the opposite statements, 'he cannot walk,' 'he is not able to walk,' are also identical. If, then, 'he is not able to walk' means the same as 'he is able not to walk,' these attributes will apply at the same time to the same subject (for the same person can both walk and not walk, or is understanding both of the good and of the not-good). But an assertion and its opposite negation do not apply at the same time to the same subject. Therefore just as 'not to understand the good' and 'to understand the not-good' are not the same, so too 'to be not-good' and 'not to be good' are not the same; for if one pair of corresponding terms in an analogical group is different, so is the other. Nor is 'to be not-equal' the same as 'not to be equal'; for the former, 'that which is not equal,' has a definite subject, viz. the unequal; but the latter has none. For this reason everything is either equal or unequal, but not everything is either equal or not equal.

Again, the statements 'the wood is not white' and 'it is not white wood' are not applicable to the same subject; for if wood is not white, it will be wood, but that which is not white wood is not necessarily wood at all. Hence it is evident that 'it is not-good' is not the negation of 'it is good.' If, then, either the assertion or the negation is true of every single thing, if the negation is not true, clearly the affirmation must in some sense be true. But every affirmation has a negation; and therefore the negation of the affirmation in question is 'it is not not-good.'

Now these terms are related to one another as follows. Let A stand for 'to be good,' B for 'not to be good,' C for 'to be not-good' (this falls under B) and D for 'not to be not-good' (this falls under A).
υπάρξει ὦ τὸ Α ἢ τὸ Β, καὶ οὐδενὶ τῷ αὐτῷ· καὶ ἢ τὸ Γ ἢ τὸ Δ, καὶ οὐδενὶ τῷ αὐτῷ. καὶ ὃ τὸ Γ.

ἀνάγκη τὸ Β παντὶ υπάρχειν. εἰ γὰρ ἄληθες εἰπεῖν οὔτι οὐ λευκὸν, καὶ οὔτι οὐκ ἐστὶ λευκὸν ἄληθες· ἀδύνατον γὰρ ἀμα εἶναι λευκὸν καὶ εἶναι μὴ λευκὸν, ἢ εἶναι ξύλον οὐ λευκὸν καὶ εἶναι ξύλον λευκὸν· ὥστε εἰ μὴ ἡ κατάφασις, ἡ ἀπόφασις υπάρξει. τῷ δὲ ὂ τὸ Γ οὐκ ἀεί· δ' γὰρ ὅλως μὴ ξύλον, οὐδὲ ξύλον ἐσται οὐ λευκὸν. ἀνάπαυλ τοῦν, ὃ τὸ Α, τὸ Δ παντὶ. ἢ γὰρ τὸ Γ ἢ τὸ Δ· ἐπεὶ δ' οὐχ οἶνον τε ἀμα εἶναι μὴ λευκὸν καὶ λευκὸν, τὸ Δ υπάρξει. κατὰ γὰρ τοῦ ὅντος λευκοῦ ἄληθες εἰπεῖν οὔτι οὐκ ἐστιν οὐ λευκὸν. κατὰ δὲ τοῦ Δ οὐ παντὸς τὸ Α· κατὰ γὰρ τοῦ ὅλως μὴ ὅντος ξύλου οὐκ ἄληθες τὸ Α εἰπεῖν, ὥστε ἐστι ξύλον' λευκὸν· ὥστε τὸ Δ ἄληθες, τὸ δ' Α οὐκ ἄληθες, ὅτι ξύλον λευκὸν. δὴλον δ' ὅτι καὶ τὸ ΑΓ οὐδενὶ τῷ αὐτῷ καὶ τὸ Β καὶ τὸ Δ ἐνδέχεται τοιῷ τῷ αὐτῷ υπάρξει.

'Ομοίως δ' ἔχουσι καὶ αἱ στερήσεις πρὸς τὰς κατηγορίας ταύτης τῇ θέσει. ἵσον ἐφ' οὖ τὸ Α, οὐκ ἱσον ἐφ' οὐ τὸ Β, ἀνίσον ἐφ' οὐ Γ, οὐκ ἁνίσον ἐφ' οὐ Δ.

Καὶ ἐπὶ πολλῶν δὲ, ὅν τοῖς μὲν υπάρχει τοῖς δ' οὐχ υπάρχει ταύτῳ, ἢ μὲν ἀπόφασις ὁμοίως ἄληθεν· οἷτ' ἄν, ὅτι οὐκ ἐστὶ λευκὰ πάντα ἢ ὅτι οὐκ ἐστὶ λευκὸν ἑκαστον· ὅτι δ' ἐστὶν οὐ λευκὸν ἑκαστον ἢ πάντα ἐστίν οὐ λευκὰ ψεύδος. ὁμοίως δὲ καὶ τοῦ ἐστὶ πάν χών λευκὸν οὐ τὸ ἐστίν οὐ λευκὸν ἀπαν χών ἀπόφασις (ἀμφω γὰρ ψευδεῖς), ἀλλὰ τὸ οὐκ

1 οὐ post ξύλον add. A: δ' supra lineam B*: del. C.
Then either A or B will apply to everything, but they can never both apply to the same subject; and either C or D will apply to everything, but they can never both apply to the same subject. Also B must apply to everything to which C applies. For if it is true to say 'it is not-white,' it is also true to say 'it is not white'; since it is impossible that a thing should at the same time be white and not-white, or that wood should be not-white and white; so that if the affirmation does not apply, the negation will. But C does not always apply to B; for that which is not wood at all cannot be white wood either. Conversely then D will apply to everything to which A applies; for either C or D must apply; and since it is not possible to be at the same time not-white and white, D will apply; for it is true to state of that which is white that it is not not-white. But A cannot be stated of all D; for it is not true to state of that which is not wood at all that it is A, i.e., that it is white wood. Hence D is true, but A, that it is white wood, is not true. It is clear that the combination AC too can never apply to the same subject, whereas both B and D may sometimes apply to the same subject.

The relation of privative to positive terms in this system is similar. A stands for equal, B for not equal, C for unequal, D for not unequal.

Also in the case of plural subjects to some members of which the same attribute applies while to others it does not apply, the negation can be predicated with equal truth: that not all things are white, or that not everything is white; but that everything is not-white or that all things are not-white is false. Similarly the negation of 'every animal is white' is not 'every animal is not-white' (for both statements are
ἐστι παν ζῷων λευκῶν. ἐπεὶ δὲ δήλον ὅτι ἔτερον
οὐκαί ἔστιν οὐ λευκῶν καὶ οὐκ ἔστι Λευκῶν,
καὶ τὸ μὲν κατάφασις τὸ δ' ἀπόφασις, φανερῶν ὡς
οὐχ ὁ αὐτὸς τρόπος τοῦ δεικνύων ἐκάτερον, οἶνον ὅτι
ὅ ἄν ή ζῷον οὐκ ἔστι λευκὸν ἢ ἐνδέχεται μὴ εἶναι
λευκῶν, καὶ ὅτι ἀληθὲς εἰπεῖν μὴ λευκῶν· τοῦτο γάρ
ἐστιν εἶναι μὴ λευκῶν. ἀλλὰ τὸ μὲν ἀληθὲς εἰπεῖν
ἔστι λευκῶν εἰτε μὴ λευκῶν ὁ αὐτὸς τρόπος· κατα-
σκευαστικῶς γάρ ἁμφοῦ διὰ τοῦ πρώτου δεικνυται
σχήματος· τὸ γὰρ ἀληθὲς τῷ ἐστιν ὁμοίως τάτ-
τεται· τοῦ γὰρ ἀληθὲς εἰπεῖν λευκῶν οὐ τὸ ἁληθὲς
εἰπεῖν μὴ λευκῶν ἀπόφασις, ἀλλὰ τὸ μὴ ἁληθὲς
εἰπεῖν λευκῶν. εἰ δὴ ἔσται ἀληθὲς εἰπεῖν ὃ ἂν
ἡ ἀνθρωπος μονοικοὺς εἰναι ἡ μὴ μονοικοὺς εἰναι, ὃ
ἂν ἡ ζῷον ληπτεῖν ἢ εἰναι μονοικοὺς ἢ εἰναι μὴ
μονοικοῖς, καὶ δεδεικται. τὸ δὲ μὴ εἰναι μονοικοῦ
ἄν ἡ ἀνθρωπος ἀνασκευαστικῶς δεικνυται κατὰ
τοὺς εἰρημένους τρόπους τρεῖς.

'Απλῶς δ' ὅταν οὕτως ἔχῃ τὸ Α καὶ τὸ Β ὡσθ' ἤρι
ἀμα μὲν τῷ αὐτῷ μὴ ἐνδέχεσθαι παντὶ δὲ εἰ ἀνάγ-
κησ θάτερον, καὶ πάλιν τὸ Γ καὶ τὸ Δ ὡσαύτως,
ἐπηται δὲ τῷ Γ τοῦ Α καὶ μὴ ἀντιστρέφη, καὶ τῷ
Β τοῦ Δ ἀκολουθήσει καὶ οὐκ ἀντιστρέψει· καὶ τῷ
μὲν Α καὶ τὸ Δ ἐνδέχεται τῷ αὐτῷ, τὸ δὲ Β καὶ
Γ οὐκ ἐνδέχεται.

5 Πρῶτον μὲν οὖν ὅτι τῷ Β τοῦ Δ ἐπεται ἐνδέχει
φανερῶν· ἐπεὶ γὰρ παντὶ τῶν ΓΔ θάτερον ἢ
ἀνάγκης, ὃ δὲ τῷ Β οὐκ ἐνδέχεσθαι τῷ Γ διὰ τὸ

1 ἔσται Jenkinson: ἔστω codd.
2 τὸ Δ ἐπεται ABC: ἐπεται τὸ Δ c, Bekker.

*i.e. the uses of the two expressions are parallel.*
false) but 'not every animal is white.' And since it is clear that 'it is not-white' and 'it is not white' differ in meaning, and that one is an affirmation and the other a negation, it is evident that the method of proof is not the same in both cases: viz. to prove the statement that whatever is an animal is not white, or may not be white, and the statement that it is true to say that it is not-white; for this is what 'to be not-white' means. But the same method of proof applies to the statements that it is true to say that it is white, and that it is true to say that it is not-white; for both are proved constructively by means of the first figure, since 'it is true' ranks with 'it is'; for the negation of 'it is true to call it white' is not 'it is true to call it not-white' but 'it is not true to call it white.' If, then, it is to be true to say that whatever is a man is either cultured or not cultured, assume that whatever is an animal is either cultured or not cultured, and the proof is accomplished. That whatever is a man is not cultured' is proved destructively by the three moods already described.

In general when A and B are so related that they cannot apply at the same time to the same subject, yet one or other of them necessarily applies to everything; and when C and D are similarly related, and A is a consequent of C, and the relation is not reversible: then D will be a consequent of B, and this relation will not be reversible. Also A and D may apply to the same subject, but B and C cannot.

(1) That B is a consequent of D is evident from the following proof. Since one or other of the terms C and D necessarily applies to everything, and C cannot apply to that to which B applies, because C implies

Celarent, Cesare and Camestres.
συνεπιφέρειν τὸ Α, τὸ δὲ Α καὶ Β μὴ ἐνδέχεσθαι τῷ αὐτῷ, φανερὸν ὅτι τὸ Δ ἀκολουθήσει. πάλιν ἐπεὶ τῷ Α τὸ Γ οὐκ ἀντιστρέφει, παντὶ δὲ τὸ Γ ἐκ τοῦ Α καὶ τὸ Δ τῷ αὐτῷ ὑπάρχειν. τῷ δὲ γε Β καὶ τὸ Γ οὐκ ἐνδέχεσται διὰ τὸ συνακολουθεῖν τῷ Γ τῷ Α. συμβαίνει γὰρ τι αὐ̄δυνατον. φανερὸν οὖν ὅτι οὐδὲ τῷ Δ τὸ Β ἀντιστρέφει, ἔπειτε ἐγχωρεῖ ἀμα τὸ Δ καὶ τὸ Α ὑπάρχειν. 

Συμβαίνει δὲ ἐν τῇ τοιαύτῃ τάξει τῶν ὀρων ἀπατᾶσθαι διὰ τὸ μὴ τὰ ἀντικεῖμενα λαμβάνειν ὀρθῶς ἄν ἀνάγκη παντὶ θάτερον ὑπάρχειν, οἷον εἰ τὸ Α καὶ τὸ Β μὴ ἐνδέχεται ἀμα τῷ αὐ̄τῷ, ἀνάγκη δὲ ὑπάρχειν, φι μὴ θάτερον, θάτερον καὶ πάλιν τὸ Γ καὶ τὸ Δ ὑσαύτως, φι δὲ τὸ Γ, παντὶ ἐπεται τὸ Α. συμβήσεται γὰρ φι τὸ Δ τὸ Β ὑπάρχειν εἰ ἀνάγκης, ὅπερ ἐστὶ ψεύδος. εἰλήφθω γὰρ ἀπόφασις τῶν ΑΒ ή ἑφ ζ, καὶ πάλιν τῶν ΓΔ ο ἑφ θ. ἀνάγκη δὲ παντὶ ή τὸ Α ή τὸ Ζ, ἡ γὰρ τὴν φάσιν ή τὴν ἀπόφασιν καὶ πάλιν ή τὸ Γ ή τὸ Θ, φάσις γὰρ καὶ ἀπόφασις. καὶ φι τὸ Γ ἐπι τὸ Α υπόκειται. ὅστε ψι τὸ Ζ παντὶ τὸ Θ. πάλιν ἐπεὶ τῶν ΖΒ παντὶ θάτερον καὶ τῶν ΘΔ ἡσαύτως, ἀκολουθεῖ δὲ τῷ Ζ τὸ Θ, καὶ τῷ Δ ἀκολουθήσει τὸ Β. τούτω γὰρ ἵσων. εἰ ἀρα τῷ Γ τὸ Α, καὶ τῷ Δ τὸ Β. τούτω δὲ ψεύδος. ἀνάπαλιν γὰρ ἦν ἐν τοῖς οὐτως ἔχουσιν ἡ ἀκολούθησις. οὐ γὰρ ἵσως ἀνάγκη παντὶ τὸ Α ή τὸ Ζ, οὐδὲ τὸ
A, and A and B cannot both apply to the same subject, it is evident that D will be a consequent of B.

(2) Since the relation of C to A is not reversible, and either C or D applies to everything, A and D may apply to the same subject. B and C, however, cannot, because since A is implied by C, this gives us an impossible result. Thus it is evident that the relation of B to D is also irreversible, since it is possible for D and A to apply at the same time.

It happens sometimes in this arrangement of terms also that we are misled because we do not rightly select the opposites one or the other of which must apply to everything, e.g., as follows. ‘A and B cannot apply at the same time to the same subject; but where one does not apply, the other must. Again, C and D are similarly related; and wherever C applies, A is implied; then it will follow that where D applies B necessarily applies’ (which is false).

‘Let F be taken as the negation of A and B, and G as that of C and D. Then either A or F must apply to everything, since either the asserti on or the negation must so apply. Again, so must either C or G, since they are assertion and negation. Also A applies ex hypothesi where C applies. Hence G applies to everything to which F applies. Again, since one or other of the terms F and B applies to everything, and similarly with G and D, and since G is a consequent of F, B will also be a consequent of D; for we know this. Then if A is a consequent of C, so also is B of D.’ But this is false; for we saw that in terms so constituted the reverse consequential relation obtains. The explanation is that it is presumably not necessary that either A or F should apply to everything, nor

*Cf. 52b 4-13.*
Ζ ἂ τὸ Β· οὐ γὰρ ἐστὶν ἀπόφασις τοῦ Α τὸ Ζ. τοῦ γὰρ ἀγαθοῦ τὸ οὐκ ἀγαθὸν ἀπόφασις· οὐ ταυτὸ δ’ ἐστὶ τὸ οὐκ ἀγαθὸν τῷ οὔτ’ ἀγαθὸν οὔτ’ οὐκ ἀγαθὸν. ὁμοίως δὲ καὶ ἐπὶ τῶν ΓΔ· αἱ γὰρ ἀποφάσεις αἱ εἰλημμέναι δύο εἰσίν.
that either F or B should do so; for F is not the negation of A. The negation of the good is the not-good; and the not-good is not identical with the neither good nor not-good. The same is true of C and D. In both cases two negations have been assumed for one term.
μὲν γὰρ ἄλλαι προτάσεων καὶ διὰ ποιῶν καὶ πόσων προτάσεων καὶ πότε καὶ πῶς γίγνεται συλλογισμός, ἢτι δ' εἰς ποια βλεπτέον ἀνασκευάζοντι καὶ κατασκευάζοντι, καὶ πῶς δεῖ ζητεῖν περὶ τοῦ προκειμένου καθ' ὁποιανοῦν μέθοδον, ἢτι δὲ διὰ ποιῶν ὁδοῦ ληψόμεθα τὰς περὶ ἕκαστον ἀρχὰς, ἣν διεληλύθαμεν.

'Επει δ' οἱ μὲν καθόλου τῶν συλλογισμῶν εἰσὶν οἱ δὲ κατὰ μέρος, οἱ μὲν καθόλου πάντες ἄει πλεῖω συλλογίζονται, τῶν δὲ εἰν μέρει οἱ μὲν κατηγορικοὶ πλεῖω, οἱ δ' ἀποφατικοὶ τὸ συμπέρασμα μόνον. αἱ μὲν γὰρ ἄλλαι προτάσεις ἀντιστρέφουσιν, ἡ δὲ στερητική οὐκ ἀντιστρέφει τὸ δὲ συμπέρασμα τί κατὰ τινὸς ἕστω· ὡσθ' οἱ μὲν ἄλλοι συλλογισμοὶ πλεῖω συλλογίζονται, οἶον εἰ τὸ Α δεδεικταί παντὶ τῷ Β ἢ τινὶ, καὶ τὸ Β τινὶ τῷ Α ἀναγκαῖον ὑπάρχειν· καὶ εἰ μηδενὶ τῷ Β τῷ Α, οὐδὲ τὸ Β οὐδενὶ τῷ Α (τούτῳ δ' ἐτερον τοῦ ἐμπροσθεν)· εἰ δὲ τινὶ μὴ ὑπάρχει, οὐκ ἀνάγκη καὶ τὸ Β τινὶ τῷ Α μὴ ὑπάρχειν· ἐνδέχεται γὰρ πάντι ὑπάρχειν.

* i.e. premisses. Cf. 43 b 36.
* Because the relation of subject and predicate is reversed. * Cf. 25 a 24.

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I. We have now explained in how many figures a syllogism is effected; also the nature and number of the premisses by which it is effected, and the circumstances and conditions by which it is governed. Further, we have explained what kind of attributes should be considered when one is refuting and when one is establishing a proposition, and how to set about the appointed task in every given method of approach; and further by what means we are to arrive at the starting-points proper to each case.

Now some syllogisms being universal and some particular, those which are universal always give more than one inference; but whereas those particular syllogisms which are affirmative give more than one inference, those which are negative give only the conclusion. For all other premisses are convertible, but the particular negative premiss is not; and the conclusion consists of an attribute predicated of a subject. Thus all other syllogisms give more than one result: e.g., if A has been proved to apply to all or some of B, B must also apply to some A; and if it has been proved that A applies to no B, then B applies to no A. This is a different conclusion from the former. But if A does not apply to some B, it does not follow that B also does not apply to some A; for it may apply to all.
Αὐτή μὲν οὖν κοινὴ πάντων αὐτία, τῶν τε καθόλου καὶ τῶν κατὰ μέρος· ἐστὶ δὲ περὶ τῶν καθόλου καὶ ἄλλως εἰπεῖν. ὅσα γὰρ ἦ ὑπὸ τὸ μέσον ἦ ὑπὸ τὸ συμπέρασμα ἐστὶν, ἀπάντων ἐσται ὁ αὐτὸς συλλογισμός, εὰν τὰ μὲν ἐν τῷ μέσῳ τὰ δ’ ἐν τῷ συμπεράσματι τεθῇ· οἷον εἰ τὸ AB συμπέρασμα διὰ τοῦ Γ, ὅσα ὑπὸ τὸ B ἢ τὸ Γ ἐστίν, ἀνάγκη κατὰ πάντων λέγεσθαι τὸ A· εἰ γὰρ τὸ Δ ἐν ὅλῳ τῷ B τὸ δὲ B ἐν τῷ A, καὶ τὸ Δ ἐσται ἐν τῷ A. πάλιν εἰ τὸ E ἐν ὅλῳ τῷ Γ τὸ δὲ Γ ἐν τῷ A, καὶ τὸ E ἐν τῷ A ἐσται. ὁμοίως δὲ καὶ εἰ στερητικὸς οἱ συλλογισμοὶ. ἐπὶ δὲ τοῦ δευτέρου σχήματος τὸ ὑπὸ τὸ συμπέρασμα μόνον ἐσται συλλογίσασθαι· οἷον εἰ τὸ A τῷ B μηδενὶ τῷ δὲ Γ παντὶ, συμπέρασμα οὕτως τῷ τῷ Γ τῷ B. εἰ δὴ τὸ Δ ὑπὸ τὸ Γ ἐστὶν, φανερὸν ὅτι οὐχ ὑπάρχει αὐτῷ τῷ B. τοῖς δ’ ὑπὸ τὸ Α ὑπὰρχει οὐ δῆλον διὰ τοῦ συλλογισμοῦ. καίτοι οὐχ ὑπάρχει τῷ E, εἰ ἐστὶν ὑπὸ τὸ A· ἀλλὰ τὸ μὲν τῷ Γ μηδενὶ ὑπάρχειν τῷ B διὰ τοῦ συλλογισμοῦ δεδεικται, τὸ δὲ τῷ A μη ὑπάρχειν ἀναπόδεικτον εἰληφται, ὥστε οὐ διὰ τοῦ συλλογισμοῦ συμβαίνει τῷ B τῷ Ε μή ὑπάρχειν.

Ἐπὶ δὲ τῶν ἐν μέρει τῶν μὲν ὑπὸ τὸ συμπέρασμα οὐκ ἐσται τὸ ἀναγκαῖον (οὐ γὰρ γίγνεται συλλογισμὸς ὅταν αὐτῇ ληφθῇ ἐν μέρει), τῶν δὲ ὑπὸ τὸ μέσον ἐσται πάντων, πλὴν οὐ διὰ τὸν συλλογισμόν, οἷον εἰ τὸ A παντὶ τῷ B τὸ δὲ B τω τῷ Γ· τοῦ

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* Sc. as middle term.
* Waitz points out ad loc. that in Camestres nothing can be inferred about subordinates to the middle term.
This reason, then, is common to all syllogisms, both universal and particular; but with respect to universal syllogisms it is also possible to give a different explanation. The same syllogism will hold good of all terms which are subordinate to the middle term or the conclusion, if these terms are placed respectively in the middle and in the conclusion. E.g., if $AB$ is a conclusion reached by means of $C$, $A$ must be stated of all terms which are subordinate to $B$ or $C$. For if $D$ is wholly contained in $B$, and $B$ in $A$, $D$ will also be contained in $A$. Again, if $E$ is wholly contained in $C$, and $C$ in $A$, $E$ will also be contained in $A$. Similarly too if the syllogism is negative. In the second figure, however, the inference will only hold good of that which is subordinate to the conclusion. E.g., if $A$ applies to no $B$ but to all $C$, the conclusion is that $B$ applies to no $C$. Then if $D$ is subordinate to $C$, it is evident that $B$ does not apply to $D$. That it does not apply to terms subordinate to $A$ is not shown by the syllogism, although $B$ does not apply to $E$ if $E$ is subordinate to $A$. But whereas it has been proved by the syllogism that $B$ applies to no $C$, that $B$ does not apply to $A$ has been assumed without proof; so that it does not follow by the syllogism that $B$ does not apply to $E$.

As for particular syllogisms, there will be no necessary inference concerning the terms subordinate to the conclusion (since no syllogism results when this premiss is taken as particular), but there will be one which holds good of all terms subordinate to the middle, only it will not be reached by the syllogism: e.g., if we assume that $A$ applies to all $B$, and $B$ to $C$, the conclusion of the original syllogism, which now becomes the major.
μὲν γὰρ ὑπὸ τὸ Γ τεθέντος οὐκ ἔσται συλλογισμὸς,
τοῦ δ' ὑπὸ τὸ B ἔσται, ἀλλ' οὗ διὰ τὸν προγεγενή-
μένον, ὁμοίως δὲ κατὶ τῶν ἄλλων σχημάτων τοῦ
μὲν γὰρ ὑπὸ τὸ συμπέρασμα οὐκ ἔσται, δατέρου δ' ἔσται, πλὴν οὗ διὰ τὸν συλλογισμὸν, ἦ καὶ ἐν τοῖς
καθόλου ἐξ ἀναποδείκτου τῆς προτάσεως τὰ ὑπὸ τὸ
μέσον ἐδείκνυτο: ὡστ' ἢ οὔδ' ἐκεῖ ἔσται ἦ καὶ
ἐπὶ τούτων.

Πρώτον μὲν οὖν οὗτως ἔχειν ἤστ' ἀληθεῖς εἶναι
τὰς προτάσεις δι' ἦν τὸ συλλογισμὸς, ἐστὶ δ' ὃς τε
ψευδεῖς, ἐστὶ δ' ὃς τῆν μὲν ἀληθῆ τὴν δὲ ψευδῆ:
tὸ δὲ συμπέρασμα ἡ ἀληθὲς ἢ ψεύδως ἢ ἀνάγκης,
ἐκ ψευδῶν μὲν οὖν οὐκ ἔστι ψεύδως συλλογίσασθαι,
ἐκ ψευδῶν δ' ἔστιν ἀληθὲς, πλὴν οὗ διότι ἀλλ' ὃτι:
tοῦ γὰρ διότι οὖν ἔστιν ἐκ ψευδῶν συλλογισμὸς: δι'
ἡν δ' αἰτιάν ἐν τοῖς ἑπομένοις λεγήσεται.

Πρώτον μὲν οὖν οἵ οὐχ οἷόν τε ψευδὸς
συλλογίσασθαι ἐντεῦθεν δὴλον. εἰ γὰρ τοῦ A ὄντος
ἀνάγκη τὸ B εἶναι, τοῦ B μὴ ὄντος ἀνάγκη τὸ A μὴ
eῖναι. εἰ οὖν ἀληθὲς ἐστὶ τὸ A, ἀνάγκη τὸ B
ἀληθές εἶναι. ἡ συμβήσεται τὸ αὐτὸ ἁμα εἶναι τε
καὶ οὐκ εἶναι τοῦτο δ' ἀδύνατον. μὴ οὗ δὲ κεῖται
τὸ A εἰς ὁρὸς ὑποληψθήτω ἐνδέχεσθαι ἐνὸς τινος
ὑπὸ τοῦ εἰς ἀνάγκης τι συμβαίνειν οὗ γὰρ οἷόν τε· τὸ
μὲν γὰρ συμβαίνον εἰς ἀνάγκης τὸ συμπέρασμα

* Except Baroco, Bocardo and Disamis (Waitz on 53 a 34).
* 57 a 40–b 17.
some C; for there will be no inference concerning that which is subordinate to C, but there will be one with regard to that which is subordinate to B; not, however, by the syllogism already effected. Similarly too with the other figures. There will be no inference concerning that which is subordinate to the conclusion, but there will be one concerning the other subordinate, only not by the syllogism; just as in the universal syllogisms the terms subordinate to the middle are proved, as we have seen, from a premiss which is undemonstrated. Thus either the principle will not apply in the former case, or it will apply here too.

II. It is possible for the premisses by which the syllogism is effected to be both true, or both false, or one true and the other false. The conclusion, however, is true or false of necessity. Now it is impossible to draw a false conclusion from true premisses, but it is possible to draw a true conclusion from false premisses; only the conclusion will be true not as regards the reason but as regards the fact. It is not possible to infer the reason from false premisses; why this is so will be explained later.

Firstly, then, that it is not possible to draw a false conclusion from true premisses will be clear from the following argument. If, when A is, B must be, then if B is not, A cannot be. Therefore if A is true, B must be true: otherwise it will follow that the same thing at once is and is not, which is impossible. (It must not be supposed that, because A has been posited as a single term, it is possible for any necessary inference to be drawn from any one assumption, for this is impossible. The necessary inference is the conclusion, and the fewest means by which this can
ὁροὶ δυο δὲ διαστήματα καὶ προτάσεις. εἰ οὖν ἀληθὲς ὁ τὸ Β υπάρχει τὸ Α παντὶ ὁ τὸ Γ τὸ Β, ὁ τὸ Γ ἀνάγκη τὸ Α υπάρχειν, καὶ οὐχ οἷον τε τούτο ψεύδος εἶναι· ἀμα γὰρ υπάρξει ταὐτό καὶ οὐχ υπάρξει. τὸ οὖν Α ὡσπερ ἐν κεῖται, δύο προτάσεις συλληφθείσαι. ὁμοίως δὲ καὶ ἐπὶ τῶν στερητικῶν ἐχει· οὐ γὰρ ἐστιν οἷς ἀληθῶν δείξει ψεύδος.

Ἐκ ψευδῶν δ’ ἀληθὲς ἐστί, συλλογισάσθαι καὶ ἀμφοτέρων τῶν προτάσεων ψευδῶν οὐσῶν καὶ τῆς μιᾶς, ταύτης δ’ οὐχ ὁποτέρας ἐστυχὲν ἀλλὰ τῆς δευτέρας, εἀνπερ ὅλην λαμβάνῃ ψευδή· μὴ δὲ λαμβανομένης ἐστιν ὁποτέρας.

Ἐστιν γὰρ τὸ Α ὅλων τῷ Γ υπάρχον τῶν ὅ τὸ Β μηδεν᾽, μηδέ τὸ Β τῷ Γ· ἐνδεχεται δὲ τοῦτο, οἷον λίθων οὐδενὶ ζων, οὐδὲ λίθος οὐδενὶ ἀνθρώπως· εάν οὖν ληφθῇ τὸ Α παντὶ τῷ Β καὶ τὸ Β παντὶ τῷ Γ, τὸ Α παντὶ τῷ Γ υπάρξει, ὧστ’ εἰς ἀμφοῖς τυγχαίνον

ἀληθὲς τὸ συμπέρασμα (πᾶς γὰρ ἀνθρωπὸς ζων). ὥσαυτώς δὲ καὶ τὸ στερητικὸν· ἐστι γὰρ τῷ Γ μήτε τὸ Α υπάρχειν μηδενὶ μήτε τὸ Β, τὸ μέντοι Α τῷ Β παντὶ, οἷον εὰν τῶν αὐτῶν ὅρων ληφθέντων μέσον τεθῇ ὁ ἀνθρωπος· λίθω γὰρ οὔτε ζων οὔτε ἀνθρωπος οὐδενὶ υπάρχει, ἀνθρώπως δὲ παντὶ ζων. 

ὡστε εὰν ω μὲν υπάρχει λάβη μηδενὶ υπάρχειν, θαῦμα τὸ δὲ θαυμάσθης καὶ εάν ἔπι τι ψευδής ἐκατέρα ληφθῆ.
be effected are three terms and two connecting relations or premisses.) If, then, it is true that A applies to everything to which B does, and that B applies where C does, A must apply where C does, and this cannot be false; otherwise the same attribute will at once apply and not apply. Thus although A is posited as a single term, it represents the conjunction of two premisses. Similarly too with negative syllogisms: it is impossible to prove a false conclusion from true premisses.

It is possible to draw a true conclusion from false premisses not only when both premisses are false but also when only one is false,—not either one indifferently, but the second, that is if it is wholly false in the form in which it is assumed; otherwise the falsity may belong to either premiss.

Let A apply to the whole of C, but to no B; and let B apply to no C. This is possible: e.g., 'animal' applies to no 'stone' and 'stone' applies to no 'man.' If, then, it is assumed that A applies to all B and B to all C, A will apply to all C. Thus the conclusion from premisses which are both false is true; for every man is an animal. Similarly too with the negative syllogism. For it is possible for both A and B to apply to no C, and yet for A to apply to all B; e.g., if the same terms as before are taken, with 'man' as the middle term; for neither 'animal' nor 'man' applies to any stone, but 'animal' applies to every man. Thus if it is assumed that that which applies to all applies to none, and that which does not apply applies to all, although both premisses are false, the conclusion drawn from them will be true. A similar proof will also obtain if both premisses assumed are partly false.
Ἅν τὸ δ᾽ ἡ ἑτέρα μὴν πρῶτης ὅλης ψευδοῦς οὐσίας, οἶον τῆς ΑΒ, οὐκ ἔσται τὸ συμπέρασμα ἀληθὲς, τῆς δὲ ΒΓ ἔσται. λέγω δ᾽ ὅλην ψευδῆ τὴν ἑναντίαν, οἶον εἰ μηδενὶ ὑπάρχουν παντὶ εἰληπται ἢ εἰ παντὶ μηδενὶ ὑπάρχειν. ἔστω γὰρ τὸ Α τῷ Β μηδενὶ ὑπάρχον, τὸ δὲ Β τῷ Γ παντὶ. ἂν δὴ τὴν μὲν ΒΓ πρότασιν λάβω ἀληθῆ τὴν δὲ τὸ ΑΒ ψευδῆ ὅλην, καὶ παντὶ ὑπάρχειν τῷ Β τῷ Α, ἀδύνατον τὸ συμπέρασμα ἀληθὲς εἶναι.

10 οὐδενὶ γὰρ ὑπήρχε τῶν Γ, εἰπὲρ ὅ τὸ Β, μηδενὶ τὸ Α, τὸ δὲ Β παντὶ τῷ Γ. ὀμοίως δ᾽ οὐδεὶς εἰ τὸ Α τῷ Β παντὶ ὑπάρχει καὶ τὸ Β τῷ Γ παντὶ, ἐλήφθη δ᾽ ὅ μὲν τὸ ΒΓ ἀληθῆς πρότασις ἢ δὲ τὸ ΑΒ ψευδῆς ὅλη, καὶ μηδενὶ ὅ τὸ Β τῷ Α, τὸ συμπέρασμα ψεύδος ἔσται· παντὶ γὰρ ὑπάρχει τῷ Γ τῷ Α, εἰπέρ ὅ τὸ Β, παντὶ τῷ Α, τὸ δὲ Β παντὶ τῷ Γ. φανερὸν οὖν ὅτι τῆς πρῶτης ὅλης λαμβανομένης ψευδοῦς, εάν τε καταφατικῆς εάν τε στερητικῆς, τῆς δ᾽ ἑτέρας ἀληθοῦς, οὐ γίγνεται ἀληθὲς τὸ συμπέρασμα. μὴ ὅλης δὲ λαμβανομένης ψευδοὺς ἔσται. εἰ γὰρ τὸ Α τῷ μὲν Γ παντὶ ὑπάρχει τῷ δὲ Β τινὶ, τὸ δὲ Β παντὶ τῷ Γ, οἶον ζῷον κύκνως μὲν παντὶ λευκῷ δὲ τινὶ, τὸ δὲ λευκὸν παντὶ κύκνω, εάν ληφθῇ τὸ Α παντὶ τῷ Β καί τὸ Β παντὶ τῷ Γ, τὸ Α παντὶ τῷ Γ ὑπάρξει ἀληθῶς· πᾶς γὰρ κύκνος ζῶν. ὀμοίως δὲ καί εἰ στερητικῶν εἶν τὸ ΑΒ· 20 εὐχαρεῖ γὰρ τὸ Α τῷ μὲν Β τινὶ ὑπάρχειν τῷ δὲ Γ μηδενὶ, τὸ δὲ Β παντὶ τῷ Γ, οἶον ζῷον τινὶ λευκῷ χόνι δ᾽ οὐδεμαί, λευκὸν δὲ πάση χύτῃν. εἰ οὖν ληφθείη τὸ μὲν Α μηδενὶ τῷ Β τὸ δὲ Β παντὶ τῷ Γ, τὸ Α οὐδενὶ τῷ Γ ὑπάρξει· εάν δ᾽ ἡ μὲν ΑΒ πρὸ-
PRIOR ANALYTICS, II. ii

If, however, only one of the premisses posited is false, when the first, e.g., AB, is wholly false, the conclusion will not be true; but when BC is wholly false, the conclusion can be true. I mean by 'wholly false' the contrary statement, i.e., if that which applies to none is assumed to apply to all, or vice versa. For let A apply to no B, and B to all C. Then if the premiss BC which I assume is true, and the premiss AB is wholly false, i.e., A applies to all B, the conclusion cannot be true; for ex hypothesi A applies to no C, if A applies to nothing to which B applies, and B applies to all C. Similarly too if A applies to all B and B to all C, and the premiss BC which has been assumed is true, but the premiss AB is assumed in a form which is wholly false (viz., that A applies to nothing to which B applies): the conclusion will be false; for A will apply to all C if A applies to everything to which B applies, and B applies to all C. Thus it is evident that when the first premiss assumed, whether affirmative or negative, is wholly false, and the other premiss is true, the conclusion which follows is not true; but it will be true if the premiss assumed is not wholly false. For if A applies to all C and to some B, and B applies to all C, as e.g. 'animal' applies to every swan and to some 'white,' and 'white' applies to every swan; and if it is assumed that A applies to all B and B to all C, A will apply to all C, which is true; for every swan is an animal. Similarly too supposing that AB is negative; for it is possible for A to apply to some B but to no C, and for B to apply to all C: as, e.g., 'animal' applies to some 'white' but to no snow, but white applies to all snow. Supposing then that A is assumed to apply to no B, and B to all C, A will apply to no C.
κἂν ἅλη ληφθῇ ἀληθὴς ἡ δὲ ἅλη ψευδής, ἐσται συλλογισμὸς ἀληθὴς· οὐδὲν γὰρ κωλύει τὸ Α τῷ Β καὶ τῷ Γ παντὶ υπάρχειν, τὸ μέντοι Β μηδενὶ τῷ Γ, οἷον ὁσα τοῦ αὐτοῦ γένους εἰδὴ μη ὑπ᾽ ἄληλα· τὸ γὰρ ζῷον καὶ ἵππῳ καὶ ἀνθρώπῳ υπάρχει, ἵππος δ᾽ οὐδενὶ ἀνθρώπῳ. εἳν οὖν ληφθῇ τὸ Α παντὶ τῷ Β καὶ τὸ Β παντὶ τῷ Γ, ἀληθὲς ἐσται τὸ συμπέρασμα ψευδοῦς ὅλης οὐσης τῆς ΒΓ προτάσεως.

'Ομοίως δὲ καὶ στερητικῆς οὐσης τῆς ΑΒ προτάσεως. εἰνδέχεται γὰρ τὸ Α μήτε τῷ Β μήτε τῷ Γ μηδενὶ υπάρχειν, μηδὲ τὸ Β μηδενὶ τῷ Γ, οἷον τοῖς ἐξ ἄλλου γένους εἴδει τὸ γένος· τὸ γὰρ ζῷον οὔτε μουσικῇ οὔτ᾽ ἰατρικῇ υπάρχει, οὐδ᾽ ἡ μουσικὴ ἰατρικὴ· ληφθέντος οὖν τοῦ μὲν Α μηδενὶ τῷ Β τοῦ δὲ Β παντὶ τῷ Γ, ἀληθὲς ἐσται τὸ συμπέρασμα.

Καὶ εἰ μὴ ὅλη ψευδῆς ἡ ΒΓ ἄλλ᾽ ἐπὶ τι, καὶ οὕτως ἐσται τὸ συμπέρασμα ἀληθῆς. οὐδὲν γὰρ κωλύει τὸ Α καὶ τῷ Β καὶ τῷ Γ ὅλῳ υπάρχειν, τὸ μέντοι Β τινὶ τῷ Γ, οἷον τὸ γένος τῷ εἴδει καὶ τῇ διαφορᾷ· τὸ γὰρ ζῷον παντὶ ἀνθρώπῳ καὶ παντὶ πεζῷ, ἵππος δ᾽ ἀνθρωπος τινὶ πεζῷ καὶ οὐ παντὶ. εἰ οὖν τὸ Α παντὶ τῷ Β καὶ τὸ Β παντὶ τῷ Γ ληφθεῖῃ, τὸ Α παντὶ τῷ Γ υπάρξει· ὅπερ ἂν ἀληθῆς.

'Ομοίως δὲ καὶ στερητικῆς οὐσῆς τῆς ΑΒ προτάσεως. εἰνδέχεται γὰρ τὸ Α μήτε τῷ Β μήτε τῷ Γ μηδενὶ υπάρχειν, τὸ μέντοι Β τινὶ τῷ Γ, οἷον τὸ γένος τῷ εἴ ἄλλου γένους εἴδει καὶ διαφορᾷ· τὸ γὰρ ζῷον οὔτε φρονήσει οὐδεμιὰ υπάρχει οὔτε
But if the premiss AB which is assumed is wholly true, and BC is wholly false, we shall have a true conclusion. For there is no reason why A should not apply to all B and all C, while B applies to no C; as is the case with all species of a genus which are not subordinate one to another; for ‘animal’ applies to both horse and man, but ‘horse’ applies to no man. Thus if A is assumed to apply to all B, and B to all C, the conclusion will be true, although the premiss BC is wholly false.

Similarly too when the premiss AB is negative. For it is possible that A should apply to no B and to genus does not apply to the species of another genus, no C, and that B should apply to no C; as, e.g., a For ‘animal’ applies neither to music nor to medicine, nor does music apply to medicine. If, then, it is assumed that A applies to no B but B applies to all C, the conclusion will be true.

Also if the premiss BC is not wholly but only partly false, the conclusion will again be true. For there is no reason why A should not apply to the whole of both B and C, while B applies to some C; as, e.g., the genus applies both to the species and to the differentia; for ‘animal’ applies to every man and to everything that walks on land, while ‘man’ applies to some things which walk on land, but not to all. Supposing, then, that A is assumed to apply to all B, and B to all C, A will apply to all C; which, as we have seen, is true.

Similarly too if the premiss AB is negative. For it is possible for A to apply to no B and to no C, and yet for B to apply to some C; as, e.g., the genus does not apply to the species and differentia of another genus; for ‘animal’ applies neither to ‘thought’


ARISTOTLE

54 b 

δεικτικῇ, ἢ δὲ φρόνησις τινὶ δεικτικῇ. εἰ οὖν
15 ληφθεὶ τὸ μὲν Α μηδενὶ τῷ Β τὸ δὲ Β παντὶ τῷ
Γ', οὐδενὶ τῷ Γ τὸ Α υπάρχει· τοῦτο δὲ ἢν ἀληθὲς.

'Επὶ δὲ τῶν ἐν μέρει συλλογισμῶν ἐνδεχεται καὶ
τῆς πρώτης προτάσεως ὅλης οὕσης ψευδόν τῆς δ' ἐτέρας ἀληθοὺς ἀληθὲς εἰναι τὸ συμπέρασμα, καὶ
20 ἐπὶ τι ψευδόν οὕσης τῆς πρώτης τῆς δ' ἐτέρας ἀληθοὺς, καὶ τῆς μὲν ἀληθοὺς τῆς δ' ἐν μέρει
ψευδών, καὶ ἀμφοτέρων ψευδών. οὐδὲν γὰρ κω-
λυει τὸ Α τῷ μὲν Β μηδενὶ υπάρχειν τῷ δὲ Γ τινὶ,
καὶ τὸ Β τῷ Γ τινὶ, οἷον ζώον οὐδεμιᾷ χών λευκῷ
δὲ τινὶ υπάρχει, καὶ η χών λευκῷ τινί. εἰ οὖν
25 μέσον τεθειη ἡ χών πρῶτον δὲ τὸ ζώον, καὶ
ληφθείῃ τὸ μὲν Α ὅλῳ τῷ Β υπάρχειν τὸ δὲ Β τινὶ
τῷ Γ, ή μὲν ΑΒ ὅλη ψευδῆς, ή δὲ ΒΓ ἀληθῆς, καὶ
tὸ συμπέρασμα ἀληθές. ὁμοίως δὲ καὶ στερητικῆς
οὕσης τῆς ΑΒ προτάσεως· ἐγχωρεί γὰρ τὸ Α τῷ
μὲν Β ὅλῳ υπάρχειν τῷ δὲ Γ τινὶ μή υπάρχειν, τὸ
30 μέντοι Β τινὶ τῷ Γ υπάρχειν, οἷον ζώον ἀνθρώπῳ
μὲν παντὶ υπάρχει λευκῷ δὲ τινὶ οὐχ ἐπεται, οδ' ἀνθρώπος τινὶ λευκῷ υπάρχει· ωστ' εἰ μέσον
τεθειτο τοῦ ἀνθρώπου ληφθεῖ τὸ Α μηδενὶ τῷ Β
ὑπάρχειν τὸ δὲ Β τινὶ τῷ Γ υπάρχειν, ἀληθές ἐσται
35 τὸ συμπέρασμα ψευδούς οὕσης ὅλης τῆς ΑΒ προ-
tάσεως.

Καὶ εἰ ἐπὶ τι ψευδῆς ἢ ΑΒ προτασις, ἐσται τὸ
συμπέρασμα ἀληθές· οὐδὲν γὰρ κωλύει τὸ Α καὶ
τῷ Β καὶ τῷ Γ τινὶ υπάρχειν, καὶ τὸ Β τῷ Γ τινὶ
ὑπάρχειν, οἷον τὸ ζώον τινὶ καλῷ καὶ τινὶ μεγάλῳ,
καὶ τὸ καλὸν τινὶ μεγάλῳ υπάρχειν. εὰν οὖν ληφθῇ

1 ἀληθοὺς] ὅλης ἀληθοὺς nf, Bekker.
2 οὖν] οὐ errore preli Bekker.
nor to 'speculative,' whereas 'thought' applies to some of that which is speculative. Supposing, then, that A is assumed to apply to no B, and B to all C, A will apply to no C; and this, as we have seen, is true.

In the case of particular syllogisms it is possible for the conclusion to be true both (i.) when the first premiss is wholly false and the other is true; and (ii.) when the first premiss is partly false and the other is true; and (iii.) when the former is true and the latter partly false; and (iv.) when both are false. For (i.) there is no reason why A should not apply to no B but to some C, while B applies to some C, as, e.g., 'animal' applies to no snow but to some 'white,' and 'snow' applies to some 'white.' Supposing, then, that 'snow' is posited as the middle term, and 'animal' as the first, and it is assumed that A applies to the whole of B and B to some C, AB is wholly false, but BC is true, and the conclusion is true. Similarly too when the premiss AB is negative. For it is possible for A to apply to the whole of B and not to apply to some C, and yet for B to apply to some C, as, e.g., 'animal' applies to every man, but is not a consequent of some 'white,' and 'man' applies to some 'white'; so that if 'man' is posited as the middle term, and it is assumed that A applies to no B and B applies to some C, the conclusion will be true although the premiss AB is wholly false.

(ii.) Also, if the premiss AB is partly false, the conclusion can be true. For there is no reason why A should not apply both to some B and to some C, while B applies to some C; as, e.g., 'animal' applies to some 'beautiful' and some 'large,' and 'beautiful' applies to some 'large.' Thus if A is assumed
55 a τὸ Α παντὶ τῷ Β καὶ τὸ Β τινὶ τῷ Γ, ἡ μὲν ΑΒ
πρότασις ἐπὶ τὶ ψευδῆς ἔσται, ἡ δὲ ΒΓ ἁληθῆς, καὶ
τὸ συμπέρασμα ἁληθῆς. ὅμοιως δὲ καὶ στερητικῆς
ὁδος τῆς ΑΒ προτάσεως· οἱ γὰρ αὐτοὶ ὄροι
ἔσονται καὶ ὡσαύτως κείμενοι πρὸς τὴν ἀπόδειξιν.
6 Πάλιν εἰ ἡ μὲν ΑΒ ἁληθῆς ἡ δὲ ΒΓ ψευδῆς,
ἀληθῆς ἔσται τὸ συμπέρασμα. οὐδὲν γὰρ κωλύει
tὸ Α τῷ μὲν Β ὅλῳ ὑπάρχειν τῷ δὲ Γ τινὶ, καὶ τὸ
Β τῷ Γ μηδενὶ ὑπάρχειν, οἷον ἦ σον κύκνῳ μὲν παν-
tὶ μελανὶ δὲ τινὶ, κύκνος δὲ οὐδενὶ μελανὶ· ὥστ' εἰ
ληθὲν παντὶ τῷ Β τὸ Α καὶ τὸ Β τινὶ τῷ Γ, ἁλη-
θεῖς ἔσται τὸ συμπέρασμα ψευδοὺς ὄντος τοῦ ΒΓ.
8 Ομοίως δὲ καὶ στερητικῆς λαμβανομένης τῆς
ΑΒ προτάσεως. ἐγχωρεῖ γὰρ τὸ Α τῷ μὲν Β μη-
dενὶ τῷ δὲ Γ τινὶ μή ὑπάρχειν, τὸ μέντοι Β μηδενὶ
tῷ Γ, οἷον τὸ γένος τῷ ἐξ ἀλλού γένους εἶδεν
καὶ τῷ συμβεβηκότι τοῖς αὐτοῖς εἴδει· τὸ γὰρ ἦ σον
10 ἀριθμὸς μὲν οὐδενὶ ὑπάρχει λευκῷ δὲ τινὶ οὐ, ὁ δ' ἀριθμὸς
οὐδενὶ λευκῷ· ἐὰν οὖν μέσον τεθῇ ὁ ἀριθμὸς,
καὶ ληθῇ τὸ μὲν Α μηδενὶ τῷ Β τὸ δὲ Β τινὶ τῷ
Γ, τὸ Α τινὶ τῷ Γ οὐχ ὑπάρξει, ὅπερ ἤν ἁληθὲς,
καὶ ἡ μὲν ΑΒ πρότασις ἁληθῆς, ἡ δὲ ΒΓ ψευδῆς.
12 Καὶ εἰ ἐπὶ τὶ ψευδῆς ἡ ΑΒ ψευδῆς δὲ καὶ ἡ ΒΓ
ἔσται τὸ συμπέρασμα ἁληθῆς. οὐδὲν γὰρ κωλύει
τὸ Α τῷ Β τινὶ καὶ τῷ Γ τινὶ ὑπάρχειν ἐκατέρφο,
tὸ δὲ Β μηδενὶ τῷ Γ, οἷον οἰ ἐναντίον τὸ Β τῷ Γ,
ἄμφω ὁ συμβεβηκότα τῷ αὐτῷ γένει· τὸ γὰρ ἦ σον
τινὶ λευκῷ καὶ τινὶ μελανὶ ὑπάρχει, λευκὸν δ' ὁ
25 οὐδενὶ μελανὶ. ἐὰν οὖν ληθῇ τὸ Α παντὶ τῷ Β καὶ
tὸ Β τινὶ τῷ Γ, ἁληθὲς ἔσται τὸ συμπέρασμα. καὶ
στερητικῆς δὲ λαμβανομένης τῆς ΑΒ ὡσαύτως· οἱ
1 τινὶ οὗ Philoponus (?), Jenkinson: τινὶ codd.
to apply to all B and B to some C, the premiss AB will be partly false, but BC will be true, and the conclusion will be true. Similarly too if the premiss AB is negative; the terms will be the same and will be related in the same way for the purpose of the proof.

(iii.) Again, if AB is true and BC false, the conclusion can be true. For there is no reason why A should not apply to the whole of B and to some C, while B applies to no C; as, e.g., 'animal' applies to every swan and to some 'black,' and 'swan' applies to no 'black'; so that supposing that A is assumed to apply to all B and B to some C, the conclusion will be true although BC is false.

Similarly too if the premiss AB is negative. For it is possible for A to apply to no B and not to apply to some C, while B applies to no C; as, e.g., a genus does not apply to a species from another genus, and does not apply to some of an accident to its own species; for 'animal' applies to no 'number' and does not apply to some 'white,' and 'number' applies to no 'white.' Thus if 'number' is taken as the middle term, and A is assumed to apply to no B, and B to some C, A will not apply to some C; which, as we have seen, is true. The premiss AB is true, and BC is false.

(iv.) The conclusion can also be true if AB is partly false and BC is also false. For there is no reason why A should not apply to some of both B and C, while B applies to no C; e.g., if B is contrary to C, and both are accidents of the same genus; for 'animal' applies to some 'white' and some 'black,' but 'white' applies to no 'black.' Thus if A is assumed to apply to all B, and B to some C, the conclusion will be true. So too if the premiss AB is
γὰρ αὐτοὶ ὅροι καὶ ὡσαύτως τεθήσονται πρὸς τὴν ἀπόδειξιν.

Καὶ ἀμφοτέρων δὲ ψευδῶν οὐσῶν ἔσται τὸ ἐγχωρεῖ γὰρ τὸ Α τῷ μὲν Β μηδενὶ τῷ δὲ Γ τινὶ ὑπάρχειν, τὸ μὲντοι Β μηδενὶ τῷ Γ, οἰον τὸ γένος τῷ ἐξ ἄλλου γένους εἶδει καὶ τῷ συμβεβηκότι τοῖς εἰδεσι τοῖς αὐτοῦ. ζῷον γὰρ ἀριθμῷ μὲν οὐδενὶ λευκῷ δὲ τινὶ ὑπάρχει, καὶ ὁ ἀριθμὸς οὐδενὶ λευκῷ. ἐὰν οὖν ληφθῇ τὸ Α παντὶ τῷ Β καὶ τῷ Γ, τὸ μὲν συμπέρασμα ἀληθῶς, αἰ δὲ προτάσεις ἀμφω ψευδεῖς.

Ὀμοίως δὲ καὶ στερητικής οὔσης τῆς ΑΒ. οὐδὲν γὰρ κωλύει τὸ Α τῷ μὲν Β ὅλῳ ὑπάρχειν τῷ δὲ Γ τινὶ μὴ ὑπάρχειν, μηδὲ τὸ Β μηδενὶ τῷ Γ, οἰον ζῷον κύκῳ μὲν παντὶ μελαινὶ δὲ τινὶ οὐχ ὑπάρχειν, κύκνος δὲ οὐδενὶ μελαινὶ ὑποτείχῃ τὸ Α μηδενὶ τῷ Β τῷ δὲ Β τινὶ τῷ Γ, τὸ Α τινὶ τῷ Γ οὐχ ὑπάρχει. τὸ μὲν οὖν συμπέρασμα ἀληθῶς, αἰ δὲ προτάσεις ψευδεῖς.

Εἰ γὰρ τὸ Α τῷ μὲν Β μηδενὶ υπάρχει τῷ δὲ Γ καὶ . . . ἐκατέρας omittenda ci. Jenkinson.
PRIOR ANALYTICS, II. II–III

taken as negative; the terms will be the same and will be posited in the same relation for the purpose of the proof.

The conclusion can also be true when both premisses are false. For it is possible for A to apply to no B but to some C, while B applies to no C; as, e.g., a genus does not apply to a species from another genus, but applies to an accident of its own species; for 'animal' applies to no 'number' but to some 'white,' and 'number' applies to no 'white.' Thus if A is assumed to apply to all B and B to some C, the conclusion will be true although both premisses are false.

Similarly too if AB is negative; for there is no reason why A should not apply to the whole of B and yet not apply to some C, while B applies to no C; as, e.g., 'animal' applies to every swan but does not apply to some 'black,' while 'swan' applies to no 'black'; so that supposing A to be assumed to apply to no B, and B to apply to some C, A does not apply to some C. Thus the conclusion is true although the premisses are false.

III. In the middle figure it is possible to reach a true conclusion by false premisses in every combination: (i.) if both premisses are wholly false; [if each is partly false;] a (ii.) if one is true and the other wholly false, whichever is falsely assumed; (iii.) if both are partly false; (iv.) if one is absolutely true and the other partly false; and if one is wholly false and the other partly true b—both in universal and in particular syllogisms.

(i.) If A applies to no B but to all C, as, e.g., 'animal' the wording in ch. iv, are at least tautologous with (iii.), and spoil the analysis.

b This case is not treated in the discussion which follows.

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παντι, οὗν ζῷον λίθῳ μὲν οὐδενί ἵππῳ δὲ παντί, εάν ἑναντίως τεθῶσιν αἱ προτάσεις καὶ ληφθῇ τῷ Α τῷ μὲν Β παντὶ τῷ δὲ Γ μηδενί, ἐκ φευγών ὅλων τῶν προτάσεων ἀληθὲς ἕσται τὸ συμπέρασμα.  

οἷον ἀληθός εἰ καὶ εἰ τῷ μὲν Β παντὶ τῷ δὲ Γ μηδενί υπάρχει τὸ Α· ὁ γὰρ αὐτὸς ἕσται συλλογισμὸς.  

Πάλιν εἰ ἡ μὲν ἑτέρα ὅλη φευγής ἡ δ’ ἑτέρα ὅλη ἀληθῆς· οὐδενί γὰρ κωλύει τὸ Α καὶ τῷ Β καὶ τῷ Γ παντὶ υπάρχειν, τὸ μέντοι Β μηδενὶ τῷ Γ, οὗν τὸ γένος τοῖς μή ὑπ’ ἄλληλα εἰδεσιν· τὸ γὰρ ζῷον καὶ ἱππῷ παντὶ καὶ ἀνθρώπῳ, καὶ οὐδεὶς ἄλλος υπὸ τῶν ἰσποσ. εὰν οὖν ληφθῇ τῷ ζῷον τῷ μὲν παντὶ τῷ δὲ μηδενὶ υπάρχειν, ἡ μὲν ὅλη φευγής ἕσται ἡ δ’ ὅλη ἀληθῆς, καὶ τὸ συμπέρασμα ἀληθές πρὸς ὀποτερωθοῦν τεθέντως τοῦ στερητικοῦ.  

Καὶ εἰ ἡ ἑτέρα ὅλη ἀληθῆς· ἐγχωρεῖ γὰρ τὸ Α τῷ μὲν Β τινὶ υπάρχειν τῷ δὲ Γ παντὶ, τὸ μέντοι Β μηδενὶ τῷ Γ, οὗν ζῷον λευκῷ μὲν τινὶ κόρακι δὲ παντὶ, καὶ τὸ λευκὸν οὐδενὶ κόρακι. εὰν οὖν ληφθῇ τῷ Α τῷ μὲν Β μηδενὶ τῷ Γ ὅλῳ υπάρχειν, ἡ μὲν ΑΒ πρότασις ἐπὶ τὶ φευγῆς ἡ δ’ ἈΓ ὅλη ἀληθῆς, καὶ τὸ συμπερασμα ἀληθεύει. καὶ μετατιθεμένου δὲ τοῦ στερητικοῦ ὡσαύτως· διὰ γὰρ τῶν αὐτῶν ὄρων ἡ ἀπόδειξις. καὶ εἰ ἡ καταφατικὴ πρότασις ἐπὶ τὶ φευγῆς ἡ δ’ στερητικὴ ὅλη ἀληθῆς. οὐδενί γὰρ κωλύει τῷ Α τῷ μὲν Β τινὶ υπάρχειν τῷ δὲ Γ ὅλῳ μή υπάρχειν, καὶ τῷ Β μηδενὶ τῷ Γ, οὗν τῷ ζῷον λευκῷ μὲν τινὶ πίτης δ’ οὐδεμα, καὶ τὸ λευκὸν οὐδεμα πίτης ὄστ’ εὰν ληφθῇ τῷ Α ὅλῳ τῷ Β
applies to no ‘stone’ but to all ‘horse,’ if the premises are taken in the contrary sense and A is assumed to apply to all B but to no C, although the premises are wholly false, the conclusion from them can be true. Similarly too if A applies to all B but to no C; for we shall get the same syllogism.

(ii.) So again if one premis is wholly false and the other wholly true; for there is no reason why A should not apply to all of both B and C, while B applies to no C; as, e.g., a genus applies to co-ordinate species; for ‘animal’ applies both to every horse and to every man, and no man is a horse. Thus if ‘animal’ is assumed to apply to all of the one and to none of the other, one premis will be wholly true and the other wholly false, and the conclusion will be true, to whichever of the two terms the negative is attached.

(iv.) So too if one premis is partly false and the other wholly true. For it is possible for A to apply to some B and to all C, while B applies to no C; as, e.g., ‘animal’ applies to some ‘white’ and to every crow, and ‘white’ applies to no crow. Thus if A is assumed to apply to no B but to the whole of C, the premis AB will be partly false, and AC will be wholly true, and the conclusion will be true. Similarly too if the negative is transposed; for the proof will be effected through the same terms. So too if the affirmative premis is partly false and the negative wholly true. For there is no reason why A should not apply to some B and yet not apply at all to C, while B applies to no C; as, e.g., ‘animal’ applies to some ‘white’ but to no pitch, and ‘white’ applies to no pitch; so that if A is assumed to apply to the

*a i.e., if the minor premis is negative.
55 b

υπάρχειν τῷ δὲ Γ μηδενὶ, ἡ μὲν AB ἐπὶ τι ψευδῆς, ἡ δ' AG ὅλη ἀληθῆς, καὶ τὸ συμπέρασμα ἀληθές.

Καὶ εἰ ἀμφότεροι αἱ προτάσεις ἐπὶ τι ψευδεῖς, ἐσται τὸ συμπέρασμα ἀληθές. ἐγχωρεῖ γὰρ τὸ A καὶ τῷ B καὶ τῷ Γ τοῖς υπάρχειν, τὸ δὲ B μηδενὶ τῷ Γ, οἷον ζῷον καὶ λευκῶ τοῖς καὶ μελανὶ τοῖς, τὸ δὲ λευκὸν οὐδενὶ μέλαιν. εἰ δὲν οὖν ληφθῇ τὸ A τῷ B μεν παντὶ τῷ Γ μηδενὶ, ἀμφῶ μὲν αἱ προτάσεις ἐπὶ τι ψευδεῖς, τὸ δὲ συμπέρασμα ἀληθές. ὁμοίως δὲ καὶ μετατεθείσης τῆς στερητικῆς διὰ τῶν αὑτῶν ὀρῶν.

5 Φανερὸν δὲ καὶ ἐπὶ τῶν ἐν μέρει συλλογισμῶν οὐδενὶ γὰρ κωλύει τὸ A τῷ B μὲν παντὶ τῷ Γ τοῖς υπάρχειν, καὶ τὸ B τῷ Γ τοῖς μὴ υπάρχειν, οἷον ζῷον παντὶ ἀνθρώπω λευκῶ τοῖς, ἀνθρώπω δὲ τοῖς λευκῶ οὐχ ὑπάρξει. εἰ δὲν οὖν τεθῇ τὸ A τῷ B, μὲν τῷ Γ τοῖς υπάρχειν, τῇ μὲν καθάλοιο πρότασις ὅλη ψευδῆς, δ' ἐν μέρει ἀληθῆς, καὶ τὸ συμπέρασμα ἀληθές.

'Ὅσαυτὸς δὲ καὶ καταφατικῆς λαμβανομένης τῆς AB: ἐγχωρεῖ γὰρ τὸ A τῷ B μὲν τῷ Γ μηδενὶ τῷ Γ τοῖς μὴ υπάρχειν, καὶ τὸ B τῷ Γ τοῖς μὴ υπάρχειν, οἷον τῷ ζῷον οὐδενὶ ἀψῆ ψευδῆς, λευκῶ τοῖς οὐχ ὑπάρξει, καὶ τῷ ζῷον οὐχ ὑπάρξει τοῖς λευκῶ. εἰ δὲν οὖν τεθῇ τὸ A τῷ B μὲν τῷ Γ τοῖς μὴ υπάρχειν, τῇ μὲν AB πρότασις ἡ καθάλοιο ὅλη ψευδῆς, δ' ἐν μὲν AB τῷ Γ τοῖς μὴ υπάρχειν, τῇ μὲν καθάλοιο ὅλη ψευδῆς, καὶ τὸ συμπέρασμα ἀληθές.

Καὶ τῆς μὲν καθάλοιο ἀληθοῦς τεθείσης τῆς δ' ἐν 20 μέρει ψευδοῦς. οὐδὲν γὰρ κωλύει τὸ A μήτε τῷ B

1 οὐχ ὑπάρξῃ m, Bekker: οὐ C*, Jenkinson: om. ABC
whole of B but to no C, AB will be partly false and AC wholly true, and the conclusion will be true.

(iii.) The conclusion can also be true if both premisses are partly false. For it is possible for A to apply to some of both B and C, while B applies to no C; as, e.g., ‘animal’ applies to some ‘white’ and some ‘black,’ but ‘white’ applies to no ‘black.’ Thus if A is assumed to apply to all B but to no C, both premisses are partly false, but the conclusion is true. Similarly too if the negative premiss is transposed, the proof being effected through the same terms.

It is evident that the same also holds good of particular syllogisms. For there is no reason why A should not apply to all B and some C, while B does not apply to some C; as, e.g., ‘animal’ applies to every man and to some ‘white,’ but ‘man’ will not apply to some ‘white.’ Thus if A is taken to apply to no B but to some C, the universal premiss is wholly false, but the particular premiss is true, and so is the conclusion.

Similarly too if the premiss AB is taken as affirmative; for it is possible for A to apply to no B, and not to apply to some C, and for B not to apply to some C; as, e.g., ‘animal’ applies to nothing inanimate and does not apply to some ‘white,’ and ‘inanimate’ will not apply to some ‘white.’ Thus if A is taken to apply to all B and not to apply to some C, the universal premiss AB will be wholly false, but AC will be true, and the conclusion will be true too.

So too if the universal premiss is true and the particular premiss false. For there is no reason why

*Cf. previous note.
μήτε τῷ Γ οὐδενὶ ἐπεσθαί, τὸ μέντοι Β τινὶ τῷ Γ μη ὑπάρχειν, οἷον ζῷον οὐδενὶ ἄρθυμῳ οὐδ' ἀψύχῳ, καὶ ὁ ἄρθυμος τινὶ ἀψύχῳ οὐχ ἐπεταί. ἐὰν οὖν τεθῇ τὸ A τῷ μὲν Β μηδενὶ τῷ δὲ Γ τινὶ, τὸ μὲν συμπέρασμα ἐσται ἀληθής, καὶ ἡ καθόλου πρότασις ἀληθής ἡ δ' ἐν μέρει ὕψης.

Καὶ καταφατικὴς δὲ τῆς καθόλου τιθεμένης ὤσαύτως. ἐγχωρεῖ γὰρ τὸ A καὶ τῷ Β καὶ τῷ Γ ὀλῳ ὑπάρχειν, τὸ μέντοι Β τινὶ τῷ Γ μη ἐπεσθαί, οἷον τὸ γένος τῷ εἰδει καὶ τῇ διαφορᾷ τὸ γὰρ ζῷων παντὶ ἀνθρώπῳ καὶ ὀλῳ πεζῷ ἐπεταί, ἀνθρώπως δ' οὐ παντὶ πεζῷ- ὠστ' ἀν ληθηθῇ τὸ A τῷ μὲν Β ὀλῳ ὑπάρχειν τῷ δὲ Γ τινὶ μη ὑπάρχειν, ἢ μὲν καθόλου πρότασις ἀληθής ἡ δ' ἐν μέρει ὕψης, τὸ δὲ συμπέρασμα ἀληθῶς.

Φανερὸν δὲ καὶ ὅτι ἐξ ἀμφοτέρων ὕψητων ἐσται τὸ συμπέρασμα ἀληθῶς, εἴπερ ἐνδέχεται τὸ A καὶ τῷ Β καὶ τῷ Γ ὀλῳ ὑπάρχειν, τὸ μέντοι Β τινὶ τῷ Γ μη ἐπεσθαί. ληθέντος γὰρ τοῦ A τῷ μὲν Β μηδενὶ τῷ δὲ Γ τινὶ ὑπάρχειν, αἰ μὲν προτάσεις ἀμφοτέρω καὶ εὐδοκεῖσ, τὸ δὲ συμπέρασμα ἀληθῶς.

Ὅμοιως δὲ καὶ κατηγορικῆς οὖσης τῆς καθόλου προτάσεως τῆς δ' ἐν μέρει στερητικῆς. ἐγχωρεῖ γὰρ τὸ A τῷ μὲν Β μηδενὶ τῷ δὲ Γ παντὶ ἐπεσθαί, καὶ τῷ Β τινὶ τῷ Γ μη ὑπάρχειν, οἷον ζῷων ἐπιστήμῃ μὲν οὐδεμιᾷ ἀνθρώπῳ, δὲ παντὶ ἐπεταί, ἢ δ' ἐπιστήμῃ οὐ παντὶ ἀνθρώπῳ. ἐὰν οὖν ληθηθῇ τῷ A τῷ μὲν Β ὀλῳ ὑπάρχειν τῷ δὲ Γ τινὶ μη ἐπεσθαί, αἰ μὲν προτάσεις ψευδεῖς, τὸ δὲ συμπέρασμα ἀληθῶς.

A should not be a consequent of none of either B or C, while B does not apply to some C; as, e.g., 'animal' applies to no number or inanimate thing, and number is not a consequent of some inanimate things. Thus if A is taken to apply to no B but to some C, the conclusion and the universal premiss will be true, although the particular premiss will be false.

Similarly too if the universal premiss is taken as affirmative. For it is possible for A to apply to the whole of both B and C, and yet for B not to be a consequent of some C: as, e.g., the genus applies to the species and the differentia; for 'animal' applies to every man and to all 'that which walks on land,' but 'man' does not apply to everything that walks on land; so that if A is assumed to apply to the whole of B but not to apply to some C, the universal premiss will be true and the particular false, but the conclusion will be true.

It is evident also that the conclusion drawn from premisses which are both false can be true, since it is possible for A to apply to the whole of both B and C, and yet for B not to be a consequent of some C. For if A is assumed to apply to no B but to some C, both premisses will be false, but the conclusion will be true.

Similarly too if the universal premiss is affirmative and the particular negative. For it is possible for A to be a consequent of no B but of all C, and for B not to apply to some C: as, e.g., 'animal' is a consequent of no 'knowledge' but of all 'man,' and 'knowledge' is not a consequent of all 'man.' Thus if A is assumed to apply to the whole of B, but not to be a consequent of some C, the premisses will be false, but the conclusion will be true.
IV. Ἡσται δὲ καὶ ἐν τῷ ἐσχάτῳ σχήματι διὰ ψευδῶν ἀληθές, καὶ ἀμφοτέρων ψευδῶν οὐσῶν ὁλων καὶ ἐπὶ τι ἐκατέρας, καὶ τής μὲν ἐτέρας ἀληθοὺς ὁλης τῆς δ' ἐτέρας ψευδούς, καὶ τῆς μὲν ἐπὶ τι ψευδούς τῆς δ' ὁλης ἀληθοὺς, καὶ ἀνάπαλω, καὶ ὅσα σαρκύς ἄλλως ἐγχωρεῖ μεταλαβεῖν τὰς προτάσεις. οὐδὲν γὰρ κωλύει μήτε τὸ Α μήτε τὸ Β μηδενὶ τῷ Γ ὑπάρχειν, τὸ μέντοι Α τινὶ τῷ Β ὑπάρχειν, οἷον οὔτ' ἀνθρωπος οὔτε πεζὸν οὐδενὶ ἄφἀχω ἐπεται, ἀνθρωπος μέντοι τινὶ πεζῳ ὑπάρχει. εάν οὖν ληφθῇ τὸ Α καὶ τὸ Β παντὶ τῷ Γ ὑπάρχειν, αἰ μὲν προτάσεις οὐλαὶ ψευδείς, τὸ δὲ συμπέρασμα ἀληθεῖς. ὡσαύτως δὲ καὶ τῆς μὲν στερητικῆς τῆς δὲ καταφατικῆς οὔσης. ἐγχωρεὶ γὰρ τὸ μὲν Β μηδενὶ τῷ Γ ὑπάρχειν τὸ δὲ Α παντὶ, καὶ τὸ Α τινὶ τῷ Β μὴ ὑπάρχειν, οἷον τὸ μέλαν οὐδενὶ κύκνῳ ζώνι δὲ παντὶ, καὶ τὸ ζώον οὐ παντὶ μέλαιν. ὡστ' ἀν ληφθῇ τὸ μὲν Β παντὶ τῷ Γ τὸ δὲ Α μηδενί, τὸ Α τινὶ τῷ Β οὐχ ὑπάρξει· καὶ τὸ μὲν συμπέρασμα ἀληθεῖς, αἰ δὲ προτάσεις ψευδεῖς.

Καὶ εἰ ἐπὶ τι ἐκατέρα ψευδής, ἠσται τὸ συμπέρασμα ἀληθεῖς. οὐδὲν γὰρ κωλύει καὶ τὸ Α καὶ τὸ Β τινὶ τῷ Γ ὑπάρχειν, καὶ τὸ Α τινὶ τῷ Β, οἷον τὸ λευκὸν καὶ τὸ καλὸς τινὶ ζωὸν ὑπάρχει, καὶ τὸ λευκὸν τινὶ καλῷ. εάν οὖν τεθῇ τὸ Α καὶ τὸ Β παντὶ τῷ Γ ὑπάρχειν, αἰ μὲν προτάσεις ἐπὶ τι ψευδεῖς, τὸ δὲ συμπέρασμα ἀληθεῖς. καὶ στερητικῆς δὲ τῆς ΑΓ τιθεμενῆς ὁμοιώς. οὐδὲν γὰρ κωλύει τὸ μὲν Α τινὶ τῷ Γ μὴ ὑπάρχειν τὸ δὲ Β τινὶ ὑπάρχειν, καὶ τὸ Α τῷ Β μὴ παντὶ ὑπάρχειν.
IV. In the last figure too it will be possible to reach a true conclusion by means of false premisses: (i.) when both premisses are wholly false, (ii.) when each of them is partly false, (iii.) when one is wholly true and the other wholly false, (iv.) when one is partly false and the other wholly true; and vice versa; and in all other possible combinations of premisses. For (i.) there is no reason why, although neither \( A \) nor \( B \) applies to any \( C \), \( A \) should not apply to some \( B \): as, e.g., neither 'man' nor 'that which walks on land' is a consequent of anything inanimate, yet 'man' applies to some things which walk on land. Thus if \( A \) and \( B \) are assumed to apply to all \( C \), the premisses will be wholly false, but the conclusion will be true. Similarly too if one premiss is negative and the other affirmative. For it is possible for \( B \) to apply to no \( C \), and \( A \) to all \( C \), and for \( A \) not to apply to some \( B \): as, e.g., 'black' applies to no swan, and 'animal' to every swan, and 'animal' does not apply to everything black; so that if \( B \) is assumed to apply to all \( C \), and \( A \) to no \( C \), \( A \) will not apply to some \( B \); and the conclusion will be true although the premisses are false.

(ii.) So too if each of the premisses is partly false, the conclusion can be true. For there is no reason why both \( A \) and \( B \) should not apply to some \( C \), while \( A \) applies to some \( B \): as, e.g., 'white' and 'beautiful' apply to some 'animal,' and 'white' to some 'beautiful.' Thus if \( A \) and \( B \) are taken to apply to all \( C \), the premisses will be partly false, but the conclusion will be true. Similarly too if \( AC \) is taken as negative. For it is quite possible that \( A \) should not apply to some \( C \), and \( B \) should apply to some \( C \), and \( A \) should not apply to all \( B \): as, e.g., 'white' does not apply
οἶον τὸ λευκὸν τινὶ ζῷῳ οὐχ ὑπάρχει, τὸ δὲ καλὸν τινὶ ὑπάρχει, καὶ τὸ λευκὸν οὐ παντὶ καλῷ· ὅστ' ἂν ληφθῇ τὸ μὲν Α μηδενὶ τῷ Γ τὸ δὲ Β παντὶ, ἀμφότεραι μὲν αἱ προτάσεις ἐπὶ τὶ φευδεῖς, τὸ δὲ συμπέρασμα ἀληθὲς.

Ωσαύτως δὲ καὶ τῆς μὲν ὁλῆς ψευδοῦς τῆς δ' ὁλῆς ἀληθοῦς λαμβανομένης. ἐγχωρεῖ γὰρ καὶ τὸ Α καὶ τὸ Β παντὶ τῷ Γ ἑπεσθαί, τὸ μέντοι Α τινὶ τῷ Β μη ὑπάρχειν, οἶον ζῷῳ καὶ λευκὸν παντὶ κύκνῳ ἑπεται, τὸ μέντοι ζῷῳ οὐ παντὶ ὑπάρχει λευκῷ. τεθέντων οὖν ὅρων τούτων έὰν ληφθῇ τὸ μὲν Β ὅλῳ τῷ Γ ὑπάρχειν τὸ δὲ Α ὅλῳ μη ὑπάρχειν, ἢ μὲν ΒΓ ὁλη ἑσται ἀληθῆς ἢ δὲ ΑΓ ὁλη φευδῆς, τοιαύτης ἐκήρυξεν τὸ λοιπὸν πρὸς τὴν ἀπόδειξιν [μέλαν, κύκνος, καεφύχουν]. ἀλλὰ καὶ εἰ ἀμφότεραι λαμβανόμεθα καταφατικαί· οὐδὲν γὰρ κωλύει τὸ μὲν Β παντὶ τῷ Γ ἑπεσθαί, τὸ δὲ Α ὅλῳ μη ὑπάρχειν, καὶ τὸ Α τινὶ τῷ Β ὑπάρχειν, οἶον κύκνῳ [μὲν] παντὶ ζῷῳ, μελαν δ' οὐδεὶς κύκνῳ, καὶ τὸ μέλαν ὑπάρχει τινὶ ζῷῳ· ὅστ' ἂν ληφθῇ τὸ Α καὶ τὸ Β παντὶ τῷ Γ ὑπάρχειν, ἢ μὲν ΒΓ ὁλη ἀληθῆς ἢ δὲ ΑΓ ὁλη φευδῆς, καὶ τὸ συμπέρασμα ἀληθὲς. ὁμοίως δὲ καὶ τῆς ΑΓ ληφθείσης ἀληθοῦς· διὰ γὰρ τῶν αὐτῶν ὅρων ἡ ἀπόδειξις.

Πάλιν τῆς μὲν ὁλῆς ἀληθοῦς οὐσίας τῆς δ' ἐπὶ τὶ ψευδοῦς. ἐγχωρεῖ γὰρ τὸ μὲν Β παντὶ τῷ Γ ὑπάρχειν τὸ δὲ Α τινὶ, καὶ τὸ Α τινὶ τῷ Β, οἶον διήκουν

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¹ secl. Waitz.
² om. Bnfr, Boethius, Waitz.

* These are not the same terms as before; they are derived.
PRIOR ANALYTICS, II. iv

to some animals, and 'beautiful' applies to some, and 'white' does not apply to everything beautiful; so that if A is assumed to apply to no C, and B to all C, both premisses will be partly false, but the conclusion will be true.

(iii.) So too if one premiss is wholly false and the other wholly true. For it is possible for both A and B to be consequents of all C, and yet for A not to apply to some B: as, e.g., 'animal' and 'white' are consequents of all 'swan,' yet 'animal' does not apply to everything white. Thus these terms being posited, if it is assumed that B applies but A does not apply to the whole of C, BC will be wholly true and AC wholly false, and the conclusion will be true. Similarly too if BC is false and AC true; the same terms [black—swan—inanimate] will serve for the purpose of proof. So too if both premisses are assumed as affirmative. For there is no reason why, while B is a consequent of all C, and A does not apply to the whole of C, A should not apply to some B: as, e.g., 'animal' applies to every swan, 'black' to no swan, and 'white' to some animals; so that if A and B are assumed to apply to all C, BC will be wholly true, and AC wholly false, and the conclusion will be true. Similarly if the premiss AC which we assume is true; for the proof will be effected by means of the same terms.

(iv.) So again when one premiss is wholly true and the other partly false. For it is possible for B to apply to all C, and A to some C, and for A to apply to some B: as, e.g., 'biped' applies, but 'beautiful'

(according to the scholiast on 189 a 5-11) from the lost commentary of Alexander, who saw that a fresh set of examples was needed.

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μὲν παντὶ ἀνθρώπῳ, καλὸν δ’ οὗ παντὶ, καὶ τὸ καλὸν τινὶ δίποδι ὑπάρχει. ἕαν οὖν ληθῇ καὶ τὸ A καὶ τὸ B ὅλω τῷ Γ ὑπάρχειν, ἢ μὲν ΒΓ ὅλη ἄληθῆς ἢ δὲ ΑΓ ἕπὶ τυ ψευδῆς, τὸ δὲ συμπέρασμα ἄληθὲς. ὅμοιως δὲ καὶ τῆς μὲν ΑΓ ἄληθος τῆς δὲ ΒΓ ψευδοῦς ἕπὶ τι Λαμβανομένης: μετατεθέντων γὰρ τῶν αὐτῶν ὅρων ἐσται ἡ ἀπόδειξις. καὶ τῆς μὲν στερητικῆς τῆς δὲ καταφατικῆς οὐσῆς. ὥσπερ γὰρ ἐγχωρεῖ τὸ μὲν Β ὅλω τῷ Γ ὑπάρχειν τὸ δὲ A τινὶ, καὶ ὅταν οὕτως ἔχουσιν οὖ παντὶ τῷ B τῷ A, ἕαν ληθῇ τὸ μὲν Β ὅλω τῷ Γ ὑπάρχειν τὸ δὲ A μηδενι, ἢ μὲν στερητικὴ ἕπιτι ψευδῆς, ἢ δ’ ἐτέρα ὅλη ἄληθῆς καὶ τὸ συμπέρασμα. πάλιν ἐπεὶ δὲ δεικται ὅτι τοῦ μὲν A μηδενὶ ὑπάρχοντος τῷ Γ τοῦ B τινὶ ἐγχωρεῖ τὸ A τινὶ τῷ B μὴ ὑπάρχειν, φανερὸν ὅτι καὶ τῆς μὲν ΑΓ ὅλης ἄληθος οὐσῆς τῆς δὲ ΒΓ ἕπι τι ψευδοῦς ἐγχωρεὶ τὸ συμπέρασμα εἶναι ἄληθὲς. ἕαν γὰρ ληθῇ τὸ μὲν A μηδενὶ τῷ Γ τὸ δὲ B παντὶ, ἢ μὲν ΑΓ ὅλη ἄληθῆς ἢ δὲ ΒΓ ἕπι τι ψευδῆς.

Φανερὸν δὴ καὶ ἐπὶ τῶν ἐν μέρει συλλογισμῶν ὅτι πάντως ἐσται διὰ ψευδῶν ἄληθες. οἱ γὰρ αὐτοὶ ὅροι ληπτεῖν καὶ ὅταν καθόλου ὤσιν αἱ πρωτάσεις, οἱ μὲν ἐν τοῖς κατηγορικοῖς κατηγορικοί, οἱ δ’ ἐν τοῖς στερητικοῖς στερητικοὶ. οὔτε γὰρ διαφέρει μηδενὶ ὑπάρχοντος παντὶ λαβεῖν ὑπάρχειν, καὶ τινὶ ὑπάρχοντος καθόλου λαβεῖν ὑπάρχειν πρὸς τὴν τῶν ὅρων ἑκθέσειν. ὅμοιως δὲ καὶ ἐπὶ τῶν στερητικῶν.

Φανερὸν οὖν ὅτι ἂν μὲν ἢ τὸ συμπέρασμα ψευδὸς, ἀνάγκη εἰς ὅν ὁ λόγος ψευδῆ εἶναι ἡ πάντα ἢ ἔνια,
does not apply, to all 'man,' and 'beautiful' applies to some 'biped.' Thus if both A and B are assumed to apply to the whole of C, BC will be wholly true, and AC partly false, but the conclusion will be true. Similarly too if the assumed premiss AC is true and BC is partly false; the proof can be effected by a rearrangement of the same terms. So too if one premiss is negative and the other affirmative. For since it is possible for B to apply to the whole and A to some of C, and when the terms are thus related A does not apply to all B, if B is assumed to apply to the whole and A to none of C, the negative premiss will be partly false, but the other will be wholly true, and the conclusion will be true. Again, since it has been shown that when A applies to no C and B to some C, it is possible for A not to apply to some B, it is evident that when AC is wholly true and BC partly false, it is still possible for the conclusion to be true. For if A is assumed to apply to no C, and B to all C, AC will be wholly true and BC partly false.

It is evident, then, that in the case of particular syllogisms also it will be possible under any conditions to reach a true conclusion by means of false premisses. For the same terms are to be assumed as when the premisses are universal: affirmative terms in affirmative and negative in negative syllogisms. For it makes no difference to the positing of the terms whether we assume that that which applies to none applies to all, or that that which applies to some applies universally. Similarly too in the case of negative syllogisms.

Thus it is evident that whereas if the conclusion is false the grounds of the argument, either all or

\[ a \, 54 \, a \, 1. \]
τὶ οὔτε πάντα, ἀλλ᾽ ἔστι μηδενὸς ὄντος ἀληθοῦς τῶν ἐν τῷ συλλογισμῷ τὸ συμπέρασμα ὁμοίως εἶναι ἀληθές, οὐ μὴν εἰς ἀνάγκης. αὐτικὸν ὅ τι ὅταν δυὸ ἐχχὶ οὔτω πρὸς ἄλληλα ὡστε θατέρου ὅντος ἐξ ἀνάγκης εἶναι θατέρου, τούτῳ μὴ ὅντος μὲν οὐδὲ θατέρου ἐσται, ὅντος δ᾽ οὔκ ἀνάγκη εἶναι θατέρου. τοῦ δ᾽ αὐτοῦ ὅντος καὶ μὴ ὅντος ἀδύνατον εἰς ἀνάγκης εἶναι τὸ αὐτό. λέγω δ᾽ οἷον τοῦ Α ὅντος λευκοῦ τὸ Β εἶναι μέγα εἰς ἀνάγκης, καὶ μὴ ὅντος λευκοῦ τοῦ Α τὸ Β εἶναι μέγα εἰς ἀνάγκης. ὅταν γὰρ τοῦτο ὅντος λευκοῦ τοῦ Α τοδε ἀνάγκη μέγα εἶναι τὸ Β, μεγάλου δὲ τοῦ Β ὅντος τὸ Γ μὴ λευκόν, ἀνάγκη, εἰ τὸ Α λευκόν, τὸ Γ μὴ εἶναι λευκόν. καὶ ὅταν δυὸ ὅντων θατέρου ὅντος ἀνάγκη θατέρου εἶναι, τοῦτο μὴ ὅντος ἀνάγκη τὸ Α μὴ εἶναι. τοῦ δὴ Β μὴ ὅντος μεγάλου τὸ Α οὐχ οἷον τε λευκόν εἶναι. τοῦ δὲ Α μὴ ὅντος λευκοῦ, εἰ ἀνάγκη τὸ Β μέγα εἶναι, συμβαίνει εἰς ἀνάγκης τοῦ Β μεγάλου μὴ ὅντος αὐτό τὸ Β εἶναι μέγα. τοῦτο δ᾽ ἀδύνατον. εἰ γὰρ τὸ Β μὴ ἐστὶ μέγα, τὸ Α οὐκ ἐσται λευκόν εἰς ἀνάγκης. εἰ οὖν μὴ ὅντος τοῦτο λευκοῦ τὸ Β ἐσται μέγα, συμβαίνει, εἰ τὸ Β μὴ ἐστὶ μέγα, εἶναι μέγα, ὡς διὰ τριῶν.

V. Τὸ δὲ κύκλῳ καὶ εἰς ἀλλήλοις δεικνυσθαὶ ἐστὶ τὸ διὰ τοῦ συμπεράσματος καὶ τοῦ ἀνάπαλιν τῇ κατηγορίᾳ τὴν ἐτέραν λαβόντα πρότασιν συμπεράνωσθαι τῇ λοιπῇ, ἴν ἐλάμβανεν ἐν θατέρῳ συλλογισμῷ οἷον ιἀδὶ ἐδεί δειξαὶ ὅτι τὸ Α τῷ Γ πάντι

* i.e. premiss.
* Because A stands for the conjunction of two premisses; cf. 34 a 16-24.

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some of them, must be false, when the conclusion is true, it is not necessary for all or any of the grounds to be true; but even when no part of the syllogism is true it is possible—although it does not necessarily follow—that the conclusion should be true. The reason for this is that when two things are so interrelated that when the first is the second must be, when the second is not, neither will the first be; but when the second is, the first need not necessarily be. For it is impossible that the same thing should necessarily be whether the same determining factor does or does not apply. I mean, for example, that it is impossible that B should necessarily be great both when A is white and when A is not white. For when, if this particular thing A is white, this particular thing B must be great, and if B is great C cannot be white, then if A is white, C cannot be white. And when, if the former of two things is, the latter must be, if the latter is not, the former, A, cannot be. Then when B is not great, A cannot be white. But if when A is not white B must be great, it follows of necessity that when B is not great B itself is great. But this is impossible; for if B is not great, A will necessarily not be white. Thus if B is to be great when A is not white, it follows that if B is not great, it is great, just as though the proof were effected by three terms.

V. Circular or reciprocal proof consists in using the conclusion and the simple conversion of one premiss to demonstrate the remaining premiss, which was assumed in the original syllogism; as if, for example, supposing that it was required to prove that A applies to all C, and this had been proved by the premiss with subject and predicate interchanged. 
ὑπάρχει, ἐδειξε δὲ διὰ τοῦ B, πάλιν εἰ δεικνύοι ὅτι
tο A τῷ B ὑπάρχει, λαβὼν τὸ μὲν A τῷ Γ ὑπάρχειν
tὸ δὲ Γ τῷ B, καὶ τὸ A τῷ B (πρότερον δ' ἀνά-
τι παλιν ἔλαβε τὸ B τῷ Γ ὑπάρχειν) ἢ εἰ ὅτι τὸ B τῷ Γ
dei deιξει ὑπάρχον, εἰ λάβοι τὸ A κατὰ τοῦ Γ, ὅ
ἡν συμπέρασμα, τὸ δὲ B κατὰ τοῦ A ὑπάρχειν
(πρότερον δ' ἐλήφθη ἀνάπαλιν τὸ A κατὰ τοῦ B).

ἄλλως δ' οὖκ ἔστιν εξ ἄλληλων deειξαι. εἰτε γὰρ
καὶ ἄλλο μέσον λήψεται, οὐ κύκλῳ (οὐδὲν γὰρ λαμβά-
νεται τῶν αὐτῶν), εἰτε τούτων τε, ἀνάγκη δάτερον
μόνον εἰ γὰρ ἁμφω, ταύτῳ ἐστιν συμπέρασμα, deι
d' ἐτερον.

Ἐν μὲν οὖν τοῖς μὴ ἀντιστρέψουσιν εξ ἀναπο-
deίκτου τῆς ἐτέρας προτάσεως γίγνεται ὁ συλ-
λογισμὸς. οὐ γὰρ ἔστιν ἀποδείξει διὰ τούτων τῶν

57 b ὅρων ὅτι τῷ μέσῳ τῷ τρίτον ὑπάρχει ἢ τῷ πρῶτῳ
tὸ μέσον. ἐν δὲ τοῖς ἀντιστρέψουσιν ἐστὶ πάντα
deικνύναι δὲ ἄλληλων, οἷον εἰ τὸ A καὶ τὸ B καὶ
tὸ Γ ἀντιστρέψουσιν ἄλληλοι. δεδειχθὼ γὰρ τὸ
ΑΓ διὰ μέσου τοῦ B, καὶ πάλιν τὸ AB διὰ τοῦ

58 a συμπεράσματος καὶ τῆς ΒΓ προτάσεως ἀντι-
προσοδικείσης, ωσαύτως δὲ καὶ τῷ ΒΓ διὰ τοῦ

συμπεράσματος καὶ τῆς ΑΒ προτάσεως ἀντιστρα-
μένης. δεῖ δὲ τὴν τε ΓΒ καὶ τὴν BA πρότασιν
ἀποδείξει. ταύταις γὰρ ἀναποδείκτων κεχρήμεθα
μόναις. εὰν οὖν ληφθῇ τῷ B παντὶ τῷ Γ ὑπάρχειν
καὶ τὸ Γ παντὶ τῷ A, συλλογισμὸς ἐστιν τοῦ B

πρὸς τὸ Α. πάλιν εὰν ληφθῇ τὸ μὲν Γ παντὶ τῷ A
tὸ δὲ Α παντὶ τῷ B, παντὶ τῷ B τὸ Γ ἀνάγκη
means of B, it were then to be proved in turn that A applies to B by assuming that A applies to C and C to B, and therefore A to B; whereas in the original syllogism it was conversely assumed that B applies to C; or if, supposing that it is required to prove that B applies to C, one should assume that A applies as the predicate of C, which was the conclusion before, and B as the predicate of A; whereas in the original syllogism it was conversely assumed that A is predicated of B. Reciprocal proof is impossible in any other way. For (1) if we assume a different middle term, the proof will not be circular, since none of the same propositions is assumed; and (2) if we assume any of them, it must be one only; for if both are assumed, we shall have the same conclusion as before, whereas we require another.

Thus where conversion is impossible, one of the premisses from which the syllogism results is undemonstrated; for it is impossible to demonstrate from the given terms that the third applies to the middle or the middle to the first term. But where conversion is possible, i.e., if A and B and C are convertible with one another, they can all be proved reciprocally. For let AC be proved by means of the middle B, and AB again by means of the conclusion and the premiss BC converted, and BC also in the same way by means of the conclusion and the premiss AB after conversion. We must, however, prove the premisses CB and BA; for these are the only premisses of those which we have used that remain undemonstrated. If, then, B is assumed to apply to all C and C to all A, we shall have a syllogism giving the relation of B to A. Again, if C is assumed to apply to all A, and A to all B, C must apply to all B.
ὑπάρχειν. ἐν ἀμφοτέροις δὴ τούτως τοῖς συλλογισμοῖς ἦ ΓΑ πρότασις εἰληφται ἀναποδεικτός (αἱ γὰρ ἐτεραι δεδειγμέναι ἦσαν), ὡστ' ἂν ταύτην ἀποδείξωμεν, ἀπασαι ἐσονται δεδειγμέναι δὲ ἀλλήλων. ἐὰν οὖν ληφθῇ τὸ Γ παντὶ τῷ Β καὶ τὸ Β παντὶ τῷ Α ὑπάρχειν, ἀμφότεραι τε αἱ προτάσεις ἀποδειγμέναι λαμβάνονται, καὶ τὸ Γ τῷ Α ἀνάγκη ὑπάρχειν.

Πανερὸν οὖν ὅτι ἐν μόνοις τοῖς ἀντιστρέφουσι κύκλῳ καὶ δι’ ἀλλήλων ἐνδέχεται γίγνεσθαι τὰς ἀποδείξεις, ἐν δὲ τοῖς ἀλλοις ὃς πρότερον εἴπομεν. συμβαίνει δὲ καὶ ἐν τούτοις αὐτῷ τῷ δεικνυμένῳ χρῆσθαι πρὸς τὴν ἀπόδειξιν τὸ μὲν γὰρ Γ κατὰ τὸν Β καὶ τὸ Β κατὰ τὸν Α δείκνυται ληφθέντος τοῦ Γ κατὰ τὸν Α λέγεσθαι, τὸ δὲ Γ κατὰ τὸν Α διὰ τούτων δείκνυται τῶν προτάσεων, ὡστε τῷ συμ- 20 περάσματι χρώμεθα πρὸς τὴν ἀπόδειξιν.

'Επὶ δὲ τῶν στερητικῶν συλλογισμῶν ὡδὲ δείκνυται εἰς ἀλλήλων. ἐστώ τὸ μὲν Β παντὶ τῷ Γ υπάρχον, τὸ δὲ Α οὐδενὶ τῶν Β· συμπέρασμα ὅτι τὸ Α οὐδενὶ τῶν Γ. εἰ δὴ πάλιν δεὶ συμπεράνασθαι ὅτι τὸ Α οὐδενὶ τῶν Β, ὃ πάλαι ἐλαβεν, ἐσται τὸ μὲν Α μηδενὶ τῷ Γ τὸ δὲ Γ παντὶ τῷ Β· οὕτω γάρ ἀνάπαλιν ἡ πρότασις. εἰ δ’ ὅτι τὸ Β τῷ Γ δεῖ συμπεράνασθαι, οὐκέθ’ ὁμοίως ἀντιστρεπτέον τὸ ΑΒ (ἡ γὰρ αὐτὴ πρότασις τὸ Β μηδενὶ τῷ Α καὶ τὸ Α μηδενὶ τῷ Β υπάρχειν), ἀλλὰ ληπτέον, ψ’ τὸ 30 Α μηδενὶ υπάρχει, τὸ Β παντὶ υπάρχειν, ἐστω τὸ Α μηδενὶ τῶν Γ υπάρχον, ὁπερ ἢν τὸ συμπέρασμα, 1 υπάρχον scripel: υπάρχειν.
Now in both these syllogisms the premiss CA has been assumed without being demonstrated; the others were already proved. Thus if we demonstrate this, they will all have been proved reciprocally. If, then, C is assumed to apply to all B, and B to all A, both the premisses assumed have been demonstrated, and C must apply to all A.

Thus it is evident that circular and reciprocal demonstrations can only be effected where conversion is possible; in the case of other syllogisms they can only be used as described above. In these also it happens that we use the very thing which is to be proved for the purpose of the demonstration; for we prove that C is predicated of B and B of A by assuming that C is predicated of A, and we prove that C is predicated of A by means of these premisses; so that we use the conclusion for the purpose of the demonstration.

In negative syllogisms reciprocal proof is effected as follows. Let B apply to all C, and A to no B. The conclusion is that A applies to no C. Then if it is required to establish in turn that A applies to no B, which was assumed before, we shall have the premisses that A applies to no C, and that C applies to all B; for in this way the premiss BC is reversed. If, on the other hand, it is required to establish that B applies to C, the premiss AB must not be converted again as before (for the premiss 'B applies to no A' is the same as 'A applies to no B'); but we must assume that B applies to all of that to none of which A applies. Let A apply to no C, which was the conclusion before,

\[\text{Reciprocal proof in negative syllogisms.}\]

\[\text{\textsuperscript{a}}\] Aristotle is guilty of petitio principii; this is exactly what is required to be proved.
δὲ τὸ Α μηδενέ, τὸ Β εἰλήφθω παντὶ ὑπάρχειν, ἀνάγκη οὖν τὸ Β παντὶ τῷ Γ ὑπάρχειν.

'ὡστε τριῶν ὄντων ἐκαστὸν συμπέρασμα γέγονεν, καὶ τὸ κύκλω ἀποδεικνύναι τούτος ἐστιν, τὸ συμπέρασμα λαμβάνοντα καὶ ἀνάπαλω τὴν ἔτεραν πρότασιν τῇ λοιπῇ συλλογίζεσθαι.

'Επὶ δὲ τῶν ἐν μέρει συλλογισμῶν τῆς μὲν καθόλου πρότασιν οὐκ ἔστιν ἀποδείκτικα διὰ τῶν ἔτερων, τὴν δὲ κατὰ μέρος ἔστιν. ὅτι μὲν οὖν οὐκ ἔστιν ἀποδείκτικα τὴν καθόλου φανερὸν τὸ μὲν γὰρ καθόλου δείκνυται διὰ τῶν καθόλου, τὸ δὲ συμπέρασμα οὐκ ἔστι καθόλου, δεῖ δὲ ἐκ τοῦ συμπεράσματος δείξαι καὶ τῆς ἔτερας πρότασιν.

(ἐτί ὅλως οὐδὲ γίγνεται συλλογισμὸς ἀντιστροφῆς τῆς προτάσεως· ἐν μέρει γὰρ ἀμφότερα γίγνονται αἱ προτάσεις) τὴν δὲ ἐπὶ μέρους ἔστιν. δεδείχθω γὰρ τὸ Α κατὰ τῶν τοῦ Γ διὰ τοῦ Β. ἐὰν οὖν ληφθῇ τὸ Β παντὶ τῷ Α καὶ τὸ συμπέρασμα μὲν, τὸ Β τινὶ τῷ Γ ὑπάρχει· γίγνεται γὰρ τὸ πρῶτον σχήμα, καὶ τὸ Α μέσον.

Εἰ δὲ στερητικὸς ὁ συλλογισμός, τὴν μὲν καθόλου πρότασιν οὐκ ἔστι δεῖξαι, δὲ δὲ καὶ πρότερον ἐλέγχθη· τὴν δὲ ἐν μέρει ἔστιν, ἐὰν ὁμοίως ἀντιστροφῆ τὸ AB ὄντως κατὰ τῶν καθόλου, οἰον ὁ τὸ A τινὶ μή ὑπάρχει, τὸ B τινὶ ὑπάρχει· ἀλλὰς γὰρ οὐ γίγνεται συλλογισμὸς διὰ τὸ ἀποφατικὴν εἶναι τὴν ἐν μέρει πρότασιν.

VI. Ἔν δὲ τῷ δευτέρῳ σχήματι τὸ μὲν κατα-

1 δὲ δ᾽ Βuhle: διό. 2 ἐστὶν om. Cu, Bekker.
3 ἐὰν μὲν A²Ccmf1², ἐὰν μὲν οὖν B².
4 καθόλου AB²: καθόλου, οὐκ ἔστι, διὰ προσλήψεως δὲ ἐστὶ uolgo.
and let it be assumed that B applies to all of that to none of which A applies. Then B must apply to all C.

Thus each of the three propositions has been inferred as a conclusion; and that is what circular demonstration is, viz., to assume the conclusion and the converse of one premiss, and so infer the remaining premiss.

In particular syllogisms the universal premiss cannot be demonstrated by means of the others, but the particular premiss can. That the universal premiss cannot be demonstrated is evident; for the universal is proved by universal premisses, but the conclusion is not universal, and we have to draw our proof from the conclusion and the other premiss. Moreover, if the premiss is converted no syllogism at all results; because both premisses become particular. The particular premiss, however, can be demonstrated. Let it be proved, by means of B, that A is stated of some C. Then if B is assumed to apply to all A, and the conclusion stands, B will apply to some C; for we get the first figure with A as the middle.

If on the other hand the syllogism is negative, the universal premiss cannot be proved, for the reason explained above. But the particular premiss can be proved, if AB is converted in the same way as in universal syllogisms; viz., to the effect that B applies to some of that to some of which A does not apply. Otherwise no syllogism results, because the particular premiss is negative.

VI. In the second figure the affirmative statement

\[ C_f. 58 \text{ a 29 note.} \]
φατικόν οὐκ ἔστὶ δείξαι διὰ τούτου τοῦ τρόπου, τὸ δὲ στερητικὸν ἐστὶν. τὸ μὲν οὖν κατηγορικὸν οὐ δείκνυται διὰ τὸ μὴ ἀμφοτέρας εἶναι τὰς προτάσεις καταφατικάς· τὸ γὰρ συμπέρασμα στερητικὸν ἐστι, τὸ δὲ κατηγορικὸν ἐξ ἀμφοτέρων ἐδείκνυτο καταφατικών· τὸ δὲ στερητικὸν ὡδὲ δείκνυται. ὑπάρχετω τὸ Α παντὶ τῷ Β τῷ Τ μηδενὶ συμπέρασμα τὸ Β οὐδενὶ τῷ Γ. εὰν οὖν ληφθῇ τὸ Β παντὶ τῷ Α υπάρχου, τὸ δὲ τῷ Γ μηδενὶ, ἀνάγκη τὸ Α μηδενὶ τῷ Γ υπάρχειν γίγνεται γὰρ τὸ δεύτερον σχῆμα (μέσον τὸ Β). εἰ δὲ τὸ ΑΒ στερητικὸν ἐλήφθη, θάτερον δὲ κατηγορικόν τὸ πρῶτον ἐσται σχῆμα, τὸ μὲν γὰρ Γ παντὶ τῷ Α τῷ Β οὐδενὶ τῷ Γ, ἀλλ᾽ οὐν τοῦ συμπεράσματος καὶ τῆς μᾶς προτάσεως οὐ γίγνεται συλλογισμός, προσληφθείσης δ᾽ ἐτέρας ἐσται.

Ἡν δὲ μὴ καθόλου οὐ συλλογισμὸς ἂν, ἢ μὲν ἐν ὅλῳ πρότασις οὐ δείκνυται (διὰ τὴν αὐτὴν αἰτίαν ἡ περ εἰπομεν καὶ πρότερον), ἢ δ᾽ ἐν μέρει δεικνυται ἢ τῷ καθόλου κατηγορικὸν. υπαρχείων γὰρ τὸ Α παντὶ τῷ Β τῷ Δ μὴ παντὶ συμπέρασμα ΒΓ. εὰν οὖν ληφθῇ τὸ Β παντὶ τῷ Α τῷ Τ μηδενὶ τῷ Γ οὐ παντὶ, τὸ Α τυί τῷ Γ οὐχ υπάρξει (μέσον Β). εἰ δ᾽ ἐστὶν ἢ καθόλου στερητική, οὐ δειχθεσται ἢ ΑΓ πρότασις ἀντιστραφέντος τοῦ ΑΒ· συμβαίνει γὰρ ἢ ἀμφοτέρας ἢ τὴν ἐτέραν πρότασιν γίγνεσθαι ἀποφατικήν, ὡστε οὐκ ἐσται συλλογισμός. ἀλλ' ὅμοιος δειχθήσεται ὡς καὶ ἐπὶ τῶν Τῷ δὲ Γ μηδενὶ Cm et in marg. Bν: om. oct.
cannot be proved by this means, but the negative second
statement can. The affirmative statement cannot be
proved because the premisses are not both affirmative;
for the conclusion is negative, and the affirmative
statement can only be proved, as we have seen, by
premisses which are both affirmative. The negative
statement is proved as follows. Let A apply to
all B, but to no C. The conclusion is that B
applies to no C. Then if B is assumed to apply to
all A, A must apply to no C; for we get the second
figure with B as the middle term. If AB has been
assumed as negative and the other premiss as affirm-
ative, we shall have the first figure; for C applies to
all A, and B to no C, so that B applies to no A, and
therefore A to no B. Thus we get no syllogism by
means of the conclusion and one premiss, but we
shall have a syllogism if we assume a further
premiss.a

If the syllogism is not universal, the universal
premiss cannot be proved, for the same reason which
we have explained aboveb; but the particular premiss
can be proved when the universal statement is affirm-
ative. Let A apply to all B, but not to all C. The
conclusion is BC. Then if B is assumed to apply to
all A, but not to all C, A will not apply to some C.
The middle term is B. If, however, the universal
premiss is negative, the premiss AC cannot be proved
by the conversion of AB; for it follows that either
one or both of the premisses become negative, so that
there will be no syllogism. It can, however, be
proved in a similar way to that which was used in the
case of universal syllogisms: i.e., if it is assumed that

a i.e. the converse of the conclusion.

b 58 a 36 ff.
καθόλου, ἕαν ληθῆ ὁ τὸ Β τυί μὴ ὑπάρχει τὸ Α τυί ὑπάρχειν.

VII. Ἐπὶ δὲ τοῦ τρίτου σχήματος ὅταν μὲν ἄμφοτεραι αἱ προτάσεις καθόλου ληθῆσαι, οὔκ ἐνδέχεται δεῖξαι δι' ἀλλήλων· τὸ μὲν γὰρ καθόλου δείκνυται διὰ τῶν καθόλου, τὸ δ' ἐν τούτῳ συμπέρασμα ἀεὶ κατὰ μέρος, ὥστε φανερὸν ὅτι ὅλως οὔκ ἐνδέχεται δεῖξαι διὰ τούτου τοῦ σχήματος τὴν καθόλου πρότασιν. ἐὰν δ' ἢ μὲν ἢ καθόλου ἢ δ' ἐν μέρει, ποτὲ μὲν ἔσται ποτὲ δ' οὔκ ἔσται. ὅταν μὲν οὖν ἄμφοτεραι κατηγορικαὶ ληθῆσαι καὶ τὸ καθόλου γένηται πρὸς τῷ ἔλλοιπον ἀκρω, ἔσται, ὅταν δὲ πρὸς θατέρῳ, οὔκ ἔσται. ὑπαρχέτω γὰρ τὸ Α παντὶ τῷ Γ τὸ δὲ Β τυί· συμπέρασμα τὸ ΑΒ. ἐὰν οὖν ληθῇ τὸ Γ παντὶ τῷ Α ὑπάρχειν, τὸ μὲν Γ δεδεικται τυί τῷ Β ὑπάρχειν, τὸ δὲ Β τυί τῷ Γ, οὐ δεδεικται. καὶ ταύται ἀνάγκη, εἰ τὸ Γ τυί τῷ Β, καὶ τῷ Β τυί τῷ Γ ὑπάρχειν. ἀλλ' οὐ ταύτων ἔστι τόδε τῳδε καὶ τόδε τῳδε ὑπάρχειν, ἀλλὰ προσληπτέον εἰ τόδε τῳδε τῳδε, καὶ βάτερον τῳδε τῳδε· τούτων δὲ ληθῆσαν οὐκέτι γίγνεται εἰ τοῦ συμπεράσματος καὶ τῆς ἑτέρας προτάσεως ὁ συλλογισμός. εἰ δὲ τὸ μὲν Β παντὶ τῷ Γ τὸ δὲ Α τυί τῷ Γ, ἔσται δεῖξαι τῷ ΑΓ ὅταν ληθῇ τὸ μὲν Γ παντὶ τῷ Β ὑπάρχειν τὸ δὲ Α τυί. εἰ γὰρ τὸ Γ παντὶ τῷ Β τὸ δὲ Α τυί τῷ Β, ἀνάγκη τῷ Α τυί τῷ Γ ὑπάρχειν (μέσον τὸ Β).

Καὶ ὅταν ἢ ἢ μὲν κατηγορικὴ ἢ δὲ στερητικὴ, καθόλου δ' ἢ κατηγορικὴ, δειχθῆσαι ἢ ἑτέρα. ὑπαρχέτω γὰρ τὸ Β παντὶ τῷ Γ, τὸ δὲ Α τυί μὴ ὑπαρχέτω· συμπέρασμα ὅτι τὸ Α τυί τῷ Β οὖχ
PRIOR ANALYTICS, II. vi–vii

A applies to some of that to some of which B does not apply.¹

VII. In the third figure, when both premisses are assumed as universal, reciprocal proof is impossible; for the universal statement can only be proved by means of universal statements, and in this figure the conclusion is always particular; so that it is evident that the universal premiss cannot be proved at all by means of this figure. If, however, one premiss is universal and the other particular, reciprocal proof will sometimes be possible and sometimes not. When both premisses are assumed as affirmative, and the universal relation is attached to the minor extreme, it will be possible; but not when the universal relation is attached to the other extreme. For let A apply to all C, and B to some C. The conclusion is AB. Then if C is assumed to apply to all A, it is proved that C applies to some B, but not that B applies to some C. It may be urged that if C applies to some B, B must also apply to some C; but 'X applies to Y' is not the same as 'Y applies to X'; we must make the further assumption that if X applies to some Y, Y also applies to some X; and if we assume this, the syllogism is no longer effected by means of the conclusion and the other premiss. But if B applies to all C, and A to some C, the premiss AC can be proved after assuming that C applies to all and A to some B. For if C applies to all B, and A to some B, A must apply to some B. B is the middle term.

When one premiss is affirmative and the other negative, and the affirmative premiss is universal, the other can be proved. For let B apply to all C, and let A not apply to some C. The conclusion is that A

¹ Cf. 58 a 29, b 9.
δ. ἕνως μὲν πρὸςληψῆς τὸ Γ παντὶ τῷ Β ὑπάρχειν, ἀνάγκη τὸ Α τινὶ τῷ Γ μὴ ὑπάρχειν (μέσον τὸν Β). δὴν δὴ στερητικὴ καθόλου γένηται οὐ
25 δεύκνυται ἢ ἐτέρα, εἰ μὴ ἄσσεπε ἐπὶ τῶν πρότερον, εάν ληφθῇ ω τούτῳ τινὶ μὴ ὑπάρχει τάτερον τινὶ ὑπάρχειν, οἴον εἰ τὸ μὲν Α μηδεὶν τῷ Γ τὸ δὲ Β τινὶ συμπέρασμα δι᾽ οτοὶ τὸ Α τινὶ τῷ Β οὐχ ὑπάρχει. εάν οὖν ληφθῇ ω τὸ Δ τινὶ μὴ ὑπάρχει τῷ Γ τινὶ ὑπάρχειν, ἀνάγκη τὸ Γ τινὶ τῶν Β ὑπάρχειν. ἀλλὰς δ' οὐκ ἔστων αὐτοτρέφοντα τὴν καθόλου πρότασιν δεῖξαι τὴν ἑτέραν· οὐδαμῶς γὰρ ἐσται συλλογισμός.

Φανερὸν οὖν ὅτι ἐν μὲν τῷ πρῶτῳ σχήματι ἢ δ’ ἀλλήλων δεῖξις διὰ τε τοῦ τρίτου καὶ διὰ τοῦ πρῶτου γίγνεται σχήματος. κατηγορικοῦ μὲν γὰρ
35 ὁντός τοῦ συμπεράσματος διὰ τοῦ πρῶτου, στερητικοῦ δὲ διὰ τοῦ ἐσχάτου· λαμβάνεται γὰρ ω τούτο μηδεὶν τάτερον παντὶ ὑπάρχειν. ἐν δὲ τῷ μέσῳ καθόλου μὲν ὁντός τοῦ συλλογισμοῦ δι’ αὐτοῦ τε καὶ διὰ τοῦ πρῶτου σχήματος, ὅταν δ’ ἐν μέρει, δ’ αὐτοῦ τε καὶ τοῦ ἐσχάτου. ἐν δὲ τῷ τρίτῳ δ’ αὐτοῦ πάντες. φανερὸν δὲ καὶ ὅτι ἐν τῷ τρίτῳ καὶ τῷ μέσῳ οὐ μὴ δ’ αὐτῶν γιγνόμενοι συλλογισμοὶ ἢ οὐκ εἶσον κατὰ τὴν κύκλῳ δεῖξιν ἢ ἀτελεῖς.

40 VIII. Τὸ δ’ αὐτοτρέφειν ἐστὶ τὸ μετατιθέντα τὸ συμπέρασμα ποιεῖν τὸν συλλογισμὸν ὅτι ἢ τὸ ἀκρον τῷ μέσῳ οὐχ ὑπάρξει ἢ τούτῳ τῷ τελευταῖῳ. ἀνάγκη γὰρ τοῦ συμπεράσματος αὐτοτραφέντος καὶ τῆς ἑτέρας μενούσῃς προτάσεως ἀναιρεῖσθαι

a 58 a 29, b 9, 37.
b Cf. 58 b 22-27, 59 a 6-14.
c i.e. changing its quality, with or without change of
PRIOR ANALYTICS, II. vii–viii

does not apply to some B. Then if it is further assumed that C applies to all B, it must follow that A does not apply to some C. The middle term is B. But when the negative premiss is universal, the other cannot be proved, unless, as in the previous examples, it is assumed that where one term does not apply to some, the other does apply to some. E.g., if it is assumed that A applies to no C, and B to some C, the conclusion is that A does not apply to some B. Then if it is assumed that C applies to some of that to some of which A does not apply, C must apply to some B. It is impossible in any other way by converting the universal premiss to prove the other, for in no case will there be a syllogism.

Thus it is evident that in the first figure reciprocal proof is effected both by the third and by the first figure; by the first when the conclusion is affirmative, and by the last when it is negative; for it is assumed that where one term applies to none, the other applies to all. In the middle figure, when the syllogism is universal, reciprocal proof is possible both by that figure itself and by the first figure; when it is particular, both by that figure and by the last. In the third figure all proofs are by the figure itself. It is also evident that in the third and middle figures such syllogisms as are not effected by these figures themselves are either incompatible with circular proof or imperfect.

VIII. Converting a syllogism consists in reversing the conclusion and so constructing the syllogism that either the major extreme will not apply to the middle or the latter will not apply to the last term. For if the conclusion is converted and one premiss remains quantity. The same meaning attaches (in this and the two following chapters) to 'converting.'
ν ἔσται, καὶ τὸ συμπέρασμα ἔσται. διαφέρει δὲ τὸ ἀντικειμένους ἢ ἐναντίως ἀντιστρέφει τὸ συμπέρασμα; οὐ γὰρ ὁ αὐτὸς γίγνεται συλλογισμὸς ἐκατέρως ἀντιστραφέντος; δῆλον δὲ τούτ’ ἔσται διὰ τῶν ἐπομένων (λέγω δ’ ἀντικείσθαι μὲν τὸ παντὶ τῷ οὐ παντὶ καὶ τὸ τινὶ τῷ οὐδενί, ἐναντίως δὲ τὸ παντὶ τῷ οὐδενί καὶ τὸ τινὶ τῷ οὐ τινὶ ὑπάρχειν).

Ἔστω γὰρ δεδειγμένοι τὸ Α κατὰ τοῦ Γ διὰ μέσου τοῦ Β. εἰ δὴ τὸ Α ληφθῇ μηδενί τῷ Γ ὑπάρχειν τῷ δὲ Β παντὶ, οὐδενὶ τῷ Γ ὑπάρχει τῷ Β, καὶ εἰ τὸ μὲν Α μηδενί τῷ Γ τὸ δὲ Β παντὶ τῷ Γ, τὸ Α οὐ παντὶ τῷ Β καὶ οὔχι ὅλως οὐδενί; οὐ γὰρ ἐδείκνυτο τὸ καθόλου διὰ τοῦ ἐσχάτου σχήματος. ὅλως δὲ τὴν πρὸς τῷ μείζων ἀκρῷ πρότασις οὐκ ἐστιν ἀνασχεδεσθαι καθόλου διὰ τῆς ἀντιστροφῆς, ἀπε γὰρ ἀναρχείται διὰ τοῦ τρίτου σχήματος; ἀνάγκη γὰρ πρὸς τὸ ἐσχάτου ἀκρον ἀμφοτέρας λαβεῖν τὰς προτάσεις.

Καὶ εἰ στερητικὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὁ συλλογισμὸς ὠτρήχειν.

Εἰ ἂν δ’ ἀντικειμένως ἀντιστράφη τὸ συμπέρασμα, καὶ οἱ συλλογισμοὶ ἀντικείμενοι καὶ οὐ καθόλου ἐσοῦνται; γίγνεται γὰρ ἡ ἑτέρα πρότασις εἰς μέρει, ὡστε καὶ τὸ συμπέρασμα ἐσται κατὰ μέρος. ἐστις γὰρ κατηγορικὸς ὁ συλλογισμός, καὶ ἀντιστραφή-
as before, the remaining premiss must be invalidated; for if it is to be valid, the conclusion must also be valid. It makes a difference, however, whether we reverse the conclusion in the contradictory or in the contrary sense; for we do not get the same syllogism by both modes of reversal. This will be clear from the following explanation. (By the contradictory of 'applying to all' I mean 'not applying to all,' and of 'applying to some' 'applying to none'; whereas the contrary of 'applying to all' is 'applying to none,' and of 'applying to some' is 'not applying to some.')

Let us take it as proved, by means of the middle term B, that A is stated of all C. Then supposing that A is assumed to apply to no C, but to all B, B will apply to no C. And if A applies to no C, but B applies to all C, A will not apply to all B; but it does not at all follow that it will apply to no B, for, as we have seen, the universal statement cannot be proved by the last figure. In general it is impossible to invalidate the major premiss universally by conversion, because the refutation is always by the third figure, since we must assume both premisses in relation to the last extreme.

The same also holds if the syllogism is negative. Let it be proved, by means of the middle term B, that A applies to no C. Then if A is assumed to apply to all C, but to no B, B will apply to no C. And if A and B apply to all C, A will apply to some B; but ex hypothesi it applies to none.

If, however, the conclusion is converted in the contradictory sense, the syllogisms will also be contradictory, and not universal; for one premiss becomes particular, and so the conclusion will also be particular. For let the syllogism be affirmative, and
ἐξ. Ἦ το. 3, οἱ ὁμοίως ὑπάρχει τῷ δὲ Β παντί, τὸ Α οὐ παντὶ τῷ Β.

ὁμοίως δὲ καὶ εἰ στερητικὸς ὁ συλλογισμός. εἰ γάρ τὸ Α τινὶ τῷ Γ υπάρχει τῷ δὲ Β μηδενὶ, τὸ Β τινὶ τῷ Γ οὐχ υπάρξει, οὐχ ἀπλῶς οὔδενὶ καὶ εἰ τὸ μὲν Α τῷ Β τινὶ τῷ Β υπάρξει.

'Επὶ δὲ τῶν ἐν μέρει συλλογισμῶν ὅταν μὲν ἀντικειμένως ἀντιστρέφηται τὸ συμπέρασμα ἀναιροῦται ἀμφότεραι αἱ προτάσεις, ὅταν δὲ ἐναντίως οὐδετέρα. οὐ γάρ ἐτι συμβαίνει, καθάπερ ἐν τοῖς καθόλου, ἀναιρεῖν ἐλλειποντὸς τοῦ συμπεράσματος.

κατὰ τὴν ἀντιστροφὴν, ἀλλ' οὐδ' ὅλως ἀναιρεῖν. δεδείχθω γάρ τὸ Α κατὰ τινὸς τοῦ Γ. οὐκοῦν ἂν ληφθῇ τὸ Α μηδενὶ τῷ Γ υπάρχει τῷ δὲ Β τινὶ, τὸ Α τῷ Β τινὶ οὐχ υπάρξει· καὶ εἰ τὸ Α μηδενὶ τῷ Γ τῷ δὲ Β παντὶ, οὐδενὶ τῷ Γ τῷ Β. ὡς ἀναιροῦνται ἀμφότεραι. εἰν δὲ ἐναντίως ἀντιστραφῇ, οὐδετέρα. εἰ γάρ τὸ Α τινὶ τῷ Γ μη υπάρχει τῷ δὲ Β παντὶ, τὸ Β τινὶ τῷ Γ οὐχ υπάρξει. ἀλλ' οὕτω ἀναιρεῖται τὸ εἴ ἄρχησ, εἰνδέχεται γάρ τινι υπάρχει καὶ τινὶ μὴ υπάρχει. τῆς δὲ καθόλου τῆς ΑΒ ὅλως οὐδὲ γίγνεται συλλογισμός· εἰ γάρ τὸ μὲν Α τινὶ τῶν Γ μη υπάρχει τῷ δὲ Β τινὶ υπάρχει, οὐδετέρα καθόλου τῶν προτάσεων. ὁμοίως δὲ καὶ εἰ στερητικὸς ὁ συλλογισμός· εἰ μὲν γάρ ληφθείῃ τὸ Α παντὶ τῷ Γ υπάρχει, ἀναιροῦται ἀμφότεραι, εἰ δὲ τινὶ, οὐδετέρα· ἀπόδειξις δ' ἡ αὐτή.
let it be converted in the sense just described. Then if A does not apply to all C, but applies to all B, B will not apply to all C. And if A does not apply to all C, but B does, A will not apply to all B. Similarly too if the syllogism is negative. For if A applies to some C but to no B, B will not apply to some C; it will not apply absolutely to none. And if A applies to some and B to all C, as was originally assumed, A will apply to some B.

In the case of particular syllogisms, (1) when the conclusion is converted in the contradictory sense, both premisses are refuted; but (2) when it is converted in the contrary sense, neither premiss is refuted. For the result is no longer, as it was in the universal syllogisms, a refutation in which the conclusion after conversion lacks universality; on the contrary, there is no refutation at all. (1) Let it be proved that A is stated of some C. Then if A is assumed to apply to no C but to some B, A will not apply to some B. And if A applies to no C but to all B, B will apply to no C. Thus both premisses are refuted. But (2) if the conclusion is converted in the contrary sense, neither is refuted. For if A does not apply to some C, but applies to all B, B will not apply to some C. Yet the original assumption is not yet refuted, because it is possible to apply to some and yet not to apply to some. As for the universal premiss AB, no syllogism at all can be obtained to refute it; for if A does not and B does apply to some C, neither premiss is universal. Similarly too if the syllogism is negative. For if A is assumed to apply to all C, both premisses are refuted; but if to some C, neither is refuted. The proof is the same as before.
IX. Ἐν δὲ τῷ δευτέρῳ σχῆματι τὴν μὲν πρὸς τῷ μείζονι ἀκρῷ πρότασιν οὐκ ἔστων ανελείν ἑναντίως, ὀποτερωσοῦν τὴς ἀντιστροφῆς γιγνομένης· ἀεὶ γὰρ ἔσται τὸ συμμέτρασμα ἐν τῷ τρίτῳ σχῆματι, καθόλου δὴ οὐκ ἂν ἐν τούτῳ συμπέρασμοι. τὴν δὲ ἑτέραν ὁμοίως ἀναφέρομεν τῇ ἀντιστροφῇ (λέγω δὲ τὸ ὅμοιως, εἰ μὲν ἑναντίως ἀντιπρέπεται, ἑναντίως, εἰ δ' ἀντικειμένως, ἀντικειμένως).

Ὑπαρχέτω γάρ τὸ Α παντὶ τῷ Β τῷ δὲ Γ μηδενις συμμέτρασμα ΒΓ. εἶ αὖ οὖν ληφθῇ τὸ Β παντὶ τῷ Γ ὑπάρχειν καὶ τὸ ΑΒ μένη, τὸ Α παντὶ τῷ Γ ὑπάρχειν γίγνεται γάρ τὸ πρῶτον σχῆμα. εἰ δὲ τὸ Β παντὶ τῷ Γ τὸ δὲ Α μηδενις τῷ Γ, τὸ Α οὐ παντὶ τῷ Β· σχήμα τὸ ἑσχατον. εἶν δ' ἀντικειμένως ἀντιστροφῆς τὸ ΒΓ, ἢ μὲν ΑΒ ὁμοίως δειχθήσεται, ἢ δὲ ΑΓ ἀντικειμένως. εἰ γὰρ τὸ Β τινὶ τῷ Γ τὸ δὲ Α μηδενις τῷ Γ, τὸ Α τινὶ τῷ Β οὐχ ὑπάρχει. τότε εἰ τὸ Β τινὶ τῷ Γ τὸ δὲ Α παντὶ τῷ Β, τὸ Α τινὶ τῷ Γ, ὅτι ἀντικειμένως γίγνεται ὁ συμπέρασμος. ὁμοίως δὲ δειχθήσεται καὶ εἰ ἀνάπαλιν ἔχουν αἱ προτάσεις.

Εἰ δ' ἔστων ἐπί μέρους ὁ συμπέρασμος, ἑναντίως μὲν ἀντιστροφομένου τοῦ συμμετράσματος οὐδετέρα τῶν προτάσεων ἀναφέρεται, καθάπερ οὖν εἴν τῷ πρῶτῳ σχῆματι, ἀντικειμένως δ' ἀμφότεροι. κεῖσθω γὰρ τὸ Α τῷ μὲν Β μηδενὶ ὑπάρχειν τῷ δὲ Γ τινὶ· συμμέτρασμα ΒΓ. εἶν οὖν τεθῇ τὸ Β τινὶ τῷ Γ ὑπάρχειν καὶ τὸ ΑΒ μένη, συμπέρασμα ἔσται ὅτι τὸ Α τινὶ τῷ Γ οὐχ ὑπάρχει. ἀλλ' οὖκ ἀνήρχη- ται τὸ ἐξ ἀρχῆς· εἰδέχεται γάρ τινὶ ὑπάρχειν καὶ

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a 29 a 16; cf. 59 b 15. i.e. refuted.
IX. In the second figure, in whichever sense the conversion is effected, the major premiss cannot be refuted in the contrary sense; for the conclusion will always be obtained in the third figure, and we have seen that in it there is no universal syllogism. The other premiss, however, can be refuted in the same sense as the conversion. By 'in the same sense' I mean that if the conversion is contrary the refutation is in the contrary sense, and if contradictory, in the contradictory sense.

For example, let A apply to all B but to no C. The conclusion is BC. Then if B is assumed to apply to all C, and AB stands, A will apply to all C; for we get the first figure. But if B applies to all C, and A to no C, A will not apply to all B. This is the last figure. If on the other hand BC is converted in the contradictory sense, AB will be proved as before, but AC will be refuted by its contradictory. For if B applies to some C, and A to no C, A will not apply to some B; and again if B applies to some C, and A to all B, A will apply to some C, so that we get a conclusion in the contrary sense. The proof will be similar also if the premisses are in the opposite relation.

If, however, the syllogism is particular, when the conclusion is converted in the contrary sense, neither of the premisses is refuted, just as neither was refuted in the first figure; but when in the contradictory sense, both are refuted. For let it be supposed that A applies to no B but to some C. The conclusion is BC. Then if B is taken to apply to some C, and AB stands, the conclusion will be that A does not apply to some C. But the original premiss is not refuted; for it is possible both to apply to some and not to

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* 59 b 39—60 a 1, 60 a 5-14.
60 a

μὴ υπάρχειν. πάλιν εἰ τὸ Β τινὶ τῷ Γ καὶ τὸ Α τινὶ τῷ Γ, οὐκ ἦσται συλλογισμὸς· οὐδέτερον γὰρ καθόλου τῶν εἰλημένων· ὡς' οὐκ ἀναιρεῖται τὸ ΑΒ. ἐὰν δ' ἀντικειμένως ἀντιστρέφηται, ἀναιροῦνται ἀμφότεραι. εἰ γὰρ τὸ Β παντὶ τῷ Γ τὸ δὲ Α μηδενὶ τῷ Β, οὐδενὶ τῷ Γ τὸ Α· ἢν δὲ τινὶ πάλιν εἰ τὸ Β παντὶ τῷ Γ τὸ δὲ Α τινὶ τῷ Γ, τινὶ τῷ Β τὸ Α. ἡ αὐτὴ δ' ἀπόδεεεις καὶ εἰ τὸ καθόλου κατηγορικὸν.

X. Ἐπὶ δὲ τοῦ τρίτου σχῆματος ὅταν μὲν ἐναντίως ἀντιστρέφηται τὸ συμπέρασμα, οὐδέτερα τῶν προτάσεων ἀναιρεῖται κατ' οὐδένα τῶν συλλογισμῶν, ὅταν δ' ἀντικειμένως, ἀμφότεραι καὶ ἐν ἀπασί. δεδείχθω γὰρ τὸ Α τινὶ τῷ Β υπάρχει, μέσον δ' εἰληφθὼ τὸ Γ, ἐτωσον δὲ καθόλου αἱ προτάσεις. οὐκοῦν εὰν ληφθῇ τὸ Α τινὶ τῷ Β μὴ υπάρχειν τὸ δὲ Β παντὶ τῷ Γ, οὐ γίγνεται συλλογισμὸς τοῦ Α καὶ τοῦ Γ. οὐδ' εἰ τὸ Α τῷ μὲν Β τινὶ μὴ υπάρχει τῷ δὲ Γ παντὶ, οὐκ ἦσται τοῦ Β καὶ τοῦ Γ συλλογισμός. ὅμοιως δὲ δειγματίζεται καὶ εἰ μὴ καθόλου αἱ προτάσεις. ἡ γὰρ ἀμφότερας ἀνάγκη κατὰ μέρος εἶναι διὰ τῆς ἀντιστροφῆς, ἡ τὸ καθόλου πρὸς τῷ ἐλάττων ἄκρω γίγνεται. οὔτω δ' οὐκ ἢν συλλογισμὸς οὔτ' ἐν τῷ πρώτῳ σχῆματι οὔτε ἐν τῷ μέσῳ.

'Εὰν δ' ἀντικειμένως ἀντιστρέφηται, αἱ προτάσεις ἀναιροῦνται ἀμφότεραι. εἰ γὰρ τὸ Α μηδενὶ τῷ Β τὸ δὲ Β παντὶ τῷ Γ, τὸ Α οὐδενὶ τῷ Γ· πάλιν εἰ τὸ Α τῷ μὲν Β μηδενὶ τῷ δὲ Γ παντὶ, τὸ Β οὐδενὶ τῷ Γ. καὶ εἰ ἡ ἑτέρα μὴ καθόλου ἄσαυτως. εἰ

1 ἀντιστρέφηται Philoponus (?), Jenkinson: ἀντιστρέφωται codd.

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apply to some. Again, if B applies to some C and A to some C, there will be no syllogism; for neither of the assumptions is universal. Thus AB is not refuted.

If, however, the conclusion is converted in the contradictory sense, both premisses are refuted. For if B applies to all C and A to no B, A will apply to no C; whereas before it applied to some. Again, if B applies to all C and A to some C, A will apply to some B. The proof will be the same too if the universal statement is affirmative.

X. In the third figure, when the conclusion is converted in the contrary sense, neither premiss is refuted in any syllogism; but when in the contradictory sense, both are refuted in all syllogisms. For let it be proved that A applies to some B, and let C be assumed as the middle term, and let the premisses be universal. Then if A is assumed not to apply to some B, and B to apply to all C, we get no syllogism relating A and C. Again, if A does not apply to some B, but applies to all C, there will be no syllogism relating B and C. There will also be a similar proof if the premisses are not universal; for either both premisses must be particular as the result of conversion, or the universal statement must become attached to the minor extreme; and under these conditions there is no syllogism, as we have seen, either in the first or in the middle figure.

If, however, the conclusion is converted in the contradictory sense, both premisses are refuted. For if A applies to no B, and B to all C, A will apply to no C. Again, if A applies to no B but to all C, B will apply to no C. The same also holds if the other premiss is

\[ \text{a 26 a 17-21, 27 a 4-12.} \]
γάρ τὸ Α μηδενὶ τῷ Β τὸ δὲ Β τινὶ τῷ Γ, τὸ Α
twi τῷ Γ οὐχ ὑπάρξει: εἰ δὲ τὸ Α τῷ μὲν Β μηδενὶ
tῷ δὲ Γ παντὶ, οὐδενὶ τῷ Γ τὸ Β.

'Ομοίως δὲ καὶ εἰ στερητικὸς ὁ συλλογισμὸς.
dedeíxhô γάρ τὸ Α τινὶ τῷ Β μὴ ὑπάρχον, ἐστὶν
dὲ κατηγορικόν μὲν τὸ ΒΓ ἀποφασικὸν δὲ τὸ ΑΓ:
οὕτω γὰρ ἐγίγνετο ὁ συλλογισμός. ὅταν μὲν οὖν
tὸ ἐναντίον λῃθῇ τῷ συμπεράσματι, οὐκ ἔσται

συλλογισμὸς. εἰ γάρ τὸ Α τινὶ τῷ Β τὸ δὲ Β παντὶ
tῷ Γ, οὐκ ἦν συλλογισμὸς τοῦ Α καὶ τοῦ Γ. οὐδὲ
εἰ τὸ Α τινὶ τῷ Β τῷ δὲ Γ μηδενὶ, οὐκ ἦν τοῦ Β
καὶ τοῦ Γ συλλογισμὸς· ὅστε οὐκ ἀναίρεται αἱ

προτάσεις. ὅταν δὲ τὸ ἀντικείμενον, ἀναίρεται.

εἰ γάρ τὸ Α παντὶ τῷ Β καὶ τὸ Β τῷ Γ, τὸ Α
παντὶ τῷ Γ· ἄλλ' οὐδενὶ ὑπήρχεν. πάλιν εἰ τὸ Α
παντὶ τῷ Β τῷ δὲ Γ μηδενὶ, τὸ Β οὐδενὶ τῷ Γ·

ἀλλὰ παντὶ ὑπήρχεν. ὁμοίως δὲ δείκνυται καὶ εἰ
μὴ καθόλου εἰσιν αἱ προτάσεις. γίγνεται γάρ τὸ
ΑΓ καθόλου τε καὶ στερητικὸν, θάτερον δ' ἐπὶ

μέρους καὶ κατηγορικὸν. εἰ μὲν οὖν τὸ Α παντὶ
tῷ Β τὸ δὲ Β τινὶ τῷ Γ, τὸ Α τινὶ τῷ Γ συμβαίνει·

ἀλλ' οὐδενὶ ὑπήρχεν. πάλιν εἰ τὸ Α παντὶ τῷ Β

τῷ δὲ Γ μηδενὶ, τὸ Β οὐδενὶ τῷ Γ· ἐκεῖτο δὲ τινὶ.

εἰ δὲ τὸ Α τινὶ τῷ Β καὶ τὸ Β τινὶ τῷ Γ,

οὕ γίγνεται συλλογισμὸς· οὐδὲ εἰ τὸ Α τινὶ τῷ Β
tῷ δὲ Γ μηδενὶ, οὐδ' οὕτως. ὅστ' ἐκείνως μὲν

ἀναίρεται, οὕτω δ' οὐκ ἀναίρεται αἱ προτάσεις.

Φανερῶν οὖν διὰ τῶν εἰρημένων πάς ἀντιστρεφο-

μένου τοῦ συμπεράσματος ἐν ἐκάστῳ σχήματι

γίγνεται συλλογισμός, καὶ πότ' ἐναντίος τῇ προ-
not universal. For if A applies to no B, and B to some C, A will not apply to some C. And if A applies to no B, but to all C, B will apply to no C.

Similarly too if the syllogism is negative. Let it be proved that A does not apply to some B, and let BC be affirmative and AC negative; for this, as we have seen, is how the syllogism is effected. Then when the contrary of the conclusion is assumed, there will be no syllogism. For if A applies to some B, and B to all C, there is no syllogism, as we have seen, relating A and C. Also if A applies to some B, but to no C, there is no syllogism, as we have seen, relating B and C. Thus the premisses are not refuted. But when the contradictory of the conclusion is assumed, they are refuted. For if A applies to all B, and B to C, A will apply to all C; whereas before it applied to none. Again, if A applies to all B, but to no C, B will apply to no C; whereas before it applied to all. There is a similar proof also if the premisses are not universal; for AC becomes both universal and negative, and the other statement particular and affirmative. Thus if A applies to all B, and B to some C, it follows that A applies to some C; whereas before it applied to none. Again, if A applies to all B, but to no C, B will apply to no C; but the assumption was that it applies to some. If, however, A applies to some B, and B to some C, we get no syllogism; nor do we if A applies to some B but to no C. Thus in the former case the premisses are refuted, but in the latter they are not.

Thus it is evident from the foregoing account (1) how syllogism is effected in each figure when the conclusion is converted, (2) in what circumstances the

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Summary of the results obtained in chs. viii.-x.

(2) in negative syllogisms.

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26 a 30-36. 27 b 6-8.
τάσει καὶ πότ᾽ ἀντικειμένως, καὶ ὅτι ἐν μὲν τῷ πρώτῳ σχήματι διὰ τοῦ μέσου καὶ τοῦ ἐσχάτου γίγνονται οἱ συλλογισμοί, καὶ ἡ μὲν πρὸς τῷ ἐλάττωνι ἀκρῷ ἀεὶ διὰ τοῦ μέσου ἀναιρεῖται, ἡ δὲ πρὸς τῷ μεῖζον διὰ τοῦ ἐσχάτου· ἐν δὲ τῷ δεύτερῳ διὰ τοῦ πρώτου καὶ τοῦ ἐσχάτου, καὶ ἡ μὲν πρὸς τῷ ἐλάττωνι ἀκρῷ ἀεὶ διὰ τοῦ πρώτου σχήματος, ἡ δὲ πρὸς τῷ μεῖζον διὰ τοῦ ἐσχάτου· ἐν δὲ τῷ τρίτῳ διὰ τοῦ πρώτου καὶ διὰ τοῦ μέσου, καὶ ἡ μὲν πρὸς τῷ μεῖζον διὰ τοῦ πρώτου ἀεὶ, ἡ δὲ πρὸς τῷ ἐλάττωνι διὰ τοῦ μέσου.

 XI. Τί μὲν οὖν ἔστι τὸ ἀντιστρέφειν καὶ πῶς ἐν ἐκάστῳ σχήματι καὶ τίς γίγνεται συλλογισμὸς, φανερὸν.

Ὁ δὲ διὰ τοῦ ἀδύνατου συλλογισμὸς δείκνυται μὲν ὅταν ἡ ἀντίφασις τεθῇ τοῦ συμπεράσματος καὶ προσληφθῇ ἀλλή πρότασις, γίγνεται δὲ ἐν ἀπασί τοῖς σχήμασιν· ὁμοιον γὰρ ἐστὶ τῇ ἀντιστροφῇ, πλὴν διαφέρει τοσοῦτον ὅτι ἀντιστρέφεται μὲν γεγενημένου συλλογισμοῦ καὶ εἰλημμένων ἀμφοῖν τῶν προτάσεων, ἀπάγαγεται δ᾽ εἰς ἀδύνατον ὅτι προομολογηθέντος τοῦ ἀντικειμένου πρότερον, ἀλλὰ φανερὸν οντὸς ὅτι ἀληθές· οἱ δ᾽ ὁροὶ ὁμοιῶς ἐχοῦσιν ἐν ἀμφοῖν, καὶ ἡ αὐτὴ λήψις ἀμφοτέρων· οἶνον εἰ τὸ Α τῷ Β παντὶ ὑπάρχει, μέσον δὲ τὸ Γ, ἐὰν ὑποτεθῇ τὸ Α ἢ μὴ παντὶ ἢ μηδενὶ τῷ Β ὑπάρχει, τῷ δὲ Γ παντὶ, ὅπερ ἢν ἀληθές, ἀνάγκη τοῦ Γ τῷ Β ἢ μηδενὶ ἢ μὴ παντὶ ὑπάρχει· τούτῳ δ᾽ ἀδύνατον, ὡστε ἰεύθος τὸ ὑποτεθέν ἀληθές ἃρα τό ἀντικείμενον ὁμοιῶς δὲ καὶ ἐπὶ τῶν άλλων

* i.e. the conclusion whose contradictory is assumed as a premis for the process of reduction.
conclusion is the contrary and in what the contradictory of the original premiss, and (3) that in the first figure the syllogisms are effected by means of the middle and last figures, and the minor premiss is always refuted by the middle figure and the major by the last; in the second figure they are effected by the first and the last, and the minor premiss is always refuted by the first and the major by the last; and in the third figure the syllogisms are effected by the first and middle figures, and the major premiss is always refuted by the first and the minor by the middle figure.

XI. Thus it is evident what conversion is, and how it is effected in each figure, and what the resulting syllogism is.

A syllogism *per impossibile* is proved by positing the contradictory of the conclusion and assuming an additional premiss. It is effected in all three figures. It is similar to conversion, but differs from it to this extent: that whereas we convert after a syllogism has been effected and both premisses have been assumed, when we reduce *ad impossibile* the contradictory statement is not first explicitly admitted, but is manifestly true. The terms, however, are similarly related in both, and the method of assumption is the same for both. *E.g.*, if A applies to all B, and C is the middle term, if we suppose that A does not apply to all or applies to none of B, but applies to all C, which is *ex hypothesi* true, C must apply to none or not apply to all of B. But this is impossible; therefore the supposition was false. Thus the opposite is true. Similarly too in the other figures; *i.e.* the contradictory.
σχημάτων· διὸ γὰρ ἀντιστροφὴν δέχεται, καὶ τὸν
dιὰ τοῦ ἀδυνάτου συλλογισμόν.

Τὰ μὲν οὖν ἄλλα προβλήματα πάντα δείκνυται
διὰ τοῦ ἀδυνάτου ἐν πάσι τοῖς σχήμασι, τὸ δὲ
καθόλου κατηγορικὸν ἐν μὲν τῷ μέσῳ καὶ τῷ τρίτῳ
dείκνυται, ἐν δὲ τῷ πρῶτῳ οὐ δείκνυται. ὑποκεί-
σθω γὰρ τὸ Α τῷ Β μὴ παντὶ ἡ μηδενὶ υπάρχει, καὶ
προσειλήφθω ἀλλὰ πρότασις ὑποτερωθεῖν, εἰτε
τῷ Α παντὶ υπάρχει τῷ Γ εἴτε τὸ Β παντὶ τῷ Δ·
οὔτω γὰρ ἀν εἰτε τὸ πρῶτον σχῆμα. εἰ μὲν οὖν
ὑπόκειται μὴ παντὶ υπάρχει τῷ Α τῷ Β, οὐ γε-
γνεται συλλογισμὸς ὑποτερωθεῖν τῆς προτάσεως
λαμβανομένης, εἰ δὲ μηδενὶ, ὅταν μὲν ἡ ΒΔ προσ−
lήφθη, συλλογισμὸς μὲν ἐσται τοῦ ψεύδους, οὐ
dείκνυται δὲ τὸ προκείμενον. εἰ γὰρ τὸ Α μηδενὶ
tῷ Β τὸ δὲ Β παντὶ τῷ Δ, τὸ Α οὐδενὶ τῷ Δ.

Τὸ δέ γε τινὶ καὶ τὸ μηδενὶ καὶ μὴ παντὶ δεί−
kυται. ὑποκείσθω γὰρ τὸ Α μηδενὶ τῷ Β υπάρ−
χει, τὸ δὲ Β εἰλήφθω παντὶ ἡ τινὶ τῷ Γ. οὐκοῦν
ἀνάγκη τὸ Α μηδενὶ ἡ μὴ παντὶ τῷ Γ υπάρχειν.
tούτῳ δὲ ἀδύνατον (ἐστώ γὰρ ἀληθὲς καὶ φανερὸν
ὅτι παντὶ υπάρχει τῷ Γ τῷ Α), ὡστε εἰ τούτῳ
ψεύδος, ἀνάγκη τὸ Α τινὶ τῷ Β υπάρχειν. εἰ δὲ
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for all examples which admit of conversion admit also of inference *per impossibile*.

All other propositions are demonstrable *per impossibile* in all three figures, but the universal affirmative, though demonstrable in the middle and third figures, is not demonstrable in the first. Let us suppose that *A* does not apply to all, or applies to none, of *B*; and let us also assume another premiss relating to either term, either that *C* applies to all *A* or that *B* applies to all *D*; for in this way we shall have the first figure. Now if we have supposed that *A* does not apply to all *B*, we get no syllogism, to whichever of the two terms the assumed premiss refers; but if we have supposed that *A* applies to no *B*, (1) when *BD* is further assumed, although we can argue to a false conclusion, the point to be proved is not demonstrated. For if *A* applies to no *B*, and *B* to all *D*, *A* will apply to no *D*. Let this be impossible. Then it is false that *A* applies to no *B*. But if 'A applies to no B' is false, it does not follow that 'A applies to all B' is true. (2) And if *CA* is further assumed, we get no syllogism, just as we get none when *A* is assumed not to apply to all *B*. Thus it is evident that the universal affirmative proposition is not demonstrable *per impossibile* in the first figure.

The universal negative proposition, however, and the particular, whether affirmative or negative, are demonstrable. Let *A* be assumed to apply to no *B*, and let *B* be taken to apply to all or some of *C*. Then it necessarily follows that *A* applies to none, or does not apply at all, of *C*. But this is impossible (for let it be true and evident that *A* applies to all *C*); then if this is false, *A* must apply to some *B*.

1 ἔστω...τὸ *A* uncinis interpunxit Waitz.
πρὸς τῷ Α ληφθῇ ἡ ἑτέρα πρότασις, οὐκ ἔσται συλλογισμός. οὐδὲ ὅταν τὸ ἀναντίον τῷ συμπεράσματί ὑποτεθῇ, οἷον τὸ τῷ μὴ ὑπάρχειν. φανερὸν οὖν ὅτι τὸ ἀντικείμενον ὑποθέτεσθαι.

Πάλιν ὑποκείσθω τῷ Α τῷ τῷ Β ὑπάρχειν, εἰλήφθω δὲ τῷ Γ παντὶ τῷ Α. ἀνάγκη οὖν τῷ Γ τῷ τῷ Β ὑπάρχειν. τοῦτο δ᾽ ἔστω ἀδύνατον, ὡστε ψεύδοσ τὸ ὑποτεθέν· εἰ δ᾽ οὕτως, ἀληθὲς τὸ μηδενεύον μεν ὑπάρχειν. ὁμοίως δὲ καὶ ἐὰν ὑποθετήσεις ἐλήφθη τῷ ΘΑ. εἰ δ᾽ ἐπὶ πρὸς τῷ Β εἰληφθείη πρότασις, οὐκ ἔσται συλλογισμός. εὰν δὲ τὸ ἀναντίον ὑποτεθῇ, εἰ δ᾽ οὐθὲν ἐστὶ τὸ ἀντικείμενον ὑποθετέον, τὸ τῷ τῷ Β ὑπάρχειν. ὅτι τὸ τῷ Β ὑπάρχειν. τοῦτο δ᾽ ἔστω ἀδύνατον, ὥστε φεύδοσ τὸ παντὶ τῷ Β τῷ Α ὑπάρχειν, καὶ τῷ Γ τῷ Α εἰλήφθῳ παντὶ. οὕτως ἀνάγκη τῷ Γ παντὶ τῷ Β ὑπάρχειν. τοῦτο δ᾽ ἀδύνατον, ὡστε φεύδοσ τὸ παντὶ τῷ Β τῷ Α ὑπάρχειν. ἀλλ' οὕτως γε ἀναγκαίοις, εἰ μὴ παντὶ, μηδενεύον μεν ὑπάρχειν. ὁμοίως δὲ καὶ ἐὰν πρὸς τῷ Β ἔληφθῇ ἡ ἑτέρα πρότασις· συλλογισμός μὲν γὰρ ἔσται καὶ τὸ ἀδύνατον, οὐκ ἀναίρεται δ᾽ ἡ ὑπόθεσις, ὡστε τὸ ἀντικείμενον ὑποθέτευον. Πρὸς δὲ τὸ μὴ παντὶ δεῖχαι ὑπάρχον τῷ Β τῷ Α ὑποθέτευον παντὶ ὑπάρχειν· εἰ γὰρ τῷ Α παντὶ τῷ Β καὶ τῷ Γ παντὶ τῷ Α, τῷ Γ παντὶ τῷ Β· ὡστ᾽ εἰ τοῦτο ἀδύνατον, ψεύδοσ τὸ ὑποτεθέν. ὁμοίως δὲ καὶ εἰ πρὸς τῷ Β ἐλήφθῃ ἡ ἑτέρα πρότασις· καὶ εἰ στερητικὸν ήν τῷ ΘΑ ὡσαύτως· καὶ γὰρ οὕτως γίγνεται συλλογισμός. εὰν δὲ πρὸς τῷ Β η τῷ στερητικόν, οὐδὲν δείκνυται. εὰν δὲ μὴ παντὶ
But if the other premiss assumed is attached to A, there will be no syllogism; nor when the contrary of the conclusion is assumed, viz., that A does not apply to some B. Thus it is evident that we must assume the contradictory of the conclusion.

Again, let it be supposed that A applies to some B, and let C be assumed to apply to all A. Then C must apply to some B. Let this be impossible, so that the supposition is false. But if this is so, it is true that A applies to no B. Similarly too if the assumed premiss CA had been negative. But if the premiss attached to B is assumed, there will be no syllogism. If, however, the contrary proposition is assumed, there will be a syllogism and an argument per impossibile, but the proposition is not demonstrable. Let it be supposed that A applies to all B, and let C be assumed to apply to all A. Then C must apply to all B. But this is impossible; and so it is false that A applies to all B. But it is not ipso facto necessary that if it does not apply to all, it applies to none. Similarly too supposing that the other premiss assumed is attached to B; for there will be a syllogism and an argument per impossibile, but the hypothesis is not refuted. Therefore we must assume the contradictory of the conclusion.

To prove that A does not apply to all B we must suppose that it applies to all. For if A applies to all B, and C to all A, C will apply to all B; so that if this is impossible, the supposition is false. Similarly too if the other premiss had been attached to B. The same also holds if CA has been taken as negative; for in this way too we get a syllogism. But if the negative proposition is attached to B, there is no demonstration. If, however, we suppose, not that
ΑΡΙΣΤΟΤΕΛΕΣ

61 b ἀλλὰ τινὶ ὑπάρχειν ὑποτεθῇ, οὐ δείκνυται ὅτι οὐ παντὶ ἁλλʼ ὅτι οὐδενὶ. εἶ γὰρ τὸ Α τινὶ τῷ Β τὸ 
62 a δὲ Γ παντὶ τῷ Α, τινὶ τῷ Β τὸ Γ ὑπάρξει. εἰ οὖν 
tοὐτʼ ἀδύνατον, ψεῦδος τὸ τινὶ ὑπάρχειν τῷ Β 
tὸ Α, ὦςτʼ ἀληθὲς τὸ μηδενὶ. τούτου δὲ δει-
χθέντος προσαναραίται τὸ ἀληθὲς· τὸ γὰρ Α τῷ Β 
tινὶ μὲν ὑπῆρχε, τινὶ δʼ οὐχ ὑπῆρχεν. ἐτὶ οὐ παρὰ 
τὴν ὑπόθεσιν συμβαίνει τὸ ἀδύνατον· ψεῦδος γὰρ 
ἀν εἰ, εἰπερ εξ ἀληθῶν μὴ ἔστι ψεῦδος συλλογίσα-
σθαι· ἡν δʼ ἐστὶν ἀληθὲς, ὑπάρχει γὰρ τὸ Α τινὶ 
tῷ Β· ὦςτʼ οὐχ ὑποθετεῖν τινὶ ὑπάρχειν, ἀλλὰ 
pαντὶ. ὁμοίως δὲ καὶ εἰ τινὶ μη ὑπάρχον τῷ Β τὸ 
10 Α δεικνύομεν· εἶ γὰρ ταῦτὸ τὸ τινὶ μη ὑπάρχειν 
καὶ μὴ παντὶ ὑπάρχειν, ἢ αὐτὴ ἀμφοῖν ἀπόδειξις. 

Φανερὸν οὖν ὅτι οὐ τὸ ἐναντίον ἀλλὰ τὸ ἀντικεί-
μενον ὑποθετεῖν ἐν ἀπασὶ τοῖς συλλογισμοῖς· οὕτω 
γὰρ τὸ ἀναγκαῖον ἐσται καὶ τὸ ἀξίωμα ἐνδοξοῦν. εἰ 
γὰρ κατὰ παντὸς ἡ φάσις ἡ ἀπόφασις, δειχθέντος 
15 ὅτι οὐχ ἡ ἀπόφασις, ἀνάγκη τὴν κατάφασιν ἀλη-
θεύεσθαι· πάλιν εἰ μὴ τίθησιν ἀληθεύεσθαι τὴν 
κατάφασιν, ἐνδοξοῦ τὸ ἀξίωμα τὴν ἀπόφασιν. τὸ 
δʼ ἐναντίον οὐδετέρως ἁμοττει ἀξιοῦν οὕτε γὰρ 
ἀναγκαῖον, εἰ τὸ μηδενὶ ψεῦδος, τὸ παντὶ ἀληθὲς, 
οὔτʼ ἐνδοξοῦ ὡς εἰ θάτερον ψεῦδος, ὅτι θάτερον 
ἀληθὲς.

20 XII. Φανερὸν οὖν ὅτι ἐν τῷ πρώτῳ σχῆματι τὰ
A applies to all, but that it applies to some B, what is proved is not that it does not apply to all, but that it applies to none. For if A applies to some B, and C to all A, C will apply to some B. Then if this is impossible, it is false that A applies to some B, and therefore true that it applies to none. But by this proof the truth is refuted too; for the supposition was that A applies to some and also does not apply to some B. Moreover the impossibility does not result from the hypothesis; for if it did, the hypothesis would be false, since a false conclusion cannot be drawn from true premisses; but actually it is true, because A applies to some B. Thus we must suppose, not that A applies to some B, but that it applies to all. Similarly too if we should try to prove that A does not apply to some B; for since 'not to apply to some' and 'not to apply to all' are the same, the proof will be the same for both.

Thus it is evident that in all syllogisms we must suppose not the contrary but the contradictory of the conclusion; for in this way we shall secure logical necessity, and our claim will be generally admitted. For if either the assertion or the negation of a given predicate is true of every given subject, then when it is proved that the negation is not true, the affirmation must be true; and on the other hand if it is not maintained that the affirmation is true, the claim that the negation is true will be generally admitted. But the claim that the contrary statement is true meets neither requirement; for it is not a necessary consequence that if 'it applies to none' is false, 'it applies to all' is true, nor is it generally admitted that if the one is false the other is true.

XII. Thus it is evident that in the first figure, in all cases the contradictory of the conclusion must be assumed.
μὲν ἄλλα προβλήματα πάντα δείκνυται διὰ τοῦ ἀδυνάτου, τὸ δὲ καθάλον καταφατικὸν οὐ δείκνυται. 

ἐν δὲ τῷ μέσῳ καὶ τῷ ἐσχάτῳ καὶ τοῦτο δείκνυται. 

κείσθω γὰρ τὸ Α μὴ παντὶ τῷ Β υπάρχειν, εἰλήφθω δὲ τῷ Γ παντὶ υπάρχειν τὸ Α. οὐκοῦν εἰ τῷ μὲν 

20 Β μὴ παντὶ τῷ δὲ Γ παντὶ, οὐ παντὶ τῷ Β τὸ Γ. 

τοῦτο δὲ ἀδύνατον έστω γὰρ φανερὸν ὅτι παντὶ 

τῷ Β υπάρχει τὸ Γ, ὥστε ψεύδος τὸ υποκείμενον. 

ἀληθὲς ἄρα τὸ παντὶ υπάρχειν. εάν δὲ τὸ ἐναντίον 

ὑποτεθη, συλλογισμὸς μὲν ἦσται καὶ τὸ ἀδύνατον, 

οὐ γὰρ τὸ Α μηδὲν τῷ Β τῷ δὲ Γ παντὶ, εὖλαὶ τῷ Bitty selva 

ἔστω γὰρ φανερὸν ὅτι παντὶ 

τῷ Β υπάρχει τὸ Γ, ὥστε ψεύδος τὸ μηδενὶ ὑπάρχειν. ἀλλ' 

οὐκ εἰ τοῦτο ψεύδος τὸ παντὶ ἀληθὲς. 

"Ὅτε δὲ τινὶ τῷ Β υπάρχει τὸ Α, υποκείσθω τὸ Α 

μηδενὶ τῷ Β υπάρχειν, τῷ δὲ Γ παντὶ υπαρχέτων. 

25 ἀνάγκη οὖν τὸ Γ μηδενὶ τῷ Β· ὥστ' εἰ τοῦτ' 

ἀδύνατον, ἀνάγκη τὸ Α τινὶ τῷ Β υπάρχειν. εάν δ' 

ὑποτεθη τῷ μὴ υπάρχειν, ταῦτ' ἦσται ἀπερ ἐπὶ 

τοῦ πρώτου σχήματος. 

Πάλιν ὑποκείσθω τὸ Α τινὶ τῷ Β υπαρχείν, τῷ 

20 δὲ Γ μηδενὶ υπαρχέτων. ἀνάγκη οὖν τὸ Γ τινὶ 

τῷ Β μὴ υπάρχειν. ἀλλὰ παντὶ υπήρχειν, ἦστε 

ψεύδος τὸ υποτεθὲν οὐδενὶ ἄρα τῷ Β τὸ Α υπάρξει. 

"Ὅτε δ' οὐ παντὶ τὸ Α τῷ Β, υποκείσθω παντὶ 

35 υπάρχειν, τῷ δὲ Γ μηδενὶ. ἀνάγκη οὖν τὸ Γ 

μηδενὶ τῷ Β υπάρχειν. τοῦτο δ' ἀδύνατον, ἦστε 

ἀληθὲς τῷ μὴ παντὶ υπάρχειν. φανερὸν οὖν ὅτι 


1 ταῦτ' ἦσται Jenkinson: ταὐτ' ἦσται.
whereas all other propositions are demonstrable per impossibile, the universal affirmative is not so demonstrable. In the middle and last figures, however, even this is demonstrable. Let A be supposed not to apply to all B, and let it be assumed that A applies to all C. Then if it does not apply to all B, but applies to all C, C will not apply to all B. But this is impossible. For let it be evident that C applies to all B, so that the supposition is false. Then it is true that A applies to all B. But if we adopt the contrary hypothesis, although there will be a syllogism and an argument per impossibile, the proposition is not demonstrable. For if A applies to no B, but to all C, C will apply to no B. But this is impossible; and so it is false that A applies to no B. But it does not follow that if this is false, it is true that A applies to all B.

When A applies to some B, let it be supposed that A applies to no B, but let it apply to all C. Then C must apply to no B. Thus if this is impossible, A must apply to some B. If it is supposed not to apply to some, we shall have the same result as in the first figure.

Again, let A be supposed to apply to some B, but let it apply to no C. Then necessarily C does not apply to some B. But originally it applied to all, and so the supposition is false. Therefore A will apply to no B.

When A does not apply to all B, let it be supposed to apply to all B, but to no C. Then C must apply to no B. But this is impossible; and so it is true that A does not apply to all B. Thus it is evident

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\[\text{a 61 b 39 ff.}\]
πάντες οἱ συλλογισμοὶ γίγνονται διὰ τοῦ μέσου σχήματος.

6 XIII. Ὡμοίως δὲ καὶ διὰ τοῦ ἐσχάτου. κείσθω γὰρ τὸ Α τινὶ τῷ Β μὴ ὑπάρχειν τὸ δὲ Γ παντὶ τὸ ἄρα Α τινὶ τῷ Γ οὐχ ὑπάρχει. εἰ οὖν τοῦτо ἄδυνατον, ψεύδος τὸ τινὶ μὴ ὑπάρχειν, ἄστο ἀληθὲς τὸ παντὶ. ἕαν δ᾽ ὑποτεθῇ μηδὲν ὑπάρχειν, συλλογισμὸς μὲν ἔσται καὶ τὸ ἄδυνατον, οὐ δεικνυται δὲ τὸ προτεθέν. ἕαν γὰρ τὸ ἐναντίον ὑποτεθῇ, ταῦτα ἔσται ἀπερ ἐπὶ τῶν προτερον. ἀλλὰ πρὸς τὸ τινὶ ὑπάρχειν αὐτὴ ληπτεά ἡ ὑπόθεσις. εἰ γὰρ τὸ Α μηδενὶ τῷ Β τὸ δὲ Γ τινὶ τῷ Β, τὸ Α οὐ παντὶ τῷ Γ. εἰ οὖν τοῦτο ψεύδος, ἀληθὲς τὸ Α τινὶ τῷ Β ὑπάρχειν.

10 Ὅστε δ᾽ οὐδενὶ τῷ Β ὑπάρχει τὸ Α, ὑποκείσθω τινὶ ὑπάρχειν, εὐλίθῳ δὲ καὶ τὸ Γ παντὶ τῷ Β ὑπάρχον. οὐκοῦν ἀνάγκη τῷ Γ τινὶ τῷ Α ὑπάρχειν. ἀλλὰ οὐδενὶ ὑπάρχειν, ἂστε ψεύδος τινὶ τῷ Β ὑπάρχειν τὸ Α. εἰν δ᾽ ὑποτεθῇ παντὶ τῷ Β ὑπάρχειν τὸ Α, οὐ δεικνυται τὸ προτεθέν, ἀλλὰ πρὸς τὸ μὴ παντὶ ὑπάρχειν αὐτῇ ληπτεά ἡ ὑπόθεσις. εἰ γὰρ τὸ Α παντὶ τῷ Β καὶ τὸ Γ τινὶ τῷ Β, τὸ Α ὑπάρχει τινὶ τῷ Γ τούτο δὲ οὐκ ἢν, ὡστε ψεύδος τὸ παντὶ ὑπάρχειν. εἰ δ᾽ οὕτως, ἀληθὲς τὸ μὴ παντὶ. εἰν δ᾽ ὑποτεθῇ τινὶ ὑπάρχειν, ταῦτα ἔσται καὶ ἐπὶ τῶν προειρημένων.

15 Φανερὸν οὖν ὅτι ἐν ἄπασι τοῖς διὰ τοῦ ἄδυνατου συλλογισμοῖς τὸ ἀντικείμενον ὑποθετεῖν. δῆλον δὲ ταῦτα ἔσται n, Jenkinson: ταῦτα ἔσται.

* i.e. that all types of proposition can be proved per impossible.
that all the syllogisms can be effected by the second figure.ª

XIII. Similarly they can all be effected by means of the last figure. Let A be supposed not to apply to some B, but to apply to all C. Then A does not apply to some C. Then if this is impossible, it is false that A does not apply to some B, and so it is true that it applies to all. But if it is supposed to apply to none, although there will be a syllogism and an argument *per impossibile*, the proposition is not demonstrable; for if the contrary hypothesis is adopted, we shall have the same result as before.ª This hypothesis must be chosen to prove that A applies to some B. For if A applies to no B, and C to some B, A will not apply to all C. Then if this is false, it is true that A applies to some B.

When A applies to no B, let it be supposed to apply to some; and let C also be assumed to apply to all B. Then A must apply to some C. But originally it applied to none; and so it is false that A applies to some B. If A is supposed to apply to all B, the proposition is not demonstrable; this hypothesis must be chosen to prove that A does not apply to all. For if A applies to all B, and C to some B, A applies to some C. But before this was not so; therefore it is false that A applies to all B; and if this is so, it is true that it does not apply to all. But if it is supposed to apply to some, the result will be the same as those which we have described above.ª

Thus it is evident that in all syllogisms *per impossibile* it is the contradictory assumption that must

ª 62 a 28 ff.
ª 61 b 39. The case is not treated separately under the second figure.
καὶ ὅτι ἐν τῷ μέσῳ σχῆματι δείκνυται πῶς τὸ καταφατικὸν καὶ ἐν τῷ ἐσχάτῳ τὸ καθόλου.

XIV. Διαφέρει ἡ εἰς τὸ ἀδύνατον ἀπόδειξις τῆς ὃ δεικτικῆς τῷ τιθέναι ὃ βούλεται ἀναφερέιν ἀπάγουσα εἰς ὁμολογούμενον ψεύδος. ἡ δὲ δεικτικὴ ἀρχεται ἐξ ὁμολογούμενων θέσεων. Λαμβάνουσι μὲν οὖν ἀμφότεροι δύο προτάσεις ὁμολογουμένας ἀλλ' ἡ μὲν ἐξ ὁν ὁ συλλογισμός, ἡ δὲ μίαν μὲν τούτων μίαν δὲ τὴν ἀντίφασιν τοῦ συμπέρασματος. καὶ ἐνθα μὲν οὐκ ἀνάγκη γνώριμον εἶναι τὸ συμπέρασμα, οὐδὲ προϋπολαμβάνειν ὡς ἐστι ἡ οὖν ἐνθα δὲ ἀνάγκη ὡς οὐκ ἐστιν. διαφέρει δ' οὐδὲν φάσιν ἡ ἀπόφασιν εἶναι τὸ συμπέρασμα, ἀλλ' ὁμοιός ἔχει περὶ ἀμφοῖν.

Ἀπαν δὲ τὸ δεικτικὸς περαινόμενον καὶ διὰ τοῦ ἀδυνάτου διεισθήσεται καὶ τὸ διὰ τοῦ ἀδυνάτου δεικτικὸς, διὰ τῶν αὐτῶν ὁρων. ὅταν μὲν γὰρ ὁ συλλογισμός ἐν τῷ πρώτῳ σχῆματι γένηται, τὸ ἀληθὲς ἔσται ἐν τῷ μέσῳ ἡ τῷ ἐσχάτῳ τὸ μὲν στερητικὸν ἐν τῷ μέσῳ τὸ δὲ κατηγορικὸν ἐν τῷ ἐσχάτῳ. ὅταν δ' ἐν τῷ μέσῳ ἡ ὁ συλλογισμός, τὸ ἀληθὲς ἐν τῷ πρῶτῳ ἐπὶ πάντων τῶν προβλημάτων. ὅταν δ' ἐν τῷ ἐσχάτῳ ὁ συλλογισμός, τὸ ἀληθὲς ἐν τῷ πρῶτῳ καὶ τῷ μέσῳ, τὰ μὲν καταφατικά ἐν τῷ πρῶτῳ τὰ δὲ στερητικὰ ἐν τῷ μέσῳ.

Ἐστω γὰρ δεδειγμένον τὸ Α μηδὲν ἡ μὴ παντὶ τῷ Β διὰ τοῦ πρῶτου σχῆματος. οὐκοῦν ἡ μὲν ὑπόθεσις ἦν τοῖς αὐτοῖς δὲ σχῆμασιν υπόγειον.
be made. It is also clear that in a sense the affirmative proposition is demonstrable in the middle figure and the universal in the last figure.\(^a\)

XIV. Proof *per impossibile* differs from ostensive proof in that the former posits that which it intends to refute by reducing it to an admitted fallacy, whereas the latter proceeds from admitted positions. Both indeed assume two admitted premisses; but whereas the latter assumes those from which the syllogism proceeds, the former assumes one of these and one which is the contradictory of the conclusion; and in the latter the conclusion need not be known, nor need it be presupposed to be true or not; but in the former it must be presupposed not to be true. It makes no difference, however, whether the conclusion is affirmative or negative; the procedure is the same in both cases.

Every proposition which is established ostensively can also be proved *per impossibile*, and *vice versa*, by means of the same terms. For when the syllogism \(b\) is effected in the first figure, the truth \(c\) will appear in the middle or last figure: the negative in the middle and the affirmative in the last. When the syllogism is in the middle figure, the truth will appear in the first figure with respect to all propositions. When the syllogism is in the last figure, the truth will appear in the first or the middle: affirmative in the first, negative in the middle figure.

For example, let it be proved by the first figure Reduction by *Baroco* that A applies to none, or does not apply to all, of B. Then the hypothesis was that A applies to some B,

\(a\) 62 a 23-37, b 5-9, 14-18.
(b) *i.e.* the reduction *ad impossibile*.
(c) *i.e.* the ostensive syllogism.
ἐλαμβάνετο τῷ μὲν Α παντὶ υπάρχειν τῷ δὲ Β οὐδενί· οὐτώ γὰρ ἐγίγνετο ὁ συλλογισμός καὶ τὸ ἀδύνατον. τοῦτο δὲ τὸ μέσον σχῆμα, εἰ τὸ Γ τῷ μὲν Α παντὶ τῷ δὲ Β μηδενὶ υπάρχει καὶ φανερὸν ἐκ τούτων ὅτι οὐδενί τῷ Β υπάρχει τὸ Α.

15 Ὅμοιως δὲ καὶ εἰ μὴ παντὶ δεδεικται υπάρχειν. η μὲν γὰρ υπόθεσις ἐστι παντὶ υπάρχειν, τὸ δὲ Γ ἐλαμβάνετο τῷ μὲν Α παντὶ τῷ δὲ Β οὐ παντὶ. καὶ εἰ στερητικὸν λαμβάνοιτο τὸ ΓΑ ωσαύτωσ· καὶ γὰρ οὕτω γίγνεται τὸ μέσον σχῆμα.

Πάλιν δεδείχθη τινὶ υπάρχων τῷ Β τὸ Α. η μὲν

20 οὐν υπόθεσις μηδενὶ υπάρχειν, τὸ δὲ Β ἐλαμβάνετο παντὶ τῷ Γ υπάρχειν καὶ τὸ Α η παντὶ η τινὶ τῷ Γ· οὕτω γὰρ ἐσται τὸ ἀδύνατον. τοῦτο δὲ τὸ ἐσχατον σχῆμα, εἰ τὸ Α καὶ τὸ Β παντὶ τῷ Γ· καὶ φανερὸν ἐκ τούτων ὅτι ἀνάγκη τὸ Α τινὶ τῷ Β υπάρχειν. ομοίως δὲ καὶ εἰ τινὶ τῷ Γ ληθειν ὑπάρχοι τὸ Β η τὸ Α.

25 Πάλιν εὖ τῷ μέσῳ σχήματι δεδείχθω τὸ Α παντὶ τῷ Β υπάρχοιν. οὐκοῦν η μὲν υπόθεσις ην μη παντὶ τῷ Β τὸ Α υπάρχειν, εἴληπται δὲ τὸ Α παντὶ τῷ Γ καὶ τὸ Γ παντὶ τῷ Β· οὐτω γὰρ ἐσται τὸ ἀδύνατον. τοῦτο δὲ τὸ πρῶτον σχῆμα, τὸ Α

30 παντὶ τῷ Γ καὶ τὸ Γ παντὶ τῷ Β. ομοίως δὲ καὶ εἰ τινὶ δεδεικται υπάρχοιν. η μὲν γὰρ υπόθεσις ην μηδενὶ τῷ Β τὸ Α υπάρχειν, εἴληπται δὲ τὸ Α παντὶ τῷ Γ καὶ τὸ Γ τινὶ τῷ Β. εἰ δὲ στερητικὸς ο συλλογισμός, η μὲν υπόθεσις τὸ Α τινὶ τῷ Β υπάρχειν, εἴληπται δὲ τὸ Α μηδενὶ τῷ Γ καὶ τὸ Γ

35 παντὶ τῷ Β, ὡστε γίγνεται τὸ πρῶτον σχῆμα. καὶ εἰ μη καθόλου ο συλλογισμός, ἀλλὰ τὸ Α τινὶ τῷ Β δεδεικται μη υπάρχειν, ωσαύτως. υπόθεσις μὲν

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and C was assumed to apply to all A but to no B; this was how the syllogism and the argument per impossibile were effected. But this is the middle figure, if C applies to all A but to no B; and it is evident from these premisses that A applies to no B.

Similarly too if it has been proved not to apply to all. The hypothesis is that it applies to all, and it was assumed that C applies to all A but not to all B. The same also holds supposing that CA is taken as negative; for in this case too we get the middle figure.

Again, let it be proved that A applies to some B. Then the hypothesis is that it applies to none, and B was assumed to apply to all C and A to all or some of C; for it is in this way that the proof per impossibile will result. This is the last figure, if A and B apply to all C; and it is evident from these premisses that A must apply to some B. Similarly too supposing that B or A is taken to apply to some C.

Again in the second figure let it be proved that A applies to all B. Then the hypothesis was that A does not apply to all B, and the assumptions were that A applies to all C and C to all B; for it is in this way that the proof per impossibile will result. This is the first figure, when A applies to all C and C to all B. Similarly too if A has been proved to apply to some B. The hypothesis was that A applies to no B, and the assumptions were that A applies to all C and C to some B. If the syllogism is negative, the hypothesis was that A applies to some B, and the assumptions were that A applies to no C and C to all B, so that we get the first figure. The same also holds if the syllogism is not universal, but it has been proved that A does not apply to some B; for the
γάρ παντὶ τῶν Β τὸ Α ύπάρχειν, εἰληφται δὲ τὸ Α μηδενὶ τῷ Γ καὶ τὸ Γ τῶν τῶν Β· οὖτω γάρ τὸ πρῶτον σχῆμα.

40 Πάλιν ἐν τῷ τρίτῳ σχῆματι δεδείχθω τὸ Α παντὶ τῷ Β ύπάρχειν. οὐκοίν η μὲν ὑπόθεσις ἢ μὴ παντὶ τῷ Β τὸ Α ύπάρχειν, εἰληφται δὲ τὸ Γ παντὶ τῷ Β καὶ τὸ Α παντὶ τῷ Γ· οὖτω γάρ ἦσται τὸ ἀδύνατον. τούτῳ δὲ τὸ πρῶτον σχῆμα. ὕσαυτος δὲ καὶ εἰ ἐπὶ τινος ἢ ἀπόδειξις· ἢ μὲν γὰρ ὑπόθεσις μηδενὶ τῷ Β τὸ Α ύπάρχειν, εἰληφται δὲ τὸ Γ τῶν τῶν Β καὶ τὸ Α παντὶ τῷ Γ· εἰ δὲ στερητικὸς ὁ συλλογισμός, ὑπόθεσις μὲν τὸ Α τῶν τῶν Β ύπάρχειν, εἰληφται δὲ τὸ Γ τῶν τῶν Β καὶ τὸ Α παντὶ τῷ Γ· εἰ μὴ καθόλου ἢ ἀπόδειξις. ὑπόθεσις μὲν γὰρ ἦσται παντὶ τῷ Β τὸ Α ύπάρχειν, εἰληφται δὲ τὸ Γ τῶν τῶν Β καὶ τὸ Α μηδενὶ τῷ Γ· ὅμως δὲ καὶ εἰ μὴ καθόλου ἢ ἀπόδειξις. ὑπόθεσις μὲν γὰρ ἦσται παντὶ τῷ Β τὸ Α ύπάρχειν, εἰληφται δὲ τὸ Γ τῶν τῶν Β καὶ τὸ Α μηδενὶ τῷ Γ· τούτῳ δὲ τὸ μέσον σχῆμα. οὕτως δὲ καὶ εἰ μὴ καθόλου ἢ ἀπόδειξις. 

15 Φανερὸν οὖν ὅτι διὰ τῶν αὐτῶν ὅρων καὶ δεικτικῶς ἔστι δεικνύναι τῶν προβλημάτων ἑκαστὸν [καὶ διὰ τοῦ ἀδυνάτου]. ὅμως δὲ ἦσται καὶ δεικτικῶς ὅτι τῶν συλλογισμῶν εἰς ἀδύνατον ἀπάγειν ἐν τοῖς εἰλημμένοις ὅροις, ὅταν ἡ ἀντικειμένη πρότασις τῷ συμπεράσματι ληφθῇ. γίγνονται γὰρ οἱ αὐτοὶ συλλογισμοὶ τοῖς διὰ τῆς ἀντιστροφῆς, ὡστ' εὖθὺς ἔχομεν καὶ τὰ σχήματα δι' ὑπὸ ἑκαστὸν ἦσται. δὴ λοιπὸν οὖν ὅτι πάν προβλήμα 

20 δείκνυται κατ' ἀμφοτέρους τοὺς τρόπους, διὰ τοῦ ἀδυνάτου καὶ δεικτικώς, καὶ οὐκ ἐνδέχεται χωρίζεσθαι τὸν ἐτερον. 

XV. Ἔν ποίῳ δὲ σχῆματι ἦστιν ἐξ ἀντικειμένων 

1 καὶ ... ἀδυνάτου om. AC, Waitz.
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hypothesis was that A applies to all B, and the assumptions were that A applies to no C, and C to some B; for in this way we get the first figure.

Again in the third figure let it be proved that A applies to all B. Then the hypothesis was that A does not apply to all B, and the assumptions were that C applies to all B and A to all C; for it is in this way that the proof *per impossibile* will result; and this is the first figure. The same also holds if the demonstration proves a particular conclusion, for then the hypothesis was that A applies to no B, and the assumptions were that C applies to some B and A to all C. If the syllogism is negative, the hypothesis was that A applies to some B, and the assumptions were that C applies to no A but to all B. This is the middle figure. Similarly too if the demonstration proves a particular negative conclusion; the hypothesis will be that A applies to all B, and the assumptions were that C applies to no A but to some B. This is the middle figure.

Thus it is evident that each of these propositions can also be proved ostensively by means of the same terms. Similarly too if the syllogisms are ostensive it will be possible to employ reduction *ad impossibile* by using the terms already taken, if we assume the premiss which contradicts the conclusion. For we get the same syllogisms as we obtained by conversion; and so we have at once the very figures by which each one will be effected. It is clear, then, that every proposition can be proved in both ways, both *per impossibile* and ostensively; and that neither method can be separated from the other.

XV. In which figures we can and cannot draw a Conclusion from
προτάσεων συλλογίσασθαι καὶ ἐν ποίῳ οὐκ ἔστιν,
ωδ' ἔσται φανερόν. λέγω δ' ἀντικειμένας εἶναι
προτάσεις κατὰ μὲν τὴν λέξιν τέτταρας, οἷον τὸ
παντὶ τῷ οὐδενὶ, καὶ τὸ παντὶ τῷ οὐ παντὶ, καὶ τὸ
tινὶ τῷ οὐδενὶ, καὶ τὸ τινὶ τῷ οὐ τινὶ, κατ' ἀλήθειαν
de τρεῖς. τὸ γὰρ τινὶ τῷ οὐ τινὶ κατὰ τὴν λέξιν
ἀντίκειται μονὸν. τούτων δ' ἐναντίας μὲν τὰς
καθόλου, τὸ παντὶ τῷ μηδενὶ ὑπάρχειν (οἷον τὸ
πάσαν ἐπιστήμην εἶναι ἑποδαίαν τῷ μηδεμίαν
eῖναι ἑποδαίαν), τὰς δ' ἄλλας ἀντικειμένας.

'Εν μὲν οὖν τῷ πρώτῳ σχήματι οὐκ ἔστων ἐξ
ἀντικειμένων προτάσεων συλλογισμὸς οὔτε κατα-
φατικός οὔτε ἀποφατικός, καταφατικός μὲν ὅτι
ἀμφότερας δεὶ καταφατικάς εἶναι τὰς προτάσεις,
ai δ' ἀντικείμεναι φάσις καὶ ἀπόφασις, στερητικός
de ὅτι οἱ μὲν ἀντικείμεναι τὸ αὐτό τοῦ αὐτοῦ
cατηγοροῦσι καὶ ἀπαρνοῦνται, τὸ δ' ἐν τῷ πρῶτῳ
μέσον οὖ λέγεται κατ' ἀμφοῖν, ἀλλ' ἐκείνοι μὲν
ἀλλο ἀπαρνεῖται, αὐτὸ δὲ ἄλλου κατηγορεῖται:
αὐται δ' οὖκ ἀντίκεινται.

Ἐν δὲ τῷ μέσῳ σχήματι καὶ ἐκ τῶν ἀντικει-
mένων καὶ ἐκ τῶν ἐναντίων ἐνδεχεσθαι
συλλογισμόν. ἔστω γὰρ ἀγαθὸν μὲν ἐφ' οὖ Α,
ἐπιστήμην δὲ ἐφ' οὖ Β καὶ Γ. εἰ δὴ πᾶσαν ἐπι-
stήμην ἑποδαίαι φέλαι καὶ μηδεμίαι, τὸ A τῷ Β
παντὶ ὑπάρχει καὶ τῷ Γ οὐδενὶ, ὡστε τὸ Β τῷ Γ
οὐδενὶ, οὐδεμία ἀρα ἐπιστήμην ἐπιστήμην ἐστών.

ὁμοίως δὲ καὶ εἰ πᾶσαν λαβών ἑποδαίαιν τὴν
ιατρικὴν μὴ ἑποδαίαιν ἑλαβε̄ τῷ μὲν γὰρ Β παντὶ
tὸ A τῷ δὲ Γ οὐδενὶ, ὡστε ἡ τὶς ἐπιστήμην οὐκ
conclusion from opposite premisses will be evident from the following analysis.—I hold that there are four pairs of premisses which exhibit a verbal opposition, viz., 'applies to all' and 'applies to none'; 'applies to all' and 'does not apply to all'; 'applies to some' and 'applies to none'; and 'applies to some' and 'does not apply to some'; but only three of these are really opposed, because the opposition of 'applies to some' and 'does not apply to some' is only verbal. Of these the universal premisses 'applies to all' and 'applies to none' (e.g., 'all knowledge is good' and 'no knowledge is good') are contrary; the other two pairs are contradictory.

In the first figure, then, a syllogism from opposite premisses is impossible, whether it be affirmative or negative. An affirmative syllogism is impossible because to produce it both the premisses must be affirmative, and a pair of opposite premisses is composed of an affirmation and its negation. A negative syllogism is impossible because opposite premisses affirm and deny the same predicate of the same subject, and in the first figure the middle term is not predicated of both the others, but something else is denied of it while it is itself predicated of something else; and the premisses thus formed are not opposed.

In the middle figure a syllogism may be obtained both from contradictory and from contrary premisses. For let A be 'good,' and let B and C be 'science.' Then if we assume that all science is good, and then that no science is good, A applies to all B and to no C, so that B applies to no C. Therefore no science is science. Similarly too if after assuming that all science is good we then assume that medicine is not good; for A applies to all B but to no C, so that the
18 κατὰ θατέρου δὲ καταφατικῶς. καὶ εἰ τῶ μὲν Γ παντὶ τὸ Α τῷ
dὲ Β μηδενὶ, ἐστὶ δὲ τὸ μὲν Β ἐπιστήμη τὸ δὲ Γ
ιατρικῆ τὸ δὲ Α ὑπόληψις· οὐδεμιὰν γὰρ ἐπιστήμην
ὑπόληψιν λαβῶν εἰλήφη τινὰ ἐπιστήμην εἶναι
ὑπόληψιν. διαφέρει δὲ τοῦ πάλαι τῷ ἐπὶ τῶν ὅρων
ἀντιστρέφοντα· πρότερον μὲν γὰρ πρὸς τῷ Β, νῦν
dὲ πρὸς τῷ Γ τὸ καταφατικὸν, καὶ ἄν ἂν μὴ
kαθόλου ἡ ἑτέρα πρότασις ὑποτεθεὶς· ἀεὶ γὰρ τὸ
μέσον ἐστὶν ὁ ἀπὸ θατέρου μὲν ἀποφατικῶς λέγεται
κατὰ θατέρου δὲ καταφατικῶς.

"Ωστ' εὐδέχεται τάντικείμενα περαινοθαί, πλὴν
οὐκ ἂν οὐδὲ πάντως, ἀλλ' εἰνάν οὕτως ἔχει τὰ ὑπὸ
tὸ μέσον ὡστ' ἡ ταῦτα εἶναι ἡ ὅλον πρὸς μέρος.
ἄλλως δ' ἀδύνατον οὐ γὰρ ἔσονται οὐδαμῶς αἱ
προτάσεις οὐτ' ἐναντίαι οὐτ' ἀντικείμεναι.

Ἐν δὲ τῷ τρίτῳ σχῆματι καταφατικὸς μὲν
συλλογισμὸς οὐδέποτ' ἐσται ἐξ ἀντικείμενων προ-
tάσεων διὰ τὴν εἰρημένην αἰτίαν καὶ ἐπὶ τοῦ
πρῶτου σχῆματος, ἀποφατικὸς δ' ἐσται, καὶ
καθόλου καὶ μὴ καθόλου τῶν ὅρων ὅτεν.
ἔστω γὰρ ἐπιστήμη ἐφ' οὖ τὸ Β καὶ Γ, ιατρικῆ δ' ἐφ' οὖ

Ἀ. εἰ οὖν λάβη τὰ πᾶσαν ιατρικὴν ἐπιστήμην καὶ
μηδεμιὰν ιατρικὴν ἐπιστήμην, τὸ Β παντὶ τῷ Α
eἰλήφη καὶ τὸ Γ οὐδενὶ, ὡστ' ἐσται τῆς ἐπιστή-
μην οὐκ ἐπιστήμη. ὁμοίως δὲ καὶ ἂν μὴ καθόλου
ληφθῇ ἡ ΒΑ1 πρότασις· εἰ γὰρ ἐστὶ τῆς ιατρικῆς
ἐπιστήμης καὶ πάλιν μηδεμιὰ ιατρικὴ ἐπιστήμης,

συμβαίνει ἐπιστήμην τινὰ μὴ εἶναι ἐπιστήμην.
εἰ δὲ καθόλου μὲν τῶν ὅρων λαμβανομένων
ἐναντία αἱ προτάσεις, εὰν δ' ἐν μέρει ἄτερος
ἀντικείμεναι.

1 BA ABC, Waitz: AB uolgo.
particular science of medicine will not be science. Also if A applies to all C but to no B, and B is science, C medicine and A belief; for after assuming that no science is belief, we have now assumed that a particular science is belief. This differs from the former example in being converted in respect of its terms; for in the former example the affirmative proposition was attached to B, but now it is attached to C. The same will still be true if the other premiss is not universal; for the middle is always that which is stated negatively of one term and affirmatively of the other.

Thus it is possible to draw an inference from opposite premisses; not always, however, nor under all conditions, but only if the relation of the terms included under the middle is that of identity or of whole to part. No other relation is possible; otherwise the premisses will be in no sense either contrary or contradictory.

In the third figure there can never be an affirmative syllogism from opposite premisses, for the reason stated in the case of the first figure; but there can be a negative syllogism, whether the terms are universal or not. Let B and C stand for science, and A for medicine. Supposing then that we assume that all medicine is science, and that no medicine is science; then we have assumed that B applies to all A, and C to no A, and therefore some science will not be science. Similarly too if the premiss BA which we assume is not universal; for if some medicine is science, and again no medicine is science, it follows that some science is not science. The premisses are contrary if the terms assumed are universal, but contradictory if one term is particular.
Δεῖ δὲ κατανοεῖν ὦτι ἐνδέχεται μὲν οὐτω τὰ ἀντικείμενα λαμβάνειν, ὥσπερ εἰσομὲν πᾶσαν ἐπιστήμην σπουδαίον εἶναι καὶ πάλιν μηδεμίαν· ἥ τινα μὴ σπουδαίαν (ὅπερ οὖκ εἰσοδέλανεν), ἔστι δὲ δὴ ἄλλων ἐρωτημάτων συννοησάσθαι βάτεροι, ἥ ὡς ἐν Τοπικοῖς ἐλέχητα λαβεῖν.

Ἐπεί δὲ τῶν καταφάσεων αἱ ἀντιθέσεις τρεῖς, ἐξαχῶς συμβαίνει τάντακείμενα λαμβάνειν, ἥ παντὶ καὶ μηδενεί, ἠ καὶ μηδενεί, ἡ παντὶ καὶ μὴ παντὶ, ἡ τυλί καὶ μηδενεί, καὶ τούτῳ ἀντιστρέφαι ἐπὶ τῶν ὀρών, οἷον τὸ Α παντὶ τῷ Β τῷ δὲ Γ μηδενεί, ἡ τῷ Γ παντὶ τῷ δὲ Β μηδενεί, ἡ τῷ μὲν παντὶ τῷ δὲ μη παντὶ, καὶ πάλιν τούτῳ ἀντιστρέφαι κατὰ τοὺς ὅρους. ὡμοίως δὲ καὶ ἐπὶ τοῦ τρίτου σχήματος ὡστε φανερὸν ὅσποισ τε καὶ ἐν ποίοισ σχήμασιν ἐνδέχεται διά τῶν ἀντικειμένων προτάσεων γενέσθαι συννοησισμοῦ.

Φανερὸν δὲ καὶ ὦτι ἐκ ψευδῶν μὲν ἐστιν ἄληθεσιν συννοησασθαι, καθάπερ εἰρηταί πρότερον, ἐκ δὲ τῶν ἀντικειμένων οὐκ ἐστιν· ἀεὶ γὰρ ἐναντίος τὸ συλλογισμὸς γίγνεται τῶ πράγματι· οἷον εἰ ἐστιν ἀγαθόν, μὴ εἶναι ἀγαθόν, ἢ ἐι ἵδον, μὴ ἵδον, διὰ τὸ εἴ ἄντιφάσεως εἶναι τὸν συλλογισμὸν καὶ τοὺς ὑποκειμενούς ὀρους ἢ τοὺς αὐτοὺς εἶναι ἢ τὸν μὲν ὅλον τὸν δὲ μέρος. δὴ ήλον δὲ καὶ ὦτι ἐν τοῖς παραλογισμοῖς υλεῖν κωλύει γίγνεσθαι τῆς ὑποθέσεως ἀντίφασιν, οἷον εἰ ἐστιν περιττόν, μὴ εἶναι περιττόν· ἐκ γὰρ τῶν ἀντικειμένων προτάσεων ἐναντίος ἢν ὁ

It should be observed that while we may assume
the opposite propositions in the way described above,
as we said that all science is good, and again that no
science is good, or that some science is not good (in
this case the contradiction is not usually overlooked),
it is also possible to establish one of the propositions
by means of further questions, or to assume it as we
have described in the *Topics.a*

Since there are three forms of opposition to an
affirmative statement, it follows that there are six
ways of assuming opposite propositions. The pre-
dicate can be said to apply to all and to none, or to
all and not to all, or to some and to none; and each of
these pairs can be converted in respect of its terms:
*e.g.*, it can be said that A applies to all B but to no C,
or to all C but to no B, or to all of the former but not
to all of the latter; and this again can be converted in
respect of its terms. Similarly too in the third figure.
Thus it is evident in how many ways and in which
figures a syllogism can be effected by means of opposite
premises.

It is evident also that whereas we can draw a true
inference from false premisses, as we have explained
above, b we cannot do so from opposite premisses; for
the resulting conclusion is always contrary to the fact:
*e.g.*, if a thing is good, the inference is that it is not
good, or if it is an animal, that it is not an animal.
This is because the syllogism proceeds from contra-
dictory premisses, and the terms laid down are either
the same or related as whole and part. It is clear
also that in fallacious reasoning there is no reason
why the result should not be the contradiction of the
original hypothesis; *e.g.*, if the subject is odd, that
it is not odd. For we have seen that the conclusion
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συλλογισμός. Εάν οὖν λάβῃ τοιαύτας, ἐσται τῆς ὑποθέσεως ἀντίφασις.

Δεῖ δὲ κατανοεῖν ὅτι οὕτω μὲν οὐκ ἔστιν ἐνναντία συμπεράνασθαι εἰς ἑνῶς συλλογισμοῦ, ὥστε εἶναι τὸ συμπέρασμα τὸ μὴ ὅν ἁγαθὸν ἁγαθὸν ἢ ἄλλο τι 20 τοιοῦτον, ἐάν μὴ εὐθὺς ἡ πρότασις τοιαύτη ληφθῇ, οἶον πάν ζώον λευκὸν εἶναι καὶ μὴ λευκὸν, τὸν δὲ ἀνθρώπων ζώον· ἀλλ᾽ ἡ προσλαβεῖν δεί τὴν ἀντίφασιν (οἶον ὅτι πάσα ἐπιστήμη ὑπόληψις, εἰτα λαβεῖν ὅτι ἡ ἰατρικὴ ἐπιστήμη μὲν ἐστιν οὕδεμία δ᾽ ὑπόληψις, 25 ὥσπερ οἱ ἐλεγχοὶ γίγνονται), ἡ ἐκ δύο συλλογισμῶν ἔστω δ᾽ εἶναι ἐνναντία κατ᾽ ἀλήθειαν ταῦτα ἐλημμένα οὐκ ἔστιν ἄλλον τρόπον ἡ τούτων, καθάπερ εἰρηται πρότερον.

XVI. Τὸ δ᾽ ἐν ἀρχῇ αἰτεῖσθαι καὶ λαμβάνειν ἐστι μὲν, ὡς ἐν γενει λαβεῖν, ἐν τῷ μὴ ἀποδεικνύων 30 τὸ προκείμενον, τούτῳ δὲ ἐπισυμβαίνει πολλαχῶς καὶ γὰρ εἰ ὀλίσθες μὴ συλλογίζεται, καὶ εἶ δὲ ἀγνωστοτέρων ἡ ὁμοίως ἀγνωστών, καὶ εἰ δὲ τῶν ὑστέρων τὸ πρότερον· ἡ γὰρ ἀπόδειξις ἐκ πιστοτέρων τε καὶ προτέρων ἐστὶν. τούτων μὲν οὖν οὐδὲν ἐστι τῷ αἰτεῖσθαι τὸ εἴ ἀρχῆς· ἀλλ᾽ ἐπεὶ τὰ 35 μὲν δι᾽ αὐτῶν περικε γνωρίζεσθαι τὰ δὲ δι᾽ ἄλλων (αἱ μὲν γὰρ ἀρχαὶ δὲ αὐτῶν, τὰ δ᾽ ὑπὸ τὰς ἀρχὰς δι᾽ ἄλλων), ὅταν μὴ τῷ δὲ αὐτοῦ γνωστοῦ δι᾽ αὐτοῦ

1 ὑπόληψις B'ν, Waitz: ὑπόληψις καὶ οὖχ ὑπόληψις μωλγο.  
2 μὴ τῷ] τῷ μὴ οὐ, corr. cu.

* i.e. can produce an (affirmative) self-contradictory conclusion. This has been shown to be impossible in the first figure (63 b 33) and in the third (64 a 20), while the second figure cannot give an affirmative conclusion.
resulting from opposite premisses is contrary to fact; therefore if we assume premisses of this kind, we shall obtain a contradiction of the original hypothesis.

It should be observed that it is not possible to infer contrary conclusions from a single syllogism so that the conclusion states that that which is not good is good, or any other similar contradiction (unless the contradictory form goes back to the original premisses, e.g., 'every animal is white and not white' and then 'man is an animal'); we must either assume the contradictory statement as well, e.g., assume that all science is belief, and then that medicine is a science, but that no medicine is belief (as in the process of refutation); or we must draw our conclusions from two syllogisms. There is no other way, as we have said above, in which the assumptions can be truly contrary.a

XVI. Begging or assuming the point at issue consists (to take the expression in its widest sense) in failing to demonstrate the required proposition. But there are several other ways in which this may happen: for example, if the argument has not taken syllogistic form at all, or if the premisses are less well known or no better known than the point to be proved, or if the prior is proved by the posterior; for demonstration proceeds from premisses which are surer and prior. None of these procedures is begging the point at issue.

Now some things are naturally knowable through themselves, and others through something else (for principles are knowable through themselves, while the examples which fall under the principles are knowable through something else); and when any one tries to prove by means of itself that which is not
τις ἐπιχειρηθεὶς δεικνύναι, τότε αἰτεῖται τὸ εἴς ἀρχὴς.

tουτο δέ ἐστι μὲν οὐτω ποιεῖν ὡς εἰθὺς ἀξιώσαι

tὸ προκείμενον, ενδεχεται δὲ καὶ μεταβαντας εἰπ᾽

ἀλλα ἀττα τῶν περικότων δι᾽ ἐκεῖνον δεικνυθαί

dιὰ τούτων ἀποδεικνύναι τὸ εἴς ἀρχής, οἷον εἴ τὸ Α
dεικνύοιτο διὰ τοῦ Β τὸ δὲ Β διὰ τοῦ Γ, τὸ δὲ Γ

περικός εἰ ἐδεικνυθαί διὰ τοῦ Α· συμβαίνει γὰρ

αὐτὸ δι᾽ αὐτοῦ τὸ Α δεικνύαι τοὺς οὕτω συλλογι-

ζομένους. ὅπερ ποιοῦσιν οἱ τὰς παραλλήλους οἰό-

μενοι γράφειν· λανθάνουσι γὰρ αὐτοὶ έαυτοὺς

tουαῦτα λαμβάνοντες εἴ οὐχ οἷον τε ἀποδείξαι μὴ

οὕτω τῶν παραλλήλων· ὥστε συμβαίνει τοῖς οὕτω

συλλογιζομένοις ἕκαστοι εἴη λέγων, εἴ ἐστιν

ἔκαστον· οὕτω δὲ ἀπαν ἐσται δι᾽ αὐτοῦ γνωστὸν·

ὅπερ ἀδύνατον.

Εἰ οὖν τις ἁδήλου οἴτος ὅτι τὸ Α υπάρχει τῷ Γ,

ὁμοίως δὲ καὶ ὅτι τῷ Β, αἰτοῖτο τῷ Β υπάρχειν τὸ

Α, οὐπω δήλον εἰ τὸ ἔν ἀρχή αἰτεῖται, ὅλλ᾽ ὅτι οὐκ

ἀποδεικνυι δήλον· οὐ γὰρ ἀρχὴ ἀποδεῖξας τὸ

ὁμοίως ᾳδήλου. εἰ μέντοι τὸ Β πρὸς τὸ Γ οὐτως

ἐχει ἀτυχὸν εἶναι, ἡ δήλον ὅτι ἀντιστρέφουσιν,

ἡ ὑπάρχει θατερον θατέρω, τὸ ἐν ἀρχῇ αἰτεῖται.

καὶ γὰρ ἂν ὅτι τῷ Β τὸ Α υπάρχει δι᾽ ἐκείνων

dεικνύοι, εἰ ἀντιστρέφοι νῦν δὲ τούτο κωλυει, ὅλλ᾽

οὐχ ὁ τρόπος· εἴ δὲ τούτο ποιοί, τὸ εἰρημένον ἄν

ποιοὶ καὶ ἀντιστρεφοὶ διὰ τριῶν· ὥσαυτως δὲ καὶ

1 διὰ] ἀσ διὰ C*.

* e.g., that the interior opposite angles are equal, which depends upon the parallelism of the lines.
* Sc. than the point to be proved.
* i.e. a premiss; cf. 53 a 3.
* Sc. as genus to species.
* Assuming that B and C are not convertible.
knowable by means of itself, then he is begging the point at issue. This may be done by directly postulating the proposition which is to be proved; but we may also have recourse to some other propositions of a sort which are of their very nature proved by means of our proposition, and prove the point at issue by means of them: e.g., supposing that A is proved by B and B by C, and it is the nature of C to be proved by A; for if anyone argues in this way it follows that he is proving A by means of itself. This is exactly what those persons do who think that they are drawing parallel lines; for they do not realize that they are making assumptions which cannot be proved unless the parallel lines exist. Thus it follows that those who argue in this way are saying that any given thing is so, if it is so. But on this principle everything will be self-evident; which is impossible.

Thus if it is uncertain whether A applies to C, and equally uncertain whether it applies to B, supposing that anyone claims that A applies to B, it is not yet clear whether he is begging the point at issue, but it is clear that he is not demonstrating it; for that which is no less uncertain is not the starting-point of demonstration. If, however, the relation of B to C is such that they are identical, or that they are clearly convertible, or that one applies to the other, then he is begging the point at issue; for he could also prove by these premisses, if he were to convert them, that A applies to B. As it is, the conditions prevent this, although the method of argument does not. But if he were to do this, he would be doing what we have described, and proving reciprocally by three propositions. So too supposing that he

Petitio principi when (I) the major premiass,
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20 ἐι τὸ Β τῷ Γ λαμβάνοι ὑπάρχειν, ὡμοίως ἄδηλον ὅν καὶ εἰ τὸ Α, οὕτω τὸ ἐξ ἀρχῆς αἰτεῖται, ἀλλ’ οὐκ ἀποδείκνυσιν. ἔαν δὲ ταύτον ἢ τὸ Α καὶ Β ἢ τῷ ἀντιστρέφειν ἢ τῷ ἐπεσθαί τῷ Β τὸ Α, τὸ ἐξ ἀρχῆς αἰτεῖται διὰ τὴν αὐτὴν αἰτίαν τὸ γάρ ἐξ ἀρχῆς τι δύναται εὑρήσει ἡμῖν, ὅτι τὸ δὲ αὐτοῦ δεικνύταί τὸ μὴ δι’ αὐτοῦ δῆλον.

Εἰ οὖν ἐστὶ τὸ ἐν ἀρχῇ αἰτεῖσθαι τὸ δὲ αὐτοῦ δεικνύταί τὸ μὴ δι’ αὐτοῦ δῆλον, τούτῳ δὲ ἐστὶ τὸ μὴ δεικνύτατο ὅταν ὡμοίως ἄδηλων ὄντων τού δεικνυμένου καὶ δι’ οὗ δεικνύται ἡ τῷ ταύτα τῷ αὐτῷ ἢ τῷ ταύτον τοῖς αὐτοῖς ὑπάρχειν, ἐν μὲν τῷ μέσῳ σχήματι καὶ τρίτῳ ἀμφότερως ἂν ἐνδέχοιτο τὸ ἐν ἀρχῇ αἰτεῖσθαι, ἐν δὲ κατηγορικῷ συλλογισμῷ ἐν τῇ τῷ τρίτῳ καὶ τῷ πρώτῳ ὅταν δ’ ἀποφατικῶς, ὅταν τὰ αὐτὰ ἀπὸ τοῦ αὐτοῦ, καὶ οὕτω ὡμοίως ἄμφοτεραι αἱ προτάσεις (ὡσαύτως δὲ καὶ ἐν τῷ μέσῳ), διὰ τὸ μὴ ἀντιστρέφειν τοὺς ὀροὺς κατὰ τοὺς ἀποφατικοὺς συλλογισμοὺς.

“Εστι δὲ τὸ ἐν ἀρχῇ αἰτεῖσθαι ἐν μὲν ταῖς ἀποδείξει τὰ κατ’ ἀλήθειαν οὕτως ἑξουσία, ἐν δὲ τοῖς διαλεκτικοῖς τὰ κατὰ δόξας.

XVII. Τὸ δὲ μὴ παρὰ τούτῳ συμβαίνειν τὸ ψεύδος, ὃ πολλάκις ἐν τοῖς λόγοις εἰσάγαμεν λέγεων.

* 64 b 31-38.
* i.e. either in the minor or in the major premiss.
* Because the second figure does not permit affirmative syllogisms.
* ἅ ἐστιν ἢ the same predicate is denied of identical subjects.
* The terms of a negative premiss are not convertible, and so the convertible terms must be those of the affirmative.
should assume that B applies to C, although this is no less uncertain than whether A does; he is not yet begging the point at issue, but he is not demonstrating it. If, however, A and B are identical, either because they are convertible or because A is a consequent of B, he is begging the point at issue, for the same reason as before; for we have explained above that to beg the point at issue consists in proving by means of itself that which is not self-evident.

If, then, to beg the point at issue is to prove by means of itself that which is not self-evident; i.e., failure to prove, when the proposition to be proved and that by which it is proved are equally uncertain, either because identical predicates apply to the same subject or because the same predicate applies to identical subjects: then in the middle and third figures the point at issue can be begged in either way; in affirmative syllogisms, however, it occurs only in the third and first figures. But when the syllogism is negative we have petitio principii when identical predicates are denied of the same subject, and it does not occur in both premisses indifferently (and the same holds good of the middle figure), since the terms are not convertible in negative syllogisms.

In demonstrations the point which is begged represents the true relation of the terms; in dialectical arguments it represents the relation which is commonly accepted.

XVII. The objection 'this is not the cause of the False Cause,' which we are accustomed to use frequently premiss; therefore the petitio principii must be in the negative premiss. This whole section is involved and inaccurate. In point of fact petitio principii can occur (1) in Barbara (major and minor) and Celarent (major); (2) in Camestres (minor); (3) in Darapti and Felapton (major).
10 πρῶτον μὲν ἐστὶν ἐν τοῖς εἰς τὸ ἀδύνατον συλ-
λογισμοῖς, ὅταν πρὸς ἀντίφασιν ἃ τούτου ὦ ἔδει-
kυντο τῇ εἰς τὸ ἀδύνατον. οὔτε γὰρ μὴ ἀντιφήςας
ἐρεῖ τὸ ὰ παρά τούτο, ἀλλ' ὁτι φεύδος τι ἐτέθη
tῶν πρότερον, οὔτ' ἐν τῇ δεικνυόσῃ οὖ γὰρ
τίθην ὦ ἀντιφήςας.
"Ετι δ' ὅταν ἀναφεβη τι δεικτικῶς διά τῶν ΑΒΓ, 
οὐκ ἐστὶν εἰπεῖν ὡς οὐ παρὰ τὸ κείμενον γεγένηται
ὁ συλλογισμός. τὸ γὰρ μὴ παρὰ τούτο γέγονον 
tότε λέγομεν ὅταν ἀναφεβήντος τούτου μηδὲν ἤττον 
περαίηται ὁ συλλογισμός, ὅπερ οὐκ ἐστὶν ἐν τοῖς
deiktikois' ἀναφεβήσις γὰρ τῆς θέσεως οὐδ' ὁ 
πρὸς ταύτην ἔσται συλλογισμός. φανερὸν οὖν ὅτι
ἐν τοῖς εἰς τὸ ἀδύνατον λέγεται τὸ μὴ παρὰ τούτο,
καὶ ὅταν οὕτως ἔχη πρὸς τὸ ἀδύνατον ἡ ε ἀρχὴς
ὑπόθεσις ἑκεῖ καὶ οὔσης καὶ μὴ οὔσης ταύτης
ὑπὲρ αὐτὴν ὥστε ὁ συλλογισμός. τὸ γὰρ μὴ παρὰ
tὸ Κείμενον ἀτούτου ἡ λέγεται καὶ ἐν Τοπικοῖς.
"Ο μὲν οὖν φανερώτατος τρόπος ἔστι τοῦ μὴ παρὰ
τῆς θέσεως εἰπεῖ τὸ φεύδος ὅταν ἀπὸ τῆς ὑποθέσεως
ἀπώνατος ἢ ἀπό τῶν μέσων πρὸς τὸ ἀδύνατον ὦ
συλλογισμός, ὅπερ εἰρηται καὶ ἐν Τοπικοῖς. τὸ γὰρ
τὸ ἀναίτιον ὥς αἰτιον τίθέναι τούτο ἐστιν, οἷον 
βουλόμενος δεῖξαι ὅτι ἀσύμμετρος ἡ διάμετρος ἐπι-
χειρισθεὶ τὸν Ζήγινος λόγον δεικνύει, ὥς οὐκ ἔστι
κυνεύσαι, καὶ εἰς τούτο ἀπάγοι τὸ ἀδύνατον οὐδα-
μένος γὰρ οὐδαμῇ συνεχείς ἐστι τὸ φεύδος τῇ
φάσει.

1 ὁ ἀντιφώς ΛΒίΒ'Cu: ὁ ἀντίφως Β': ὁ ἀντιφώς ν: τὴν ἀντίφως ιμ.

* Soph. El. 167 b 21 ff.
* i.e. it is illegitimate to try to refute a hypothesis by
reduction when the impossible conclusion does not depend
upon that hypothesis.
* Cf. Physics, VI. ix. 239 b 10 ff.
in our arguments, is met with primarily in syllogisms involving reduction *ad impossibile*; it is there used to contradict the proposition which was being proved by reduction *ad impossibile*. For unless our opponent contradicts this he will not say 'this is not the cause of the fallacy'; he will protest that there was a false assumption in the earlier stages of the argument. Nor will he use the objection in an ostensive proof, since in this one does not posit something which contradicts the conclusion.

Further, when something is refuted ostensively by means of the terms A, B and C, it cannot be maintained that the syllogism does not depend upon the assumption; because we only say that something is not the cause when even if it is refuted the syllogism is concluded none the less. This is not possible in ostensive syllogisms; for when the hypothesis is refuted the syllogism which is related to it will no longer hold good. Thus it is evident that the objection 'this is not the cause' is used in reduction *ad impossibile* when the original hypothesis is so related to the impossible conclusion that the latter results whether the hypothesis is valid or not.

The most obvious form in which the hypothesis is not the cause of the fallacy is when the syllogism proceeds from the middle terms to the impossible conclusion independently of the hypothesis, as we have described in the *Topics*. This is to posit as a cause that which is no cause; as if someone wishing to prove that the diagonal of a square is incommensurable were to try to prove Zeno's argument that motion is impossible, and were to use reduction *ad impossibile* to this end; for there is no connexion in any way at all between the fallacy and the original
Ἀριστοτέλης

63 b

τῇ εἰς ἀρχής. ἀλλὸς δὲ τρόπος εἰς συνεχεῖς μὲν εἰς τὸ ἀδύνατον τῇ ύπόθεσει, μὴ μέντοι δὲ ἐκεῖνην συμβαίνου. τούτῳ γὰρ ἐγχώρει γενόσθαι καὶ ἐπὶ τὸ ἀνώ καὶ ἐπὶ τὸ κάτω λαμβάνοντι τὸ συνεχεῖς, οἷον εἰ τὸ Α τῷ Β κεῖται ὑπάρχον τὸ δὲ Β τῷ Γ τὸ δὲ Γ τῷ Δ, τούτῳ δὲ εἰς ψεῦδος, τὸ Β τῷ Δ ὑπάρχειν. εἰ γὰρ ἀφαιρεθέντος τοῦ Α μηδὲν ἦττον ὑπάρχοι τὸ Β τῷ Γ καὶ τὸ Γ τῷ Δ, οὐκ ἂν εἰς τὸ ψεῦδος διὰ τὴν εἰς ἀρχής ύπόθεσιν. ἦ πάλιν εἰ τις ἐπὶ τὸ ἀνάλημα τὸ συνεχεῖς, οἷον εἰ τὸ μὲν Α τῷ Β τῷ Δ ἢ ὧν λαμβάνον τὸ συνεχεῖς, οἷον εἰ τὸ μὲν Α τῷ Β τῷ Δ. τῷ Ε καὶ τῷ Ε τὸ Ζ, ψεῦδος δὲ εἰς τὸ ὑπάρχειν τῷ Α τῷ Ζ· καὶ γὰρ οὕτως οὐδὲν ἂν ἦττον εἰς τὸ ἀδύνατον ἀναφικτεύσης τῆς εἰς ἀρχῆς ύποθέσεως.

'Αλλὰ δεῖ πρὸς τοὺς εἰς ἀρχής ὅρους συνάπτειν τὸ ἀδύνατον· οὕτω γὰρ ἐσται διὰ τὴν ύπόθεσιν, οἷον ἐπὶ μὲν τὸ κάτω λαμβάνοντι τὸ συνεχεῖς πρὸς τὸν κατηγοροῦμενον τῶν ὥρων· εἰ γὰρ ἀδύνατον τὸ Α τῷ Δ ὑπάρχειν, ἀφαιρεθέντος τοῦ Α οὐκέτι ἐσται τὸ ψεῦδος. ἐπὶ δὲ τὸ ἀνώ, καθ' οὐ κατηγορεῖται· εἰ γὰρ τῷ Β μὴ ἐγχώρει τὸ Ζ ὑπάρχειν, ἀφαιρεθέντος τοῦ Β οὐκέτι ἐσται τὸ ἀδύνατον. ομοίως δὲ καὶ στερητικῶν τῶν συλλογισμῶν οὕτως.

64 a

Φανερὸν ἄρεν ὅτι τοῦ ἀδύνατον μὴ πρὸς τοὺς εἰς ἀρχῆς ὅρους οὗτος οὐ παρά τὴν θέσιν συμβαίνει τὸ ψεῦδος. ἦ ὁδ' οὐτως ἂει διὰ τὴν ύπόθεσιν ἐσται τὸ ψεῦδος· καὶ γὰρ εἰ μὴ τῷ Β ἀλλὰ τῷ Κ ἐτέθη τὸ τῷ Δ ὑπάρχειν, τὸ δὲ Κ τῷ Γ καὶ τοῦτο τῷ Δ, καὶ οὖτω μένει τὸ ἀδύνατον· ομοίως δὲ καὶ ἐπὶ τὸ ἀνω

* i.e. working towards or away from the most universal term.
* Sc. in the hypothesis.
* i.e. that A applies to D.

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assertion. We have another form when the impos-
sible conclusion is connected with the hypothesis, but
does not follow because of it. This may occur whether
one regards the connexion in the upward or in the
downward direction,\(^a\) e.g., if A is assumed to apply
to B and B to C and C to D, and it is false that B
applies to D; for if when A is eliminated B none the
less applies to C and C to D, then the fallacy cannot
be due to the original hypothesis. Or again, if one
regards the connexion in the upward direction, e.g., if
A applies to B and E to A and F to E, and it is false
that F applies to A; for in this case too the impossible
conclusion will follow none the less if the original
hypothesis is eliminated.

The impossible conclusion must be connected with
the original terms, for then it will be due to the hypo-
thesis. E.g., if we are regarding the connexion in
the downward direction, the impossible conclusion
must be connected to the term which is the pre-
dicate.\(^b\) For if it is impossible that A should apply
to D, when A is eliminated the fallacy will no longer
exist. In the upward direction the connexion should
be to the term of which the other is predicated.\(^b\)
For if F cannot apply to B, when B is eliminated the
fallacy will no longer exist. Similarly too if the
syllogisms are negative.

Thus it is evident that if the impossible conclusion
is not related to the original terms, the fallacy is not
due to the hypothesis. Indeed even when the con-
clusion is so related, the fallacy will not always be
due to the hypothesis; for supposing that A had
been assumed to apply not to B but to K, and K to C
and C to D; even so the impossible conclusion\(^c\)
remains. Similarly too if one takes the terms in the
λαμβάνοντι τοὺς ὄρους, ὡστ' ἐπεὶ καὶ ὄντος καὶ μὴ
10 ὄντος τοῦτον συμβαίνει τὸ ἀδύνατον, οὐκ ἂν εἰῇ
ضار τὴν θέσιν. ἢ τὸ μὴ ὄντος τοῦτον μηδὲν
ήττον γίγνεσθαι τὸ ψεῦδος οὐχ οὕτω ληττέον ὡστ'
ἀλλον τιθεμένου συμβαίνει τὸ ἀδύνατον, ἀλλ' ὅταν
ἀφαιρεθέντος τοῦτο διὰ τῶν λοιπῶν προτάσεων
tαυτὸ περαινηται ἀδύνατον, ἐπεὶ ταυτὸ γε ψεῦδος
συμβαίνειν διὰ πλειόνων ὑποθέσεων οὐδὲν ἴσως
ἄτοπον, οἷον τὰς παραλλήλους συμπίπτειν καὶ εἰ
μείξων ἐστὶν ἡ ἐντὸς τῆς ἐκτὸς καὶ εἰ τὸ τρίγωνον
15 ἐχει πλείους ὀρθὰς δυνείν.

XVIII. 'Ὁ δὲ ψευδὴς λόγος γίγνεται παρὰ τὸ
19 πρῶτον ψεῦδος. ἢ γὰρ ἐκ τῶν δύο προτάσεων ἢ
ἐκ πλειόνων πᾶς ἐστὶ συλλογισμὸς. εἰ μὲν οὖν ἐκ
tῶν δύο, τούτων ἀνάγκη τὴν ἑτέραν ἢ καὶ ἀμφο-
τέρας εἶναι ψευδεῖς: ἐξ ἀληθῶν γὰρ οὐκ ἢν ψευδῆς
συλλογισμὸς. εἰ δ' ἐκ πλειόνων, οἷον τὸ μὲν Γ διὰ
tῶν AB, ταῦτα δὲ διὰ τῶν DEZH, τούτων τι ἐσται
15 τῶν ἐπάνω ψεῦδος, καὶ παρὰ τοῦτο ὁ λόγος· τὸ γὰρ
Α καὶ Β δὲ ἐκεῖνων περαινηται· ὡστε παρ' ἐκεῖνων
τι συμβαίνει τὸ συμπέρασμα καὶ τὸ ψεῦδος.

25 XIX. Πρὸς δὲ τὸ μὴ κατασυλλογίζεσθαι παρα-
tηρητέου, ὅταν ἀνευ τῶν συμπερασμάτων ἐρωτά
upward direction; so that since the impossible conclusion follows whether the original assumption holds or not, it cannot follow from the hypothesis. Probably the fact that when the assumption is eliminated the fallacy results none the less should be taken to mean, not that the impossible conclusion follows when some other assumption is made, but that when the original assumption is eliminated the same impossible conclusion results through the remaining premisses; since presumably it is by no means incongruous that the same fallacy should follow from several hypotheses, e.g., that the impossible conclusion 'parallel lines meet' should follow both on the hypothesis that the interior is greater than the exterior angle and on the hypothesis that the sum of the angles of a triangle is greater than two right angles.

XVIII. Falsity in an argument rests on the first false statement which the argument contains. Every syllogism is drawn from two or more premisses. Thus if the false argument is drawn from two premisses, one or both of these must be false; for we have seen that a false conclusion cannot be drawn from true premisses; but if it is drawn from more than two, e.g., if C is proved by means of A and B and these by means of D, E, F and G, one of these higher propositions must be false, and must be the cause of the (falsity of the) argument; for A and B are inferred by means of those propositions. Thus it is from some one of them that the conclusion, i.e. the fallacy, results.

XIX. If we are to avoid having a syllogism constructed against us when our opponent, without disclosing the conclusions, asks us to admit the grounds since the same fallacy may follow from more than one hypothesis.

Counter-syllogisms: how to escape,
τὸν λόγον, ὅπως μὴ δοθῇ δὶς ταὐτῶν ἐν ταῖς προ-
tάσεσιν, ἐπειδή ἕπερ ἢσμεν ὅτι ἄνευ μέσου συλλογι-
σμός οὐ γίγνεται, μέσον δ᾽ ἐστὶ τὸ πλεονάκις
λεγόμενον. ὥς δὲ δει πρὸς ἐκαστὸν συμπέρασμα τηρεῖν τὸ μέσον, 
φανερὸν ἐκ τοῦ εἰδέναι ποιὸν ἐν ἑκάστῳ σχήματι 
δείκνυσι. τούτῳ δ᾽ ἦμας οὐ λήσεται διὰ τὸ εἰδέναι πῶς ὑπέχομεν τὸν λόγον.
Χρῆ δ᾽ ὅπερ φιλάττεσθαι παραγγέλλομεν ἀπο-
κρινομένους, αὐτοὺς ἐπιχειροῦντας πειρᾶσθαι λαν-
θάνειν. τούτῳ δ᾽ ἐσται πρῶτον, ἕαν τὰ συμπερά-
σματα μὴ προσυλλογίζωνται ἀλλ᾽ εἰλημμένων τῶν ἀναγκαίων ἀδηλα ἢ, ἔτι δὲ ἂν μὴ τὰ σύνεγγυς ἐρωτάν ἀλλ᾽ ὅτι μάλιστα ἀμήσα. ὁλον ἐστιν διὸν
συμπεραίνεσθαι τὸ Λ κατὰ τοῦ Ζ. μέσα ΒΓΔΕ.
δει οὖν ἐρωτάν εἰ τὸ Λ τῷ Β, καὶ πάλιν μὴ εἰ τὸ
Β τῷ Γ, ἀλλ᾽ εἰ τὸ Δ τῷ Ε, κατείτα εἰ τὸ B τῷ Γ
καὶ οὕτω τὰ λοιπά. καὶ δι᾽ ἐνὸς μέσου γίγνεται ὁ συλλογισμός, ἀπὸ τοῦ μέσου ἁρχεῖσθαι μάλιστα 
γάρ ἂν οὕτω λανθάνοι τὸν ἀποκρινόμενον.
XX. Ἔνεπε δ᾽ ἐχομεν πότε καὶ πῶς ἐχόντων τῶν ὁ 
ὄρων γίγνεται συλλογισμός, φανερὸν καὶ πότ᾽ ἐσται καὶ πότ᾽ οὐκ ἐσται ἔλεγχος. πάντων μὲν γὰρ 
συγχωρουμένων ἢ ἐναλλάξ τιθεμένων τῶν ἀπο-
κρίσεων (οἴον τῆς μὲν ἀποφατικῆς τῆς δὲ κατα-

1 ἀμήσα B1C1: τὰ μέσα uolgo.

* Cf. 40 b 29—41 a 20.
of his argument, we must be careful that we do not grant him the same term twice over in the premisses; since we know that without a middle term there cannot be a syllogism, and the middle term is that which occurs more than once. In what way we should watch for the middle term with reference to each conclusion is evident from our knowledge of what form the proof takes in each figure; this will not escape us, because we know how we are maintaining the argument.

This same procedure against which we have been warning students when they are on the defensive in argument they should try to adopt unobtrusively when they assume the offensive. This will be possible, firstly, if they avoid drawing the conclusions of preliminary syllogisms and leave them obscure, after making the necessary assumptions; and secondly, if the points asked to be conceded are not closely associated, but are as far as possible unconnected by middle terms. E.g., let it be required to establish that A is predicated of F, the middle terms being B, C, D and E. Then we should ask whether A applies to B; and next, not whether B applies to C, but whether D applies to E, and then whether B applies to C; and so on with the remaining terms. If the syllogism is effected by means of one middle term, we should begin with the middle; for in this way the effect of the concession will be least apparent.

XX. Since we comprehend when and with what combinations of terms a syllogism results, it is evident also when refutation will or will not be possible. Refutation may take place whether all the propositions are conceded or the answers alternate (i.e. one being negative and one affirmative); for we have
ἀδύνατον γίγνεσθαι δ' εἴη συλλογισμός πάντων τῶν ὅρων στερητικῶν, ἀνάγκη γίγνεσθαι ἔλεγχον. ὥστε μὴν ἔλεγχος ὡσαύτως δὲ καὶ εἰ μηδὲν τεθείη κατὰ τὴν ἀπόκρυσιν ἐν ὅλω. ὁ γὰρ αὐτὸς ἔσται διορισμὸς ἔλεγχον καὶ συλλογισμοῦ.

XXI. Συμβαίνει δ' ἐνίοτε, καθάπερ ἐν τῇ θέσῃ τῶν ὅρων ἀπατώμεθα, καὶ κατὰ τὴν ὑπόληψιν γίγνεσθαι τὴν ἀπάτην, οὖν εἰ εἴδοξαται τὸ αὐτὸ πλείουσι πρῶτοι, ὑπάρχειν, καὶ τὸ μὲν λεληθέναι τινὰ καὶ οἰκεῖοι μηδενὶ ὑπάρχειν, τὸ δὲ εἰδώλαι. ἐστοι γὰρ τὸ A τῷ B καὶ τῷ Γ καθ' αὐτὰ ὑπάρχον, καὶ ταῦτα παντὶ τῷ Δ ὡσαύτως εἰ δὴ τῷ μὲν B τὸ A παντὶ οἰκεῖαι ὑπάρχειν καὶ τότῳ τῷ Δ, τῷ δὲ Γ τὸ A μηδενὶ καὶ τούτῳ τῷ Δ παντὶ, τούτῳ αὐτοῦ κατὰ ταὐτὸν ἔξει ἐπιστήμην καὶ ἀγνοιαν. πάλιν εἰ τις ἀπατηθεὶς περὶ τὰ ἐκ τῆς αὐτῆς συστοιχίας, οὖν εἰ τὸ A ὑπάρχει τῷ B, τούτῳ δὲ τῷ Γ καὶ τῷ Γ τῷ Δ, ὑπολαμβάνοι δὲ τὸ A παντὶ τῷ B ὑπάρχειν καὶ πάλιν μηδενὶ τῷ Γ· ἀμα γὰρ εἰσεῖσται τε καὶ οὐκ ὑπολήψεται ὑπάρχειν. ἃρ όν οὐδὲν ἄλλο ἀξιοὶ εἰ

1 εἰν ἐμ: f unloq.  
2 πρῶτος] πρῶτως B²C⁴m.

*a* i.e. a syllogism may have both premises affirmative or one affirmative and one negative.

b 41 b 6.

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seen that a syllogism results both with the former and with the latter arrangement of terms.\textsuperscript{a} Hence if the admitted proposition is contrary to the conclusion, refutation must result, since refutation is a syllogism which proves the contradictory conclusion. If, however, nothing is conceded, refutation is impossible; for we have seen \textsuperscript{b} that when all the terms \textsuperscript{c} are negative there is no syllogism, and therefore no refutation either. For refutation necessarily implies a syllogism, but a syllogism does not necessarily imply refutation. So too if the answer posits no universal relation; for the same definition will apply to refutation as to syllogism.\textsuperscript{d}

XXI. Just as we are sometimes mistaken in setting out the terms, so it sometimes happens that a mistake occurs in our thought about them; \textit{e.g.}, if the same predicate may apply to more than one subject immediately, and someone, knowing one subject, forgets the other and thinks that the predicate applies to none of it. For example, let A be applicable to B and C \textit{per se}, and let B and C apply in the same way to all D. Then if he thinks that A applies to all B and B to D, but that A applies to no C and C applies to all D, he will have knowledge and ignorance of the same thing in relation to the same thing. So again supposing that someone should be mistaken about terms in the same series,\textsuperscript{e} \textit{e.g.}, if A applies to B, B to C and C to D, and should suppose that A applies to all B but on the contrary to no C; he will at the same time know that it applies and not think that it does so. Does he then actually profess, as a result

\textsuperscript{a} \textit{i.e.} both premisses.

\textsuperscript{b} \textit{i.e.} terms contained in the same genus and subordinate one to another. \textit{Cf.} Bonitz, \textit{Index Arist.} 736 b 33.

\textsuperscript{d} 41 b 6.
τούτων ἢ ὅ ἐπίσταται, τούτῳ μὴ ὑπολαμβάνειν; ἐπίσταται γάρ πως ὅτι τὸ Α τῷ Γ' ὑπάρχει διὰ τοῦ Β, ὡς τῇ καθόλου τὸ κατὰ μέρος, ὡστε ὅ πως ἐπίσταται, τούτῳ ὅλῳ μὴ ὑπολαμβάνειν ὅπερ ἀδύνατον.

Ἐπὶ δὲ τοῦ πρότερον λεχθέντος, εἰ μὴ ἐκ τῆς αὐτῆς συστοιχίας τὸ μέσον, καθ᾽ ἐκάτερον μὲν τῶν μέσων ἄμφοτέρας τὰς προτάσεις οὐκ ἐγχωρεῖ ὑπολαμβάνειν, οἷον τὸ Α τῷ Β μὲν Β παντὶ τῷ δὲ Γ μηδενί, ταῦτα δ᾽ ἄμφοτερα παντὶ τῷ Δ. συμβαλλεῖ γὰρ ἡ ἀπλῶς ἡ ἐπὶ τι ἑναντίαι λαμβάνεσθαι τὴν ω πρώτην προτάσεων. εἰ γὰρ ϕ τὸ Β ὑπάρχει, παντὶ τὸ Α ὑπολαμβάνει ὑπάρχειν, τὸ δὲ Β τῷ Δ οἴεται, καὶ ότι τῷ Δ τὸ Α οἴεται ὅστ᾽ εἰ πάλιν ϕ τὸ Γ μηδενὶ οἴεται τὸ Α ὑπάρχειν, ϕ τὸ Β τῳ ὑπάρχει, τούτῳ οὐκ οἴεται τὸ Α ὑπάρχειν. τὸ δὲ παντὶ οἰόμενον ϕ τὸ Β πάλιν τῳ μὴ οἴοσθαι ϕ τὸ Β ς ἰ ἀπλῶς ἡ ἐπὶ τι ἑναντίον ἑστῶν.

Οὕτω μὲν οὖν οὐκ οἴδεται ὑπολαβεῖν· καθ᾽ ἐκάτερον δὲ τὴν μίαν μὴ κατὰ θάτερον ἄμφοτέρας οὐδὲν κωλύει, οἷον τὸ Α παντὶ τῷ Β καὶ τῷ Β τῷ Δ, καὶ πάλιν τῷ Α μηδενὶ τῷ Γ. οἷον γὰρ ἡ τουιατῆ ἀπάτη καὶ ως ἀπατώμεθα περὶ τὰ ἐν μέρει. οἶον εἰ τῷ Β παντὶ τῷ Α ὑπάρχει τὸ δὲ Β τῷ Γ παντὶ, τῷ Α παντὶ τῷ Γ ὑπάρξει. εἰ οὖν τοις οἴδεν ότι τῷ Α ϕ τῷ Β ὑπάρχει παντὶ, οἴεται καὶ τῷ τῷ Γ. ἀλλ᾽ οὐδὲν κωλύει ἀγνοεῖν τῷ Α ὅτι θοτὶ θοτὶ θοτὶ θοτὶ θοτὶ θοτὶ, οἶον εἰ τῷ μὲν Α δύο ὀρθαὶ τῷ δ᾽ εφ᾽ ἐφ᾽ ἐφ᾽ Β τρέγωνον τῷ δ᾽
of this, that he does not think that which he knows? For he knows in a sense that A applies to C through B, as the particular applies to the universal; so that he professes not to think at all that which he in a sense knows; which is impossible.

With regard to the first case which we mentioned,\(^a\) where the middle term does not belong to the same series, it is impossible to think both the premisses with reference to each of the middle terms: e.g., to think that A applies to all B but to no C, and that both the latter apply to all D; for it follows that the first premiss is contrary, either wholly or in part, to the other. For if anyone supposes that A applies to all of that to which B applies, and knows that B applies to D, he knows also that A applies to D. Hence if, again, he thinks that A applies to none of that to which C applies, he does not think that A applies to some of that \(^b\) to which B applies. But to think that it applies to all of that to which B applies, and then again to think that it does not apply to some of that to which B applies, implies a contrariety, either absolute or partial.

Thus it is not possible to think in this way; but there is no reason why one should not think one premiss with reference to each middle term, or both premisses with reference to one: e.g., think that A applies to all B and B to D, and again that A applies to no C. Such a mistake is similar to that which we make with respect to particular things. E.g., if A applies to all B and B to all C, A will apply to all C. Then if someone knows that A applies to all of that to which B applies, he knows also that it applies to C. But there is no reason why he should not be ignorant that C exists: e.g., if A stands for 'two right angles,' it is impossible to hold opinions which are really contrary.
ἡ εἶναι τὸ Γ,, εἰδὰ ὅτι πᾶν τρίγωνον ἔχει δύο ὀρθάς, ὡσθ' ἀμα εἰσεται καὶ ἀγνοήσει ταυτόν. τὸ γὰρ εἰδέναι πᾶν τρίγωνον ὅτι δύο ὀρθαῖς οὕχ ἀ- πλοῦν ἐστίν, ἀλλὰ τὸ μὲν τῷ τὴν καθόλου ἔχει̣ ἐπιστήμην τὸ δὲ τὴν καθ' ἕκαστον. οὕτω μὲν οὖν 20 ὡς τῇ καθόλου οἷς τὸ Γ ὅτι δύο ὀρθαί, ὡς δὲ τῇ καθ' ἕκαστον οὐκ οἴδηε, ὡστ' οὖχ ἔξει τὰς ἐναντίας.

Ὅμοιως δὲ καὶ ὁ ἐν τῷ Μένωνι λόγοι ὅτι ἡ μάθησις ἀνάμιμης. οὐδαμοῦ γὰρ συμβαίνει προ- επίστασθαι τὸ καθ' ἕκαστον, ἀλλ' ἀμα τῇ ἐπαγωγῇ λαμβάνει τὴν τῶν κατὰ μέρος ἐπιστήμην ῥοσί̣ 25 ἀναγινωρίζοντας. ἔνα γὰρ εἰδὺς ἵσμεν, οἷς ὅτι δύο ὀρθαῖς, εἶνει εἰσέχεις ὅτι τρίγωνον. ὁμοίως δὲ καὶ ἐπὶ τῶν ἄλλων.

Τῇ μὲν οὖν καθόλου θεωροῦμεν τὰ ἐν μέρει, τῇ δ' οἰκεία οὐκ ἵσμεν, ὡστ' εὑδέχεται καὶ ἀπατάσθαι περὶ αὐτά, πλὴν οὖκ ἐναντίως, ἀλλ' ἔχεω μὲν τὴν 30 καθόλου ἀπατάσθαι δὲ τῇ κατὰ μέρος.

Ὅμοιως οὖν καὶ ἐπὶ τῶν προειρημένων: οὐ γὰρ ἐναντία ἢ κατὰ τὸ μέσον ἀπάτη τῇ κατὰ τὸν συλ- λογισμὸν ἐπιστήμην, οὐδ' ἡ καθ' ἐκάτερον τῶν

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* i.e. a given drawing or other representation of a triangle.
* i.e. knowledge of the particular object.
* That is, the universal rule may be recognized apart from special knowledge of all the particular instances of it. Ignorance of the latter is not incompatible with knowledge of the former.
* Plato, *Meno* 81. The point of the comparison is that on the Platonic view the study of particulars reawakens our latent knowledge of the universal.
* Se. of immediate apprehension.
* 66 b 20-30.
B for 'triangle' and C for 'sensible triangle,' because a man might suppose that C does not exist, although he knows that every triangle has the sum of its angles equal to two right angles; so that he will at once know and not know the same thing. For to know that every triangle has the sum of its angles equal to two right angles has more than one meaning; it consists either in having universal or in having particular knowledge. Thus by universal knowledge he knows that C is equal to two right angles, but he does not know it by particular knowledge; and therefore his ignorance will not be contrary to his knowledge.

Similarly too with the theory in the Meno that learning is recollection. For in no case do we find that we have previous knowledge of the individual, but we do find that in the process of induction we acquire knowledge of particular things just as though we could remember them; for there are some things which we know immediately: e.g., if we know that X is a triangle we know that the sum of its angles is equal to two right angles. Similarly too in all other cases.

Thus whereas we observe particular things by universal knowledge, we do not know them by the knowledge peculiar to them. Hence it is possible to be mistaken about them, not because we have contrary knowledge about them, but because, although we have universal knowledge of them, we are mistaken in our particular knowledge.

Similarly too in the cases mentioned above. The mistake with regard to the middle term is not contrary to the knowledge obtained by the syllogism, nor are the suppositions with regard to the two middle
μέσων ὑπόληψις. οὐδὲν δὲ κωλύει εἰδότα καὶ ὁτι
tὸ Α ὅλω τῷ Β ὑπάρχει καὶ πάλιν τοῦτῳ τῷ Γ, 35
οἰηθήναι μὴ ὑπάρχειν τὸ Α τῷ Γ, οἷον ὅτι πᾶσα
ήμιονος ἀτοκος καὶ αὐτή ημίονος οἴουθαι κύκω
ταῦτην· οὐ γὰρ ἐπίσταται ὅτι τὸ Α τῷ Γ μὴ 
συν-
θεωρῶν τὸ καθ’ ἑκάτερον. ὥστε δὴλον ὅτι καὶ εἰ
tὸ μὲν οἶδε τὸ δὲ μὴ οἶδεν ἀπατηθῆσαι ὑπερ
ἔχουσιν αἱ καθόλου πρὸς τὰς κατὰ μέρος ἐπιστήμας.
67 ὃνδε γὰρ τῶν αἰσθητῶν ἐξω τῆς αἰσθήσεως γενό-
μενον ἴσαν, οὐδ’ ἂν ᾑσθημένοι τυχχάνωνεν, εἰ μὴ
ὡς τῷ καθόλου καὶ τῷ ἐχειν τῇ οἰκείᾳ ἐπιστήμην,
ἄλλ’ οὐχ ὡς τῷ ἐνεργείν. τὸ γὰρ ἐπιστάσθαι
λέγεται τριγώς, ἡ ὡς τῇ καθόλου ἡ ὡς τῇ οἰκείᾳ
5 ὥς τῷ ἐνεργείν, ὥστε καὶ τὸ ἡπατήσθαι τοσ-
αυταχῶς.

Οὐδὲν οὖν κωλύει καὶ εἰδέναι καὶ ἡπατήσθαι περὶ
tαυτῶ, πλὴν οὐκ ἐναντίως. ὑπερ συμβαίνει καὶ τῷ
καθ’ ἑκάτερον εἰδότι τῇ πρότασι καὶ μὴ ἐπεσκεμ-
μένω πρότερον ὑπολαμβάνων γὰρ κύκω τῇ ἡμί-
10 οὖν οὐκ ἔχει τῇ κατὰ τὸ ἐνεργείν ἐπιστήμην, οὐδ’
ἀυ διὰ τὴν ὑπόληψιν ἐναντίων ἀπάτην τῇ ἐπιστήμη-
ναυταχῶς. τὸ γὰρ ἐπιστάσθαι τοσ-

67 a

We may have knowledge of a particular object which we
have seen, but if we are not now aware of the object we are
not exercising that knowledge.

b This apparently means that if the error in question were
really contrary to the man's knowledge, he would have to
know not only that all mules are sterile but also that no mules
are sterile, and his judgement that the particular mule is in
foal would depend syllogistically upon the latter premiss. In
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terms contrary. There is no reason why a man who knows both that A applies to the whole of B and again that B applies to C should not think that A does not apply to C: e.g., if he knows that every mule is sterile, and that X is a mule, he may think that X is in foal; because he does not comprehend that A applies to C, unless he considers both premisses in conjunction. Hence it is clear that he will also be mistaken if he knows the one but not the other; and this is just the relation of universal to particular knowledge. For we do not know any object of sense when it occurs outside our sensation—not even if we have actually perceived it—except by universal knowledge together with the possession, but not the actuality, of the knowledge proper to that object. For there are three ways in which we can be said to know an object: by universal knowledge; by the knowledge proper to the object; and in actuality. Hence we can be said to be mistaken in as many different ways.

Thus there is no reason why one should not both know and be mistaken about the same thing; only not in a contrary sense. Indeed this is just what happens in the case of the man who only knows the premisses in disjunction and has not previously considered the question; for in supposing that the mule is in foal he does not possess actual knowledge, yet at the same time this supposition does not make his mistake contrary to his knowledge; for the mistake contrary to knowledge of the universal is a syllogism.

On the other hand he who thinks that the essence of good is the essence of bad will think that the same reality, however, his error depends not upon syllogism but upon faulty perception.
τὸ αὐτὸ ὑπολήψεται ἀγαθῷ εἶναι καὶ κακῷ. ἂστω γὰρ τὸ μὲν ἀγαθῷ εἶναι ἐφ᾽ οὗ A, τὸ δὲ κακῷ εἶναι ἐφ᾽ οὗ B, πάλιν δὲ τὸ ἀγαθῷ εἶναι ἐφ᾽ οὗ Γ. ἔπει οὖν ταὐτὸν ὑπολαμβάνει τὸ B καὶ τὸ Γ, καὶ εἶναι τὸ Γ τὸ B ὑπολήψεται, καὶ πάλιν τὸ B τὸ A εἶναι ὑσαύτως, ὡστε καὶ τὸ Γ τὸ A. ὥσπερ γὰρ εἰ ἦν ἀληθὲς καθ᾽ οὗ τὸ Γ τὸ B καὶ καθ᾽ οὗ τὸ B τὸ A, καὶ κατὰ τοῦ Γ τὸ A ἀληθὲς ἦν, οὕτω καὶ ἐπὶ τοῦ ὑπολαμβάνειν. ὦμοιως δὲ καὶ ἐπὶ τοῦ εἶναι ταὐτὸν γὰρ ὅτι τοῦ Γ καὶ Β, καὶ πάλιν τοῦ Β καὶ Α, καὶ τὸ Γ τῷ Α ταὐτὸν ἦν· ὡστε καὶ ἐπὶ τοῦ δοξάζειν ὦμοιως. ἀρ' οὖν τούτο μὲν ἀναγκαῖον, εἰ τὰς δώσει τὸ πρῶτον; ἂλλ' ἕσως ἐκεῖνο φεύγει, τὸ ὑπολαμβάνειν τινὰ κακῷ εἶναι τὸ ἀγαθῷ εἶναι, εἰ μὴ κατὰ συμβεβηκός· πολλαχῶς γὰρ ἐγχωρεῖ τοὐθ' ὑπολαμβάνειν. ἐπισκεπτέον δὲ τούτο βέλτιον.

XXII. Ὅταν δ᾽ ἀντιστρέφῃ τὰ ἄκρα, ἀνάγκη καὶ τὸ μέσον ἀντιστρέφειν πρὸς ἅμα. εἰ γὰρ τὸ A κατὰ τοῦ Γ διὰ τοῦ Β ὑπάρχει, εἰ ἀντιστρέφει καὶ ὑπάρχει, ὡς τὸ A, παντὶ τὸ Γ, καὶ τὸ B τῷ A ἀντιστρέφει, καὶ ὑπάρχει, ὡς τὸ A, παντὶ τὸ B διὰ μέσου τοῦ Γ, καὶ τὸ Γ τῷ Β ἀντιστρέφει διὰ μέσου τοῦ Α. καὶ ἐπὶ τοῦ μὴ ὑπάρχειν ὑσαύτως, οὗτον εἰ τὸ B τῷ Γ ὑπάρχει τῷ δὲ B τὸ A μὴ ὑπάρχει, οὕτω τὸ A τῷ Γ οὐχ ὑπάρχει. εἰ δὲ τὸ B τῷ A ἀντιστρέφει, καὶ τὸ Γ τῷ A ἀντιστρέφει. ὅστω γὰρ τὸ

* There is no obvious reference either here or in l. 22.
* The obligation is not discharged in the logical works, but cf. Met. IV. (Γ) iv.
* i.e. have the same extension and so are interchangeable.
thing is the essence of good and the essence of bad. Let A stand for 'essence of good,' B for 'essence of bad,' and C again for 'essence of good.' Then since he thinks B and C to be identical, he will also think that C is B, and again in the same way that B is A, and therefore also that C is A (for just as we saw that if B is true of C and A of B, A is also true of C, so it is in respect of thinking. Similarly too in respect of being; for we have seen that if C and B are identical and again B and A are identical, C is also identical with A. Therefore the same holds in the case of opinion). Is this then a necessary consequence, if one grants the original assumption? But presumably it is false that anyone should think that the essence of good is the essence of bad, except accidentally; for there are several senses in which this may be thought. But we must consider this question in greater detail.

XXII. When the extreme terms are convertible, the middle term must also be convertible with both of them. For supposing that A applies as predicate to C through B, if this relation is convertible and C applies to all of that to which A applies, then B is also convertible with A, and applies through C as middle term to all of that to which A applies; and C is convertible with B through A as middle term. So too when the conclusion is negative; e.g., if B applies to C but A does not apply to B, neither will A apply to C. Then if B is convertible with A, C will also be convertible with A. For let B not be appli-

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Conversion of terms.
(1) Affirmative syllogisms.

(2) Negative syllogisms.

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The syllogisms are as follows:

(a) BaA  (b) CaB  (c') AaC
(b) CaB  (c') AaC  (a) BaA

(c) CaA  (a') AaB  (b') BaC
ἈΡΙΣΤΟΤΗΛΕ

67 b

Β μὴ ὑπάρχον τῷ Α· οὐδ' ἄρα τὸ Γ· παντὶ γὰρ τῷ Β ὑπήρχει. καὶ εἰ τῷ Β τὸ Γ ἀντιστρέφει, καὶ τῷ Α ἀντιστρέφει· καθ'o οὐ γὰρ ἀπαντος τῷ Β, καὶ τῷ Γ. καὶ εἰ τὸ Γ πρός τὸ Α ἀντιστρέφει, καὶ τῷ Β ἀντιστρέφει [πρὸς τὸ Α].

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φ' γὰρ τὸ Γ πρὸς τὸ Β· τῷ Γ, ὥ δὲ τῷ Α τῷ Γ οὖχ ὑπάρχει. καὶ μοῦνον τοῦτο ἀπὸ τοῦ συμπεράσματος ἄρχεται, τὰ δ' ἄλλα οὐχ ὁμοίως καὶ ἐπὶ τοῦ κατηγορικοῦ συλλογισμοῦ.

Πάλιν εἰ τῷ Α καὶ τῷ Β ἀντιστρέφει καὶ τῷ Γ καὶ τῷ Δ ωσαύτως, ἀπαντὶ δ' ἀνάγκη τῷ Α ἢ τῷ Γ ὑπάρχειν, καὶ τῷ Β καὶ Δ οῦτως ξεία ὑστε παντὶ βάτερον ὑπάρχειν. ἔπει γὰρ ὁ τῷ Α τῷ Β, καὶ ὁ τῷ Γ τῷ Δ, παντὶ δὲ τῷ Α ἢ τῷ Γ καὶ οὖχ ἄμα, φανερὸν ότι καὶ τῷ Β ἢ τῷ Δ παντὶ καὶ οὖχ ἄμα. οἶον εἰ τὸ ἀγένητον ἀφθαρτὸν καὶ τὸ ἀφθαρτὸν ἀγένητον, ἀνάγκη τῷ γενόμενῳ φθαρτῶν καὶ τῷ φθαρτῶν γεγονέναι. δύο γὰρ συλλογισμοὶ συγκειταί. πάλιν εἰ παντὶ μεν τῷ Α ἢ τῷ Β καὶ τῷ Γ ἢ τῷ Δ, ἄμα δὲ μὴ ὑπάρχει, εἰ ἀντιστρέφει τῷ Α καὶ τῷ Γ, καὶ τῷ Β καὶ τῷ Δ ἀντιστρέφει. εἰ γὰρ τοι οὐκ ὑπάρχει τῷ Β ὁ τῷ Δ, δῆλον ότι τῷ Α ὑπάρχει. εἰ

2 ἀντιστρέφει, καὶ τῷ Β] ἀντιστρέφει [καὶ τῷ Β], καὶ τῷ Β Jenkinson.
3 πρὸς τῷ Α Ε, πρὸς τῷ Α δειλοῦτι supra lineam C': om. codd.

* AeC may be proved by a syllogism in Camestres, but cf. the following note.
* It seems better to keep the ms. reading τῷ Α than to accept τῷ Β on the authority of Pacius. His reading requires a proof that no Α is Β; and whereas his argument is generally condemned as too complicated, the syllogism in 508
cable to A; then neither will C be applicable, for B was assumed to apply to all C. Moreover, if C is convertible with B, it is also convertible with A; for where B is predicated of all, so too is C. Again, if C is convertible in relation to A, so too is B; for C applies to that to which B applies, but does not apply to that to which A applies. This is the only example which starts from the conclusion; the others differ in this respect from the affirmative syllogism.

Again, if A and B are convertible, and likewise C and D, and either A or C must apply to everything, B and D must also be so related that one or the other applies to everything. For since B applies to that to which A applies, and D to that to which C applies, and either A or C but not both at once must apply to everything: it is evident that either B or D, but not both at once, must apply to everything. E.g., if the ungenerated is imperishable and the imperishable ungenerated, that which has been generated must be perishable, and that which is perishable must have been generated; for we have here the product of two syllogisms. Again, if either A or B (but not both at once) applies to everything, and likewise either C or D, if A and C are convertible, so are B and D. For if B does not apply to something to which D applies, Celarent offered by modern expositors only proves the converse, viz. that no B is A. Hence although the proof which the ms. reading implies, that no A is C, is unattainable by syllogism, I am disposed to agree with Waitz and Maier that Aristotle bases his argument simply upon the interchangeability of the convertible terms B and C. So in the next example also.

* Since this example illustrates the case which follows and not that which precedes it, either the text or Aristotle’s thought appears to be in disorder. Hence it is hard to say what the ‘two syllogisms’ are; but cf. the next note.
δὲ τὸ Α, καὶ τὸ Γ' ἀντιστρέφει γάρ· ὡστε ἀμα τὸ Γ καὶ Δ. τούτῳ δ' ἀδύνατον.

"Ὅταν δὲ τὸ Α ὀλω τῷ Β καὶ τῷ Γ ὑπάρχῃ καὶ μηδενὸς ἄλλου κατηγορήται, ὑπάρχῃ δὲ καὶ τὸ B παντὶ τῷ Γ', ἀνάγκη τὸ Α καὶ Β ἀντιστρέφει· ἐπεὶ γὰρ κατὰ μόνων τῶν ΒΓ λέγεται τὸ Α, κατηγο-

20 ρεῖται δὲ τὸ Β καὶ αὐτὸ αὐτοῦ καὶ τοῦ Γ, φανέρου ὅτι καθ' ὄν τὸ A καὶ τὸ Β λεχθήσηται πάντων πλὴν αὐτοῦ τοῦ Α.

Πάλιν ὅταν τὸ Α καὶ τὸ Β ὀλω τῷ Γ ὑπάρχῃ, ἀντιστρέφη δὲ τὸ Γ τῷ Β, ἀνάγκη τὸ Α παντὶ τῷ Β ὑπάρχει· ἐπεὶ γὰρ παντὶ τῷ Γ τὸ Α, τὸ δὲ

25 Γ τῷ Β διὰ τὸ ἀντιστρέφει, καὶ τὸ Α παντὶ τῷ B ὑπάρξει.

"Ὅταν δὲ δυοῖν ὄντων τὸ Α τοῦ Β αἱρετώτερον ἢ, ὄντων ἀντικειμένων, καὶ τὸ Δ τοῦ Γ ὑσαύτως, εἰ αἱρετώτερα τὰ ΑΓ τῶν BD, τὸ A τοῦ Δ αἱρετώ-

30 τερον. ὁμοίως γὰρ διωκτὸν τὸ Α καὶ φευκτὸν τὸ Β (ἀντικείμενα γάρ), καὶ τὸ Γ τοῦ Δ (καὶ γάρ ταῦτα ἀντίκειναι). εἰ οὖν τὸ Α τῷ Δ ὀμοίως αἱρετόν, καὶ τὸ B τῷ Γ φευκτὸν· ἐκάτερον γὰρ ἐκατέρω ὀμοίως, φευκτὸν διωκτῷ· ὡστε καὶ τὰ ἁμφότερα τὰ ΑΓ τοῖς BD. ἐπεὶ δὲ μᾶλλον, οὐχ οἶν τι ὁμοίως· καὶ γὰρ ἄν τὰ BD ὀμοίως ἔστω. εἰ δὲ τὸ Δ τοῦ A αἱρετώτερον, καὶ τὸ B τοῦ Γ ἄρττον φευκτὸν· τὸ

25 γάρ ἐλαττών τῷ ἐλαττοῦν ἀντίκειται. αἱρετώτερον δὲ τὸ μείζον ἀγαθὸν καὶ ἐλαττῶν κακὸν ἢ τὸ ἐλαττὸν ἀγαθὸν καὶ μείζον κακὸν· καὶ τὸ ἀπαν ἀρα τὸ BD αἱρετώτερον τοῦ ΑΓ. νῦν δ' οὐκ ἔστιν. τὸ A ἀρα

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clearly A applies to it; and if A applies, so does C, since they are convertible. Therefore C and D both apply at once; but this is impossible.

When A applies to the whole of B and of C, and is predicated of nothing else, and B also applies to all C, A and B must be convertible. For since A is stated only of B and C, and B is predicated both of itself and of C, it is evident that B will also be stated of all subjects of which A is stated, except A itself.

Again, when A and B apply to the whole of C, and C is convertible with B, A must apply to all B. For since A applies to all C, and C by conversion to B, A will also apply to all B.

When, of two opposite alternatives A and B, A is preferable to B, and similarly D is preferable to C, if A and C together are preferable to B and D together, A is preferable to D. For A is as much to be pursued as B is to be avoided, since they are opposites; and similarly with C and D, since they also are opposites. Then if A is as much to be chosen as D, B is as much to be avoided as C; since each is equally with each to be pursued or avoided respectively. Therefore the combination AC is equally desirable with the combination BD. But since AC is preferable, it cannot be equally desirable, for if so, BD would be equally desirable. And if D is preferable to A, B will also be less to be avoided than C; for the lesser is opposed to the lesser extreme; and the greater good and lesser evil will be preferable to the lesser good and greater evil. Therefore the combination BD will be preferable to AC. But in

"Sc. 'and therefore B applies to all D. Similarly D applies to all B. Therefore B and D are convertible.'"
ἈΡΙΣΤΟΤΕΛΕΣ

68 a

αἱρετώτερον τοῦ Δ, καὶ τὸ Γ ἀρα τοῦ Β ήττον

φευκτόν.

40 Εἰ δὴ ἐλοίτο πάς ὁ ἐρών κατὰ τὸν ἔρωτα τὸ Α

τὸ οὕτως ἔχειν ὡστε χαρίζονται καὶ τὸ μή χαρίζο-

σθαι τὸ ἐφ' οὖ Γ, ἡ τὸ χαρίζονται τὸ ἐφ' οὖ Δ καὶ

68 b τὸ μὴ τοιοῦτον εἶναι οἷον χαρίζονται τὸ ἐφ' οὖ Β,

δήλον ὅτι τὸ Α τὸ τοιοῦτον εἶναι αἱρετώτερον ἰστιν

ἡ τὸ χαρίζονται. τὸ ἀρα φιλεῖον τῆς συνούσιας

αἱρετώτερον κατὰ τὸν ἔρωτα. μᾶλλον ἂρα ὁ ἐρως

5 ἐστὶ τῆς φιλίας ἡ τοῦ συνείναι: εἰ δὲ μάλιστα τού-

του, καὶ τέλος τοῦτο. τὸ ἀρα συνείναι ἡ οὐκ ἰστιν

ὅλως ἡ τοῦ φιλεῖον ἑνεκεν καὶ γὰρ αἱ ἂλλαι

ἐπιθυμεῖαι καὶ τέχναι οὕτως.  

XXIII. Πῶς μὲν οὖν ἔχουσιν οἱ ὁρᾶ κατὰ τὰς

ἀντιστροφὰς καὶ τὸ φευκτότερον ἣ αἱρετώτερον

10 εἶναι, φαινεῖν ὅτι δ' οὐ μόνον οἱ διαλεκτικοὶ καὶ

ἀποδεικτικοὶ συναξομοί διὰ τῶν προειρημάτων

γίνονται σχημάτων, ἄλλα καὶ οἱ ῥητορικοὶ καὶ

άπλως ἡ τισοῦν πίστις καὶ ἡ καθ' ὀποίαν μεθο-

δον, νῦν ἄν εἰ δὲ λεκτένων ἄπαντα γὰρ πιστεύομεν ἃ

διὰ συναξομοί ἢ καὶ ἐπαγωγῆς.

15 Ἐπαγωγή μὲν οὖν ἐστὶ καὶ ἢ ἐπαγωγῆς

συναξομοί τὸ διὰ τοῦ ἐτέρου δάτερον ἀκρον τῶ

μέσῳ συναξισθαι, οἷον εἰ τῶν ΑΓ μέσον τὸ Β,

diὰ τοῦ Γ δεῖξαί τὸ Α τῷ Β ὑπάρχειν οὕτω γὰρ

ποιούμεθα τὰς ἑπαγωγὰς. οἷον ἔστω τὸ Α μικρό-

20 βιον, τὸ δ' ἐφ' ψ' Β τὸ χολῆν μὴ ἔχουν, ἐφ' ψ' δὲ Γ

1 χαρίζονθαι Λαμ.  1 οὕτως] οὕτως γίνονται αἰσθ. Λαμ. 

2 φευκτότερον ἢ (ἡ καὶ Κ) αἱρετώτερον ABC: αἱρετώτερον ἢ φευκτότερον mf, Bekker: αἱρετώτερον ἢ φευκτότερον n.

* For the distinction between dialectical and demonstrative reasoning cf. 24 a 22.

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fact it is not. Therefore A is preferable to D, and therefore C is less to be avoided than B.

If then every lover under the influence of his love would prefer his beloved to be disposed to gratify him (A) without doing so (C), rather than gratify him (D) without being inclined to do so (B), clearly A —that the beloved should be so inclined—is preferable to the act of gratification. Therefore in love to have one’s affection returned is preferable to intercourse with the beloved. Therefore love aims at affection rather than at intercourse; and if affection is the principal aim of love, it is also the *end* of love. Therefore intercourse is either not an end at all, or only with a view to receiving affection. The same principle, indeed, governs all other desires and arts.

**XXIII.** It is evident, then, how the terms are conditioned as regards conversions and as representing degrees of preferability and the reverse. We must now observe that not only dialectical and demonstrative syllogisms are effected by means of the figures already described, but also rhetorical syllogisms and in general every kind of mental conviction, whatever form it may take. For all our beliefs are formed either by means of syllogism or from induction.

Induction, or inductive reasoning, consists in establishing a relation between one extreme term and the middle term by means of the other extreme; *e.g.*, if B is the middle term of A and C, in proving by means of C that A applies to B; for this is how we effect inductions. *E.g.*, let A stand for ‘long-lived,’ B for ‘that which has no bile’ and C for the long-lived

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*b* For rhetorical arguments *cf.* *An. Post.* 71 a 9-11.
τὸ καθ’ ἐκαστὸν μακρόβιον, οἷον ἄνθρωπος καὶ ἰππὸς καὶ ἡμίωνος. τῷ δὲ Γ ὑπάρχει τὸ Α· πάν γαρ τὸ ἄχολον μακρόβιον. ἀλλὰ καὶ τὸ Β, τὸ μὴ ἔχον χολήν, παντὶ ὑπάρχει τῷ Γ. εἰ οὖν ἀντιστρέψει τὸ Γ τῷ Β καὶ μὴ ὑπερτεύσει τὸ μέσον, ἕτειν ἐστὶ τοῦ Α τῷ Β ὑπάρχειν· διδεικται γὰρ πρότερον ὅτι ἂν δύο ἁπτά τῷ αὐτῷ ὑπάρχῃ καὶ πρὸς θάτερον αὐτῶν ἀντιστρέφῃ τὸ ἄκρον, ὅτι τῷ ἀντιστρέφοντι καὶ θάτερον ὑπάρχει τῶν κατηγορομένων, δει δὲ νοεῖν τὸ Α τὸ εὐ ἄπαντων τῶν καθ’ ἐκαστὸν συγκείμενον· ἡ γὰρ ἐπαγωγὴ διὰ πάντων. 10 Ἡςτι δ’ ὁ τοιοῦτος συλλογισμὸς τῆς πρώτης καὶ ἀμέσου προτάσεως· ὃν μὲν γὰρ ἔστι μέσον διὰ τοῦ μέσου ὁ συλλογισμός, ὃν δὲ μὴ ἔστι, δι’ ἐπαγωγῆς. καὶ τρόπον τινὰ ἀντίκειται ἡ ἐπαγωγὴ τῷ συλλογισμῷ· ὃ μὲν γὰρ διὰ τοῦ μέσου τὸ ἄκρον τῷ 20 τρίτῳ δείκνυσιν, ἡ δὲ διὰ τοῦ τρίτου τὸ ἄκρον τῷ μέσῳ. φύσει μὲν οὖν πρότερος καὶ γνωριμώτερος ὁ διὰ τοῦ μέσου συλλογισμός, ἡμιν δ’ ἐναργήστερος ὁ διὰ τῆς ἐπαγωγῆς.

XXIV. Παράδειγμα δ’ ἐστὶν όταν τῷ μέσῳ τὸ ἄκρον ὑπάρχῃ διεισδύεται di οὐ τῆς ὁμοίου τῷ τρίτῳ· 40 δει δὲ καὶ τὸ μέσον τῷ τρίτῳ καὶ τὸ πρώτον τῷ

pav .... μακρόβιον an secludendum?


This statement is a petitio principii; it is also irrelevant here, and should probably be excised.


i.e. B, which is the middle term of the induction. In the sentence which follows, Aristotle has in mind (as Jenkinson points out) two syllogisms: one in Darapti (CaA—CaB, . . BiA) and one—after the conversion of BC—in Barbara (CaA—BaC, . . BaA); but in these B is still called the middle and C the extreme term.
individuals such as man and horse and mule. Then A applies to the whole of C [for every bileless animal is long-lived]. But B, 'not having bile,' also applies to all C. Then if C is convertible with B, i.e., if the middle term is not wider in extension, A must apply to B. For it has been shown above that if any two predicates apply to the same subject and the extreme is convertible with one of them, then the other predicate will also apply to the one which is convertible. We must, however, understand by C the sum of all the particular instances; for it is by taking all of these into account that induction proceeds.

This kind of syllogism is concerned with the first or immediate premiss. Where there is a middle term, the syllogism proceeds by means of the middle; where there is not, it proceeds by induction. There is a sense in which induction is opposed to syllogism, for the latter shows by the middle term that the major extreme applies to the third, while the former shows by means of the third that the major extreme applies to the middle. Thus by nature the syllogism by means of the middle is prior and more knowable; but syllogism by induction is more apparent to us.

XXIV. We have an Example when the major extreme is shown to be applicable to the middle term by means of a term similar to the third. It must be known both that the middle applies to the third term.

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\textit{68 a 21-25.}

\textit{Induction supplies, without the aid of a middle term, the universal proposition which stands as major premiss for purposes of inference.}

\textit{Because the abstract logical process is from universal to particular, but the human mind proceeds from particular to universal. \textit{Cf. Met. VII. (Z) iv. 1029 b 3-12.}}

\textit{Cf. An. Post. 71 a 10, Rhet. 1356 b 3.}
ὁμοίῳ γνώριμον εἶναι ὑπάρχον. οὖν ἦστι τὸ Α
κακόν, τὸ δὲ Β πρὸς ὁμόρους ἀναγράον ὑπαρξον,
εἶναι πόλεμον, ἐφ’ ὦ δὲ Γ τὸ 'Αθηναίους πρὸς Θηβαίους, τὸ δ’
εἶναι Θηβαίους πρὸς Φωκείς. ἐὰν οὖν βουλήσατα
δείξαι ὅτι τὸ Θηβαίους πολεμών κακόν ἦστι, ληπ-
tέον ὅτι τὸ πρὸς τοὺς ὁμόρους πολεμίων κακόν
τούτον δὲ πίστις ἐκ τῶν ὁμοίων, οὖν ὅτι Θηβαίους
ὁ πρὸς Φωκείς. ἐπεὶ οὖν τὸ πρὸς τοὺς ὁμόρους
κακόν, τὸ δὲ πρὸς Θηβαίους πρὸς ὁμόρους ἦστι,
φανερὸν ὅτι τὸ πρὸς Θηβαίους πολεμίων κακόν,
ὅτι μὲν οὖν τὸ Β τῷ Γ καὶ τῷ Δ ὑπάρχει φανερὸν
(ἀμφοὶ γὰρ ἐστὶ πρὸς τοὺς ὁμόρους ἀναγράον
πόλεμον), καὶ ὅτι τὸ Α τῷ Δ (Θηβαίους γὰρ ὁ
συνήθεις ὁ πρὸς Φωκείς πολέμος). ὅτι δὲ τὸ Α
τῷ Β ὑπάρχει διὰ τοῦ Δ διήθησαι. τῶν αὐτῶν
δὲ τρόπων καὶ εἰ διὰ πλειόνων τῶν ὁμοίων ἡ πίστις
γέγονεν τοῦ μέσου πρὸς τὸ ἄκρον.
Φανερὸν οὖν ὅτι τὸ παράδειγμα ἑστὶν ὅτε ὡς
μέρος πρὸς ὅλον οὔτε ὡς ὅλον πρὸς μέρος, ἀλλ’ ὡς
μέρος πρὸς μέρος, ὅταν ἀμφοὶ μὲν ἢ ὑπὸ τοῦτο,
γνώριμον δὲ διατερεῖ. καὶ διαφέρει τῆς ἐπαγωγῆς
ὅτι ἡ μὲν εἰς ἀπάντων τῶν ἁμών τὸ ἄκρον ἑκο-
kνυθεν ὑπάρχειν τῷ μέσῳ καὶ πρὸς τὸ ἄκρον οὐ
συνῆπτε τὸν συλλογισμόν, τὸ δὲ καὶ συνάπτει καὶ
οὐκ εἰς ἀπάντων διείσθεν.
ΧΧ. Ἐπαγωγὴ δ’ ἑστὶν ὅταν τῷ μὲν μέσῳ τὸ
πρῶτον δήλον ἢ ὑπάρχον τῷ δὲ ἐσχατῷ τὸ μέσον
ἀδηλον μὲν, ὁμοίως δὲ πιστών ἢ μάλλον τοῦ συμ-

* Example proceeds neither (like induction) from par-
ticular to general, nor (like syllogism) vice versa, but from
one co-ordinate particular to another.

68 b 27-29.
and that the first applies to the term similar to the third. E.g., let A be 'bad,' B 'to make war on neighbours,' C 'Athens against Thebes' and D 'Thebes against Phocis.' Then if we require to prove that war against Thebes is bad, we must be satisfied that war against neighbours is bad. Evidence of this can be drawn from similar examples, e.g., that war by Thebes against Phocis is bad. Then since war against neighbours is bad, and war against Thebes is against neighbours, it is evident that war against Thebes is bad. Now it is evident that B applies to C and D (for they are both examples of making war on neighbours), and A to D (since the war against Phocis did Thebes no good); but that A applies to B will be proved by means of D. The same method will obtain supposing that our conviction that the middle term is related to the extreme is drawn from more than one similar term.

Thus it is evident that an example represents the relation, not of part to whole or of whole to part, but of one part to another, where both are subordinate to the same general term, and one of them is known. It differs from induction in that the latter, as we saw, shows from an examination of all the individual cases that the (major) extreme applies to the middle, and does not connect the conclusion with the (minor) extreme; whereas the example does connect it and does not use all the individual cases for its proof.

XXV. We have Reduction (1) when it is obvious that the first term applies to the middle, but that the middle applies to the last term is not obvious, yet nevertheless is more probable or not less probable than the conclusion; or (2) if there are not many

\[ 69 \text{a} 7. \]
περάσματος, ἐτὶ ἂν ὀλίγα ἦ τὰ μέσα τοῦ ἐσχάτου καὶ τοῦ μέσου πάντως γὰρ ἐγγύτερον εἶναι ομο- 
βαίνει τῆς ἐπιστήμης. οἶον ἦστω τὸ Α τὸ διδακτὸν, 25 ἐφ’ οὖ Β ἐπιστήμη, τὸ Γ δικαιοσύνη. ἢ μὲν οὖν 
ἐπιστήμη ὅτι διδακτὸν φανέροι. ἢ δ’ ἀρετὴ εἰ 
ἐπιστήμη ἄδηλον. εἰ οὐν ὀμοίως ἢ μάλλον πιστὸν 
τὸ ΒΓ τοῦ ΆΓ, ἀπαγωγή ἦστω ἐγγύτερον γὰρ τοῦ 
ἐπιστασθαι διὰ τὸ προσεληφθέναι, τὴν ΆΓ ἐπι- 
στήμην πρότερον οὐκ ἔχοντας.

“Ἡ πάλιν εἰ ὀλίγα τὰ μέσα τῶν ΒΓ καὶ γὰρ 
οὕτως ἐγγύτερον τοῦ εἰδέναι. οἶον εἰ τὸ Δ εἰς 
τετραγωνιζομαι, τὸ δ’ ἐφ’ ὡς Ε εὐθύγραμμον, τὸ 
δ’ ἐφ’ ὡς Ζ κύκλος: εἰ τοῦ ΕΖ ἐν μόνω εἰς μέσον, 
tὸ μετὰ μηνίσκων ἱσον γίγνεσθαι εὐθύγραμμω τὸν 
κύκλον, ἐγγὺς ἂν εἰς τοῦ εἰδέναι. όταν δὲ μήτε 
πιστότερον ἢ τὸ ΒΓ τοῦ ΆΓ μήτ’ ὀλίγα τὰ μέσα, 
οὐ λέγω ἀπαγωγὴν: οὐδ’ όταν ἄμεσον ἢ τὸ ΒΓ. 
ἐπιστήμη γὰρ τοῦ τοιοῦτον.

XXVI. Ἐνστασις δ’ ἐστὶ πρότασις προτάσει 
ἐναντία. διαφέρει δὲ τῆς προτάσεως ὅτι τὴν μὲν 
ἐνστασιν ἐνδεχεται εἶναι ἐπὶ μέρους, τὴν δὲ προ-
τασιν ἢ ὀλίγων οὐκ ἐνδεχεται ἢ οὐκ ἐν τοῖς καθόλου 
συλλογισμοῖς.

Φέρεται δὲ ἡ ἐνστασις διχῶς καὶ διὰ δύο σχη-
mάτων, διχῶς μὲν ὅτι ἡ καθόλου ἢ ἐν μέρει πᾶσα 
ἐνστασις, ἕκ δύο δὲ σχημάτων ὅτι αὐτοκείμεναι 
φέρονται τῇ προτάσει, τὰ δ’ ἀντικείμενα ἐν τῷ 
προσεληφθέναι, τὴν ΆΓ] προσεληφθέναι τῇ ΆΓ τῷ 
ΒΓ, Pacius, Tricot.

* According to the theory of Hippocrates of Chios; cf. 
Soph. Elench. 171 b 15.

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intermediate terms between the last and the middle; for in all such cases the effect is to bring us nearer to knowledge. (1) E.g., let A stand for 'that which can be taught,' B for 'knowledge' and C for 'morality.' Then that knowledge can be taught is evident; but whether virtue is knowledge is not clear. Then if BC is not less probable or is more probable than AC, we have reduction; for we are nearer to knowledge for having introduced an additional term, whereas before we had no knowledge that AC is true.

(2) Or again we have reduction if there are not many intermediate terms between B and C; for in this case too we are brought nearer to knowledge. E.g., suppose that D is 'to square,' E 'rectilinear figure' and F 'circle.' Assuming that between Εἰ and F there is only one intermediate term—that the circle becomes equal to a rectilinear figure by means of lunules—we should approximate to knowledge. When, however, BC is not more probable than AC, or there are several intermediate terms, I do not use the expression 'reduction'; nor when the proposition BC is immediate; for such a statement implies knowledge.

XXVI. An objection is a premiss which is contrary to another premiss. It differs from the premiss in that it may be particular, whereas the premiss either cannot be particular at all, or at least not in universal syllogisms.

An objection can be brought in two ways and in two figures: in two ways because every objection is either universal or particular, and by two figures because objections are brought in opposition to the

\[ b \] And therefore reduction, which is a method of approximation to knowledge, is out of place.

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πρῶτω καὶ τῷ τρίτῳ σχήματι περαίνονται μόνοις. ὃταν γὰρ ἀξιώσῃ παντὶ ὑπάρχειν, ἀνισόταμορ στὶ σούδεν ἢ ὅτι τινὶ ὑπάρχειν τούτων δὲ τὸ μὲν μηδενὶ ἐκ τοῦ πρῶτου σχήματος, τὸ δὲ τινὶ μὴ ἐκ τοῦ ἐσχάτου. οἷον ἔστω τὸ Λ μίαν ἐλαὶ ἐπιστήμην, ἐφ' ὧν τὸ Β ἐναντία. προτείνατος δὲ μίαν εἴλας τῶν ἐναντίων ἐπιστήμην ἢ ὅτι ἄλλως ὑπὸ ἡ αὐτή τῶν ἀντικειμένων ἐνισταται, τὸ δ' ἐναντία ἀντικείμενα, ὡστε γίγνεται τὸ πρῶτον σχῆμα, ἢ ὅτι τοῦ γνωστοῦ καὶ ἀγνώστου οὐ μίαν. τούτῳ δὲ τὸ τρίτου κατὰ γὰρ τοῦ Γ', τοῦ γνωστοῦ καὶ ἀγνώστου, τὸ μὲν ἐναντία εἴλα ἀλθῆς, τὸ δὲ μίαν αὐτῶν ἐπιστήμην εἴλας θείος.

Πάλιν ἐπὶ τῆς στερητικῆς προτάσεως ἐσοφαύτως ἀξιοῦντος γὰρ μὴ εἴλας μίαν τῶν ἐναντίων ἢ ὅτι πάντων τῶν ἀντικειμένων ἢ ὅτι τινῶν ἐναντίων ἢ αὐτὴ λέγομεν, οἷον ὑγιεινοῦ καὶ νοσώδους: τὸ μὲν οἷς πάντων ἐκ τοῦ πρῶτου, τὸ δὲ τιμῶν ἐκ τοῦ τρίτου σχήματος.

Ἀπλῶς γὰρ ἐν πάσι καθόλου μὲν ἀνισόταμον ἀνάγκη πρὸς τὸ καθόλου τῶν προτεινομένων πῷ ἀντίφασις εἰπέ· οἷον εἰ μὴ τὴν αὐτὴν ἀξιοῖ τῶν ἐναντίων, πάντων εἰπόντα τῶν ἀντικειμένων μίαν (οἷτω δ' ἀνάγκη τὸ πρῶτον εἴλασι σχῆμα, μέσον γὰρ γίγνεται τὸ καθόλου πρὸς τὸ ἐξ ἀρχῆς) ὑπὸ μέρει δὲ, πρὸς ὅ ἐστι καθόλου καθ' οὐ λέγεται ἡ πρό-

Because the second figure gives only negative conclusions: 28 a 7.
premiss, and opposites can be proved only in the first and third figures. For when our opponent claims that the predicate applies to all of the subject, we object that it applies to none, or does not apply to some. The former objection is brought by the first figure, and the latter by the last. E.g., let A stand for 'to be one science,' and B for 'contraries.' Then when it is premised that there is one science of contraries, the objection is either (1) that the same science does not treat of opposites, and that contraries are opposites—so that the first figure results; or (2) that there is not one science of the knowable and unknowable. This is the third figure; for to state of C, viz. the knowable and unknowable, that they are contraries, is true; but to state that there is one science of them is false.

So again in the case of a negative premiss. When it is claimed that there is not one science of contraries, we reply either that all opposites or that some contraries, e.g., the healthy and the diseased, are studied by a single science. The former objection is raised by the first figure, and the latter by the third.

The general rule is that in all cases one who is raising a universal objection must state his contradiction with reference to the universal including the terms premised; e.g., if it is claimed that the same science does not treat of contraries, he must maintain that there is one science of all opposites. In this way the first figure must result; for the universal which includes the original term becomes the middle. But when the objection is particular, the contradiction must be stated with reference to the term which is included by the subject of the premiss as a universal;
τασις, οἷον γνωστοϋ καὶ ἀγνώστου μη τὴν αὐτὴν τὰ γὰρ ἐναντία καθόλου πρὸς ταῦτα (καὶ γέρνεται τὸ τρίτον σχήμα· μέσον γὰρ τὸ ἐν μέρει λαμβανό-
μενον, οἷον τὸ γνωστὸν καὶ τὸ ἄγνωστον). ἐξ ὧν γὰρ ἐστὶ συνεχοῦσαθαι τοιαῦται, ἐκ τοῦτων καὶ
τὰς ἐνστάσεις ἐπιχειροῦμεν λέγειν. διὸ καὶ ἐκ μόνων τούτων τῶν σχημάτων φέρομεν· ἐν μόνοις γὰρ οἱ ἀντικείμενοι συνεχοῦσι (διὰ γὰρ τοῦ μέσου οὐκ ἦν καταφατικῶς).
'Ετι δὲ καὶ λόγου διότι πλείονος ἢ διὰ τοῦ μέσου σχήματος, οἷον εἰ μὴ δοίη τὸ Λ τῷ Β ὑπάρ-
χειν διὰ τὸ μή ἀκολουθεῖν αὐτῷ τὸ Γ'. τούτῳ γὰρ
δι᾽ ἄλλων προτάσεων δῆλον· οὐ δεὶ δὲ εἰς ἄλλα ἐκτρέπεσθαι τὴν ἐνστάσιν, ἀλλ’ εὐθὺς φανερὰν ἔχειν τὴν ἐτέραν πρότασιν. διὸ καὶ τὸ σημεῖον ἐκ μόνου τοῦτο τοῦ σχήματος οὐκ ἐστὶν.
'Επισκεπτέον δὲ καὶ περὶ τῶν ἄλλων ἐνστάσεων, οἷον περὶ τῶν ἐκ τοῦ ἐναντίου καὶ τοῦ ὀμοίου καὶ
τοῦ κατὰ δόξαν, καὶ εἰ τὴν ἐν μέρει ἐκ τοῦ πρώτου ἢ τὴν στερειτικὴν ἐκ τοῦ μέσου δυνατὸν λαβεῖν.
XXVII. Εἰκός δὲ καὶ σημεῖον οὗ ταύτων ἐστίν, ἀλλὰ τὸ μὲν εἰκός ἐστὶ πρότασις ἐνδοξος· ὁ γὰρ ἂς
ἐπὶ τὸ πολὺ ἱσασιν οὕτω γιγνόμενον ἢ μή γιγνό-
μενον ἢ ἢν ἢ μὴ ἢν, τούτ’ ἐστὶν εἰκός, οἷον τὸ
μισεῖν τοὺς φθονοῦντας ἢ τὸ φιλεῖν τοὺς ἐρωμένους·
σημεῖον δὲ βούλεται εἶναι πρότασις ἀποδεικτική.
e.g., it must be stated that the science of the knowable and the unknowable is not the same, for these are included in contraries as a universal; and the third figure results, for the term which is assumed as particular, viz. the knowable and unknowable, becomes the middle. It is from the premisses from which it is possible to argue the contrary that we try to infer objections. Hence it is only by these figures that we try to raise them, because in these only are opposite syllogisms possible, since (as we saw) an affirmative result cannot be obtained in the middle figure.

Moreover, an objection by the middle figure would require more argument; e.g., supposing that it were not granted that A applies to B on the ground that C is not a consequent of B. This can be clearly shown by means of further premisses; but an objection ought not to pass on to other considerations, but to display its further premiss immediately. Hence also this is the only figure from which proof by signs is impossible.

We must also consider the other forms of objection, viz. objections from contrary or similar cases, or from received opinion; and whether particular objections can be drawn from the first or negative objections from the second figure.

XXVII. A probability is not the same as a sign. The former is a generally accepted premiss; for that which people know to happen or not to happen, or to be or not to be, usually in a particular way, is a probability: e.g., that the envious are malevolent or that those who are loved are affectionate. A sign, however, means a demonstrative premiss which is neces-

* This question is, I believe, never discussed.
of referable to one phenomenon only, a sign has objective necessity; if to more than one, its value is a matter of opinion.
sary or generally accepted.\(^a\) That which coexists with something else, or before or after whose happening something else has happened, is a sign of that something's having happened or being.

An enthymeme is a syllogism from probabilities or signs; and a sign can be taken in three ways—in just as many ways as there are of taking the middle term in the several figures: either as in the first figure or as in the second or as in the third. E.g., the proof that a woman is pregnant because she has milk is by the first figure; for the middle term is 'having milk.' A stands for 'pregnant,' B for 'having milk,' and C for 'woman.' The proof that the wise are good because Pittacus was good is by the third figure. A stands for 'good,' B for 'the wise,' and C for Pittacus. Then it is true to predicate both A and B of C; only we do not state the latter, because we know it, whereas we formally assume the former. The proof that a woman is pregnant because she is sallow is intended to be by the middle figure; for since sallowness is a characteristic of women in pregnancy, and is associated with this particular woman, they suppose that she is proved to be pregnant. A stands for 'sallowness,' B for 'being pregnant' and C for 'woman.'

If only one premiss is stated, we get only a sign; but if the other premiss is assumed as well, we get a syllogism,\(^b\) e.g., that Pittacus is high-minded, because those who love honour are high-minded, and Pittacus loves honour; or again that the wise are good, because Pittacus is good and also wise.

In this way syllogisms can be effected; but whereas a syllogism in the first figure cannot be refuted if it is true, since it is universal, a syllogism in the last

\(^a\) Strictly an enthymeme.

\(^b\) Strictly an enthymeme.
καὶ ἄλθεῖς ἃ τὸ συμπέρασμα, διὰ τὸ μὴ εἶναι καθόλου μηδὲ πρὸς τὸ πράγμα τῶν συλλογισμῶν, οὔ γὰρ εἰ Πιτακὸς σπουδαῖος, διὰ τούτο καὶ τοῖς ἄλλοις ἀνάγκη σοφοῖς. οὗ δὲ διὰ τοῦ μέσου σχῆματος ἀκὶ καὶ πάντως λύσιμος: οὕτωσι γὰρ γίγνεται συλλογισμὸς οὕτως ἄχοστων τῶν ὀριῶν, ὥστε εἰ ἡ κύουσα ὑπάρα, ὑπάρα δὲ καὶ ἤδε, κἀκιν ἀνάγκη ταύτην. ἄλθεῖς μὲν οὖν ἐν ᾧ παρεῖ ὑπάρχει τοῖς σημείοις, διαφοράς δ᾽ ἔχουσι τὰς εἰρημένας.

Η ὑπὸ οὗτω παρεῖς τὸ σημεῖον, τούτων δὲ τοῦ μέσου τεκμήριον ληπτόν (τὸ γὰρ τεκμήριον τὸ εἰδέναι ποιοῦν βασιν ἐνεμα, τοιοῦτῳ δὲ μάλιστα τὸ μέσον), ἢ τὰ μὲν ἐκ τῶν ἄκρων σημεια λειτέον τὸ δ᾽ ἐκ τοῦ μέσου τεκμήριον ἐνοούσαν γὰρ καὶ μάλιστα ἄλθεῖς τὸ διὰ τοῦ πρώτου σχῆματος. Τὸ δὲ φυσιογνωμονεῖν δυνατόν ἐστὶν εἰ τὸ δίδωσιν ἀμα μεταβάλλειν τὸ σώμα καὶ τὴν φυχὴν ὅσα φυσικά ἐστὶ παθήματα (μαθὼν γὰρ ἰσως μονοκήρυ
10 μεταβέβληκε τῇ τὴν φυχῆν, ἀλλ᾽ οὔ τῶν φύσει ἥμιν ἐστὶ τούτο τοῦ πάθος, ἀλλ᾽ οἷον ἄργα καὶ ἐπιθυμία τῶν φύσει κυρίσεων). εἰ δὲ τούτῳ τῇ δοθείᾳ καὶ ἐν ἑνὸς σημείου εἶναι, καὶ δυναίμεθα λαμβάνειν τὸ σημείον σχῆμαν C', Pacius (?), Tricót.
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figure can be refuted even if the conclusion is true, because the syllogism is neither universal nor relevant to our purpose. For if Pittacus is good, it is not necessary for this reason that all other wise men are good. A syllogism in the middle figure is always and in every way refutable, since we never get a syllogism with the terms in this relation; for it does not necessarily follow, if a pregnant woman is sallow, and this woman is sallow, that she is pregnant. Thus truth can be found in all signs, but they differ in the ways which have been described.

We must either classify signs in this way, and regard their middle term as an index (for the name 'index' is given to that which causes us to know, and the middle term is especially of this nature), or describe the arguments drawn from the extremes as 'signs,' and that which is drawn from the middle as an 'index.' For the conclusion which is reached through the first figure is most generally accepted and most true.

It is possible to judge men's character from their physical appearance, if one grants that body and soul change together in all natural affections. (No doubt after a man has learned music his soul has undergone a certain change, but this affection is not one which comes to us naturally; I mean such affections as fits of anger or desires among natural excitements.) Supposing, then, this is granted, and also that there is one sign of one affection, and that we can recognize refutable (2nd and 3rd figures), and the name 'index' may be attached to their middle terms, either in all figures or (more probably) only in the first, where the middle is distinctively middle.

Alternatively the name 'sign' may be restricted to the 2nd and 3rd figures, and may be replaced by 'index' in the first.

Alternative uses of the names 'sign' and 'index.'
ίδιον ἐκάστου γένους πάθος καὶ σημεῖον, δυνησόμεθα φυσιογνωμονεῖν. εἰ γάρ ἐστιν ἵδια τοὶ γένει ὑπάρχον ἀτόμων πάθος, οἷον τοῖς λέονσι ἀνδρεῖα, ἀνάγκη καὶ σημεῖον ἐναί τὶ συμπάσχειν γάρ ἀλλήλοις ὑπόκειται. καὶ ἐστω τούτῳ τὸ μεγάλα τὸ ἀκρωτήρια ἐχεῖν· δ καὶ ἄλλων ὑπάρχειν γένεσι μὴ ὅλους ἐνδέχεται· τὸ γὰρ σημεῖον οὕτως ἴδιον ἐστιν, ὅτι ὅλον γένους ἴδιον ἐστι τὸ πάθος, καὶ σκ μένοι ὅλοιν ἴδιον, ὥστερ εἰσδεχαμεν λέγειν. ὑπάρξει δὴ καὶ ἐν ἄλλω γένει ταύτῳ, καὶ ἐσται ἀνδρείας ὅ ἀνθρώπως καὶ ἄλλο τι ζῷον. ἔχει ἀρα τὸ σημεῖον· ἐν γὰρ ἑνὸς ἦν· εἰ τοῖς ταὐτὶ ἑστι, καὶ δυνησόμεθα τοιαύτα σημεῖα συλλέξαι ἐπὶ τούτων τῶν ζῴων ἕτοι μύν ἐν πάθοις ἑχει τὶ ἴδιον, ἐκαστὸν δ᾽ ἐχει σημείον, ἐπείσερ ἐν ἑχειν ἀνάγκη, δυνησόμεθα φυσιογνωμονεῖν· ει δὲ διὸ ἐχει ἵδια ὅλον τὸ γένος, οἷον ὁ λέων ἀνδρείαν καὶ μεταδοτικὸν, πῶς γνωσόμεθα πότερον ποτέρου σημείου τῶν ἵδια ἀκολουθοῦντων σημείων; ἦ ἐν ἄλλω μὴ ὅλῳ των άρματων, καὶ ἐν οἷς μὴ ὅλους ἐκάστῳ τετελον, ὅταν τὸ μὲν ἔχει τὸ δὲ μή· εἰ γάρ ἀνδρείασ μὲν ἐλευθερίους δὲ μή, ἐχει δὲ τῶν διὸς τετελον, δήλων ὅτι καὶ ἐπὶ τού λέοντος τούτο σημείον τῆς ἀνθρώπως· ἔστι δὴ τὸ φυσιογνωμονεῖν τῷ· ἐν τῷ πρώτῳ σχήματι τὸ μέσον τῷ μὲν πρώτῳ ἀκρω ἀντιστρεφειν, τοῦ δὲ τρίτου ὑπερτείνειν καὶ μὴ ἀντιστρεφειν... 1 τῷ cdm. Waitz: τῷ C: τῷ cet.
the affection and sign proper to each class of creatures, we shall be able to judge character from physical appearance. For if a peculiar affection applies to any individual class, e.g., courage to lions, there must be some corresponding sign of it; for it has been assumed that body and soul are affected together. Let this be 'having large extremities.' This may apply to other classes, but not as wholes; for a sign is peculiar in the sense that the affection is peculiar to the class as a whole, and not to it alone, as we are accustomed to use the term. Thus the same affection will be found in another class also, and man or some other animal will be brave. Therefore he will have the sign; for ex hypothesi there is one sign of one affection. If, then, this is so, and we can collate signs of this kind in the case of animals which have only one peculiar affection, and if each affection has a sign, since it necessarily has only one sign, we shall be able to judge their character by their appearance. But if the genus as a whole has two peculiar affections, e.g., if lions have courage and a readiness to share, how shall we decide which sign of those which are peculiarly associated with the genus belongs to which affection? Probably if both affections are found in some other class not as a whole, that is, when of the classes in which each of them is found certain members possess one but not the other. For if a man is brave but not generous, and exhibits one of the two signs, clearly this will be the sign of courage in the lion as well.

Thus it is possible to judge character from the appearance in the first figure, provided that the middle term is convertible with the first extreme, but is wider in extension than the third term and not
φειν, οἷον ἀνδρεία τὸ Α, τὰ ἀκρατήρια μεγάλα ἐφ' οὐ Β, τὸ δὲ Γ λέων. ὃ δὴ τὸ Γ τὸ Β παντὶ, ἀλλὰ καὶ ἄλλους: ὃ δὲ τὸ Β, τὸ Α παντὶ καὶ οὐ πλείους, ἀλλ' ἀντιστρέφει: εἰ δὲ μὴ, οὐκ ἔσται ἐν ἕνος σημείον.
convertible with it: *e.g.*, if A stands for courage, B for large extremities and C for lion. Then B applies to all of that to which C applies, and also to others, whereas A applies to all that to which B applies, and to no more, but is convertible with B. Otherwise there will not be one sign of one affection.
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