ARISTOTLE
THE CATEGORIES
ON INTERPRETATION
PRIOR ANALYTICS
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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
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

a 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 *Iacere* 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."""a"

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.'b If I understand

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a *Aristotle* (ed. 2, 1880), p. 79.
b *Aristotle*, p. 23.
INTRODUCTION

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
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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. 23.
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

\footnote{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: whereof 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.
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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. Ὁμώνυμα λέγεται ὃν ὄνομα μόνον κοινὸν, ὁ δὲ κατὰ τούνομα λόγος τῆς οὐσίας ἑτέρος, οἷον ἥδιν ὁ τε ἀνθρωπος καὶ τὸ γεγραμμένον. τούτων γὰρ ὄνομα μόνον κοινὸν, ὁ δὲ κατὰ τούνομα λόγος τῆς οὐσίας ἑτέρος. ἀν γὰρ τις ἀποδίδῃ τί ἐστιν τούτων ἑκατέρω τὸ ἧδιν εἶναι, ὡς ἕκατέρου λόγον ἀποδώσει. συνώνυμα δὲ λέγεται ὃν τε ὄνομα κοινὸν καὶ ὁ κατὰ τούνομα λόγος τῆς οὐσίας ὁ αὐτὸς, οἷον ἥδιν ὁ τε ἀνθρωπος καὶ ὁ βοῦς. ὁ γὰρ ἀνθρωπος καὶ ὁ βοῦς κοινῷ ὀνόματι προσ- αγορεύεται ἥδιν, καὶ ὁ λόγος δὲ τῆς οὐσίας ὁ αὐτὸς; ἀν γὰρ ἀποδίδῃ τις τὸν ἑκατέρον λόγον, τί ἐστιν αὐτῶν ἑκατέρω τὸ ἧδιν εἶναι, τὸν αὐτὸν λόγον ἀποδώσει. παρώνυμα δὲ λέγεται ὡς ἀπὸ τινος διαφέροντα τῇ πτώσει τῆν κατὰ τούνομα

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 Ἡδιν 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.'
ΑΡΙΣΤΟΤΗΛΗ

1. Προσηγορίαν ἔχει, οἶον ἀπὸ τῆς γραμματικῆς ὁ
γραμματικὸς καὶ ἀπὸ τῆς ἀνδρείας ὁ ἄνδρειος.

II. Τῶν λεγομένων τὰ μὲν κατὰ συμπλοκὴν
λέγεται, τὰ δ’ ἀνευ συμπλοκῆς. τὰ μὲν οὖν κατὰ
συμπλοκὴν οἶον ἄνθρωπος τρέχει, ἄνθρωπος νυκ.
tὰ δ’ ἀνευ συμπλοκῆς οἶον ἄνθρωπος, βοῦς, τρέχει,
nυκ.

20. Τῶν ὄντων τὰ μὲν καθ’ ὑποκειμένου των
λέγεται, ἐν ὑποκειμένῳ δὲ οὐδενὶ ἐστιν, οἶον
ἄνθρωπος καθ’ ὑποκειμένου μὲν λέγεται τοῦ των
ἄνθρωπον, ἐν ὑποκειμένῳ δὲ οὐδενὶ ἐστιν; τὰ δὲ
ἐν ὑποκειμένῳ μὲν ἐστι, καθ’ ὑποκειμένου δὲ
οὐδενὸς λέγεται (ἐν ὑποκειμένῳ δὲ λέγω, ὃ ἐν τιν
μὴ ὡς μέρος ὑπάρχων ἀδύνατον χωρίς εἶναι τοῦ
ἐν ὦ ἐστίν), οἶον ἡ τὸς γραμματικὴ ἐν ὑποκειμένῳ
μὲν ἐστὶ τῇ ψυχῇ, καθ’ ὑποκειμένου δὲ οὐδενὸς
λέγεται, καὶ τὸ τὶ λευκὸν ἐν ὑποκειμένῳ μὲν τῷ
σώματι ἐστὶν (ἂπαν γὰρ χρώμα ἐν σώματι), καθ’
ὑποκειμένου δὲ οὐδενὸς λέγεται· τὰ δὲ καθ’ ὑπο-

1b. Κειμένου τε λέγεται καὶ ἐν ὑποκειμένῳ ἐστὶν, οἶον
ἡ ἐπιστήμη ἐν ὑποκειμένῳ μὲν ἐστὶ τῇ ψυχῇ, καθ’
ὑποκειμένου δὲ λέγεται τῆς γραμματικῆς· τὰ δὲ
οὔτ’ ἐν ὑποκειμένῳ ἐστὶν οὔτε καθ’ ὑποκειμένου
των λέγεται, οἶον ὁ τὸς ἄνθρωπος καὶ ὁ τὸς ἰππός·
οὐδὲν γὰρ τῶν τοιούτων οὔτε ἐν ὑποκειμένῳ ἐστὶν
οὔτε καθ’ ὑποκειμένου λέγεται. ἀπλῶς δὲ τὰ ἄτομα

α ‘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.

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form, as, for instance, 'grammariar from 'grammar,' from 'heroism,' 'hero,' and so on."

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
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1b καὶ ἐν ἀριθμῷ κατ' οὐδενὸς ὑποκειμένου λέγεται, ἐν ὑποκειμένῳ δὲ ἐνια οὐδὲν κωλύει εἰναι. ἦ γὰρ τις γραμματικὴ τῶν ἐν ὑποκειμένῳ ἔστι.

III. "Ὅταν ἐτέρων καθ' ἐτέρων κατηγορηται ὡς καθ' ὑποκειμένου, ὥσα κατὰ τοῦ κατηγορουμένου λέγεται, πάντα καὶ κατὰ τοῦ ὑποκειμένου ῥηθή-

10 σεται, οἶον ἄνθρωπος κατὰ τοῦ τινός ἄνθρωπον κατηγορεῖται, το δὲ ἥγην κατὰ τοῦ ἄνθρωπον οὐκοῦν καὶ κατὰ τοῦ τινός ἄνθρωπον κατηγορηθῆ-

15 σεται τὸ ἥγην· ὥ γὰρ τις ἄνθρωπος καὶ ἄνθρωπος ἔστι καὶ ἥγην.

10 Τῶν ἐτέρων γενῶν καὶ μὴ ὑπ' ἄλληλα τεταγ-

μένων ἐτεραί τῷ εἴδει καὶ αἰ διαφοραὶ, οἶον ἥγην καὶ ἐπιστήμης· ἥγην μὲν γὰρ διαφοραὶ το τε πεξόν καὶ τὸ δίπου καὶ τὸ πτηνὸν καὶ τὸ ἐνδρέων, ἐπιστήμης δὲ οὐδεμία τούτων· οὐ γὰρ διαφέρει

20 ἐπιστήμης ἐπιστήμης τῷ δίπου εἰναι.

Τῶν δὲ γε ὑπ' ἄλληλα γενῶν οὐδὲν κωλύει τὰς αὐτὰς διαφορας εἰναι· τὰ γὰρ ἑπάνω τῶν ὑπ' αὐτὰ γενῶν κατηγορεῖται, ὡστε ὅσα τοῦ κατηγορου-

25 μένου διαφοραὶ εἰσι, τοσαῦται καὶ τοῦ ὑποκειμένου ἔσονται.

IV. Τῶν κατὰ μηδεμίαν συμπλοκὴν λεγομένων ἐκαστὸν ἢτοι οὐσίαν σημαίνει ἡ ποσὸν ἡ ποιὸν ἡ πρὸς τι ἡ ποῦ ἡ ποτὲ ἡ κεῖσθαι ἡ ἑχεῖν ἡ ποιεῖν ἡ

1 Bekker reads τῶν ἐν ὑποκειμένῳ μὲν ἔστι, καθ' ὑποκειμένου δὲ οὐδενὸς λέγεται.

2 τῶν ἐτερογενῶν 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.\(^a\) 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.’
πάσχειν. ἐστι δὲ οὐσία μὲν ὡς τύπῳ εἰπεῖν οἷον ἀνθρώπος, ἵππος· ποιῶν δὲ οἷον διπήχυ, τρίπηχυ: ποιῶν δὲ οἷον λευκόν, γραμματικὸν· πρὸς τι δὲ οἷον διπλάσιον, ἥμισυ, μεῖζον· ποῦ δὲ οἷον ἔν Λυκείῳ, ἐν ἄγορᾷ: ποτὲ δὲ οἷον εὐθές, πέρυσι· κεῖον δὲ οἷον ἀνάκειται, κάθεται· εἰχεν δὲ οἷον ὑποδεδεῖται, ὑπλισται· ποιεῖν δὲ οἷον τέμνει, καίει· πάσχειν δὲ οἷον τέμνεται, καίεται.

"Εκαστὸν δὲ τῶν εἰρημένων αὐτὸ μὲν καθ' αὐτὸ 5 ἐν οὗδεμιὰ καταφάσει λέγεται, τῇ δὲ πρὸς ἄλληλα τούτων συμπλοκῆ κατάφασις ἡ ἀπόφασις γίνεται. ἀπάσα γάρ δοκεῖ καταφάσις καὶ ἀπόφασις ἢ τοι ἀληθῆς ἢ ψευδῆς εἶναι· τῶν δὲ κατὰ μηδεμίαν συμπλοκῆς λεγομένων οὐδὲν οὔτε ἀληθῆς οὔτε 10 ψευδὸς ἐστιν, οἷον ἀνθρώπος, λευκόν, τρέχει, νικά.

V. Οὐσία δὲ ἐστιν ἡ κυριώτατά τε καὶ πρῶτος καὶ μάλιστα λεγομένη, ἡ μήτε καθ' ὑποκειμένου τυνὸς λέγεται μήτ' ἐν ὑποκειμένῳ τυν ἐστιν, οἷον ὁ τις ἀνθρώπος ἡ ὁ τις ἴππος. δεύτεραι δὲ οὐσίαι λέγονται, ἐν οἷς εἶδεσιν αἱ πρῶτοι οὐσίαι λεγόμεναι ὑπάρχουσι, ταῦτα τε καὶ τὰ τῶν εἰδῶν τούτων γένη, οἷον ὁ τις ἀνθρώπος ἐν εἰδεὶ μὲν ὑπάρχει τῷ ἀνθρώπῳ, γένος δὲ τοῦ εἰδους ἐστι τὸ ἐμον·

1 ἡ ἀπόφασις omitted after λέγεται.

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1b 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 Gomperz, *Greek Thinkers* (translated by G. G. Berry), vol. iv. c. 4.

1b "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. 23). The distiction 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 under substance 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.
2. δεύτερα οὖν αὐταὶ λέγονται οὐσίαι, οἷον ὁ τε ἀνθρωπος καὶ τὸ ζῷον.

Φανερὸν δὲ ἐκ τῶν εἰρημένων ὅτι τῶν καθ' ὑπο-
20 κειμένου λεγομένων αἰσθήματι καὶ τούνομα καὶ τῶν λόγων κατηγορεῖσθαι τοῦ ὑποκειμένου, οἷον ὁ ἀνθρωπος καθ' ὑποκειμένου λέγεται τοῦ τινὸς ἀνθρώπου, καὶ κατηγορεῖται γε τούνομα τὸν γὰρ ἀνθρώπον τοῦ τινὸς ἀνθρώπου κατηγορηθείσης. καὶ ὁ λόγος δὲ ὁ τοῦ ἀνθρώπου κατὰ τοῦ τινὸς ἀν-
25 θρώπου κατηγορηθήσεται: ὁ γὰρ τις ἀνθρωπος καὶ ἀνθρωπός ἐστι καὶ ζῷον, ωστε καὶ τούνομα καὶ ὁ λόγος κατὰ τοῦ ὑποκειμένου κατηγορηθήσεται.

Τῶν δ' ἐν ὑποκειμένῳ διίτων ἐπὶ μὲν τῶν πλείστων οὔτε τούνομα οὐδ' ὁ λόγος κατηγορεῖ-
30 ται τοῦ ὑποκειμένου ἐπὶ εἰνόν δὲ τούνομα μὲν οὖν καλύπτει κατηγορεῖσθαι ποτε τοῦ ὑποκει-
μένου, τὸν δὲ λόγον ἀδύνατον, οἷον τὸ λευκὸν ἐν ὑποκειμένῳ ὅν τῷ σώματι κατηγορεῖται τοῦ ὑπο-
κειμένου (λευκὸν γὰρ σῶμα λέγεται), ὁ δὲ λόγος ὁ τοῦ λευκοῦ οὐδὲποτε κατὰ σώματος κατηγορη-
θήσεται.

Τὰ δ' ἅλλα πάντα ήτοι καθ' ὑποκειμένων λέ-
35 γεται τῶν πρώτων οὐσίων ἣ ἐν ὑποκειμένωις αὐταῖς ἐστίν. τοῦτο δὲ φανερὸν ἐκ τῶν καθ' ἑκαστα προχειριζομένων, οἷον τὸ ζῷον κατὰ τοῦ ἀνθρώπου κατηγορεῖται: οὐκοῦν καὶ κατὰ τοῦ τινὸς ἀνθρώπου κατηγορηθήσεται τὸ ζῷον: εἰ γὰρ 21 κατὰ μηδενὸς τῶν τινῶν ἀνθρώπων, οὐδὲ κατὰ

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*a Understand by 'the name' here τὸ λευκόν, 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.a

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.’

21
ΑΡΙΣΤΟΤΕΛΕΣ

2

ἀνθρώπου ὅλως. πάλιν τὸ χρῶμα ἐν σώματι
οὐκοῦν καὶ ἐν τινὶ σώματι· εἰ γὰρ ὁμὴ ἐν τινὶ τῶν
καθ’ ἕκαστα, οὐδὲ ἐν σώματι ὅλως. ὥστε τὰ ἄλλα
πάντα ήτοι καθ’ ὑποκειμένων λέγεται τῶν πρῶτων
5 οὐσίων ἡ ἐν ὑποκειμέναις αὐταῖς ἐστὶν. μὴ οὐσῶν
οὖν τῶν πρῶτων οὐσίων ἀδύνατον τῶν ἄλλων τι
εἶναι.

Τῶν δὲ δευτέρων οὐσίων μᾶλλον οὐσία τὸ εἴδος
τοῦ γένους· ἐγγιὼν γὰρ τῆς πρώτης οὐσίας ἐστὶν.
6 ἐὰν γὰρ ἀποδιδῷ τις τὴν πρώτην οὐσίαν τι ἐστὶν,
γνωριμώτερον καὶ οἰκείοτερον ἀποδώσει τὸ εἴδος
ἀποδιδοὺς ἦπερ τὸ γένος, οἷον τὸν τινὰ ἄνθρωπον
ἀποδιδοὺς γνωριμώτερον ἄν ἀποδοίη ἄνθρωπον ἡ
ζῷον ἀποδιδοὺς· τὸ μὲν γὰρ ἰδιὸν μᾶλλον τοῦ τινὸς
ἄνθρωπον, τὸ δὲ κοινότερον. καὶ τὸ τι δενδρὸν
ἀποδιδοὺς γνωριμώτερον ἀποδώσει δενδρὸν ἀπο-
διδοὺς ἡ φυτόν.

15 Ἐστὶ αἱ πρῶται οὐσίαι διὰ τὸ τοῖς ἄλλοις ἀπασω
ὑποκεῖσθαι καὶ πάντα τὰ ἄλλα κατὰ τούτων κατ-
ηγορεῖσθαι ἡ ἐν αὐταῖς εἶναι διὰ τοῦτο μάλιστα
οὐσίαι λέγονται. ως δὲ γε αἱ πρῶται οὐσίαι πρὸς
τὰ ἄλλα πάντα ἔχουσιν, οὕτω καὶ τὸ εἴδος πρὸς
tὸ γένος ἔχει· ὑποκεῖται γὰρ τὸ εἴδος τῷ γένει.
10 τὰ μὲν γὰρ γένη κατὰ τῶν εἴδων κατηγορεῖται,
tὰ δὲ εἴδη κατὰ τῶν γενόν οὐκ ἀντιστρέφει· ωστε
καὶ ἐκ τούτων τὸ εἴδος τοῦ γένους μᾶλλον οὐσία.
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.
Αυτῶν δὲ τῶν εἰδῶν ὅσα μὴ ἔστι γένη, οὐδὲν μᾶλλον ἐτέρου ὦσία ἐστίν· οὐδὲν γὰρ οἰκείοτερον ἀποδώσεις κατὰ τοῦ τινὸς ἀνθρώπου τοῦ ἀνθρώπου ἀποδιδοὺς ἢ κατὰ τοῦ τινὸς ἵππου τοῦ ἵππου. ὥσαυτώς δὲ καὶ τῶν πρῶτων οὐσιῶν οὐδὲν μᾶλλον ἐτέρου ὦσία ἐστίν· οὐδὲν γὰρ μᾶλλον ὁ τίς ἀνθρώπος οὐσία ἢ ὁ τίς βοῦς.

Εἰκότως δὲ μετὰ τὰς πρώτας οὐσίας μόνα τῶν ἄλλων τὰ εἰδή καὶ τὰ γένη δεύτεραι οὐσίαι λέγονται: μόνα γὰρ δηλοὶ τὴν πρώτην οὐσίαν τῶν κατηγοριών. τὸν γὰρ τινὰ ἀνθρώπου εἶναί ἀποδεικνύει τις τί ἐστι, τὸ μὲν εἶδος ἢ τὸ γένος ἀποδιδοὺς οἰκείως ἀποδώσεις καὶ γνωριμίως ποιήσει ἀνθρώπου ζωον ἀποδιδοὺς τῶν δ' ἄλλων δ' τὰ ἀν

οὐσίων τοῖς ἀλλοτρίως ἐστιν ἀποδεδωκώς, οὐν λευκὸν ἢ τρέχει ἢ ὁτιοῦν τῶν τοιούτων ἀποδιδοῦς, ὥστε εἰκότως τῶν ἄλλων τάτα μόνα οὐσίαι λέγονται.

"Ετι αἱ πρώται οὐσίαι διὰ τὸ τοῖς ἄλλοις ἀπασω ὑποκείσθαι κυριώτατα οὐσίαι λέγονται. ως δὲ γε αἱ πρώται οὐσίαι πρὸς τὰ ἄλλα πάντα ἔχουσιν, οὐτω τὰ εἰδή καὶ τὰ γένη τῶν πρῶτων οὐσιῶν πρὸς τὰ λοιπὰ πάντα ἔχει· κατὰ τούτων γὰρ πάντα τὰ λοιπὰ κατηγορεῖται. τὸν γὰρ τινὰ ἀνθρώπου ἑρεῖς γραμματικὸνα οὐκοῦν καὶ ἀνθρώπου καὶ ζωον γραμ-

ματικὸν ἑρεῖς. ὥσαυτώς δὲ καὶ ἐπὶ τῶν ἄλλων.

Κοινὸν δὲ κατὰ πάσης οὐσίας τὸ μὴ ἐν ὑπο-

κειμένῳ εἶναι. η μὲν γὰρ πρῶτη οὐσία οὔτε ἐν

24
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
ΑΡΙΣΤΟΤΕΛΗΣ

3α ὑποκειμένω ἐστὶν οὕτε καθ’ ὑποκειμένου λέγεται·
tῶν δὲ δευτέρων οὐσιῶν φανερῶν μὲν καὶ οὕτως
30 ὅτι οὐκ εἰσὶν ἐν ὑποκειμένω. ὁ γὰρ ἄνθρωπος
καθ’ ὑποκειμένου μὲν τοῦ τινὸς ἄνθρωπον λέγεται,
ἐν ὑποκειμένῳ δὲ οὐκ ἐστὶν· οὐ γὰρ ἐν τῷ των
ἀνθρώπων ὁ ἄνθρωπος ἐστιν. ὡσαύτως δὲ καὶ τὸ
ζῷον καθ’ ὑποκειμένου μὲν λέγεται τοῦ τινὸς
ἀνθρώπου, οὐκ ἐστὶ δὲ τὸ ζῷον ἐν τῷ των ἄν-

15 θρώπων. ἔτι δὲ τῶν ἐν ὑποκειμένῳ ὅντων τὸ μὲν
ὁνόμα οὐδὲν κωλύει κατηγορεῖσθαι τοῖς τοῦ ὑπο-
κειμένου, τὸν δὲ λόγον ἀδύνατον. τῶν δὲ δευτέρων
οὐσιῶν κατηγορεῖται καὶ ὁ λόγος κατὰ τοῦ ὑπο-
κειμένου καὶ τοῦνομα· τὸν γὰρ τοῦ ἄνθρωπου λόγον
κατὰ τοῦ τινὸς ἄνθρωπον κατηγορήσεις, καὶ τὸν
20 τοῦ ζῶου ὡσαύτως. ὥστε οὐκ ἂν εἴη ἡ οὐσία
τῶν ἐν ὑποκειμένῳ.

Οὐκ ἴδιον δὲ τούτῳ τῆς οὐσίας, ἀλλὰ καὶ ἡ
diaforá τῶν μὴ ἐν ὑποκειμένῳ ἐστὶν. τὸ γὰρ
πεζόν καὶ τὸ δίπου καθ’ ὑποκειμένου μὲν λέγεται
τοῦ ἄνθρωπου, ἐν ὑποκειμένῳ δὲ οὐκ ἐστὶν· οὐ γὰρ
ἐν τῷ ἄνθρώπῳ ἐστὶ τὸ δίπον ἢ τὸ πεζόν. καὶ
25 ὁ λόγος δὲ κατηγορεῖται ὁ τῆς διαφορᾶς, καθ’ οὗ
ἂν λέγηται ἡ διαφορά, οἶον εἰ τὸ πεζόν κατὰ τοῦ
ἀνθρώπου λέγεται, καὶ ὁ λόγος ὁ τοῦ πεζοῦ κατ-
ηγορηθήσεται τοῦ ἄνθρωπος· πεζόν γὰρ ἐστὶν ὁ
ἀνθρώπος.

Μὴ ταραττέω δὲ ἡμᾶς τὰ μέρη τῶν οὐσιῶν ὡς
ἐν ὑποκειμένοις ὅντα τοῖς ὅλοις, μὴ ποτὲ ἀναγκασ-
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

a See the definition, 1 a 24.
ΑΡΙΣΤΟΤΕΛΗΣ

3α 'Υπάρχει δὲ ταῖς ουσίαις καὶ ταῖς διαφοραῖς τὸ
πάντα συνωνύμως ἀπ’ αὐτῶν λέγεσθαι. πάσαι γὰρ
85 αἱ ἀπ’ αὐτῶν κατηγορίαι ἢτοι κατὰ τῶν ἀτόμων
κατηγοροῦνται ἢ κατὰ τῶν εἴδων. ἀπὸ μὲν γὰρ
τῆς πρώτης ουσίας οὐδεμιὰ ἐστὶ κατηγορία: κατ’
οὐδενὸς γὰρ ὑποκειμένου λέγεται· τῶν δὲ δευτέρων
οὐσιῶν τὸ μὲν εἴδος κατὰ τοῦ ἀτόμου κατηγο-
ρεῖται, τὸ δὲ γένος καὶ κατὰ τοῦ εἴδους καὶ κατὰ
8 β τοῦ ἀτόμου. ὡσαύτωσι δὲ καὶ αἱ διαφοραὶ κατὰ
τῶν εἴδων καὶ κατὰ τῶν ἀτόμων κατηγοροῦνται,
καὶ τὸν λόγον δὲ ἐπιδέχονται αἱ πρώται οὐσίαι
tὸν τῶν εἴδων καὶ τοῦ τῶν γενῶν, καὶ τὸ εἴδος δὲ
tὸν τοῦ γένους· ὡσα γὰρ κατὰ τοῦ κατηγοροῦμένου
6 λέγεται, πάντα καὶ κατὰ τοῦ ὑποκειμένου ῥήθη-
σεται. ὡσαύτωσι δὲ καὶ τῶν διαφορῶν λόγον
ἐπιδέχεται τὰ εἴδη καὶ τὰ ἀτόμα. συνωνύμως δὲ
γε ἢν ὅν καὶ τούτων κοινῶν καὶ ὁ λόγος ὁ αὐτὸς,
ὡστε πάντα τὰ ἀπὸ τῶν οὐσιῶν καὶ τὰ ἀπὸ τῶν
διαφορῶν συνωνύμως λέγεται.

10 Πάσα δὲ οὐσία δοκεῖ τὸδὲ τι σημαίνειν. ἐπὶ
μὲν οὖν τῶν πρῶτων οὐσιῶν ἀναμφίσκητον καὶ
ἀληθὲς ἐστίν ὅτι τὸδὲ τι σημαίνει· ἀτόμον γὰρ καὶ
ἐν ἀριθμῷ τὸ δηλούμενον ἐστὶν· ἐπὶ δὲ τῶν δευ-
τέρων οὐσιῶν φαίνεται μὲν ὀμοίως τὰς σχήματι
15 τῆς προσηγορίας τὸδὲ τι σημαίνειν, ὅταν εἶπη
ἀνθρωπὸν ἢ ζῷον, οὐ μὴν ἀληθὲς γε, ἀλλὰ μᾶλλον
ποιόν τι σημαίνει· οὐ γὰρ ἐν ἑστὶ τὸ ὑποκειμένον
ὡσπερ ἢ πρῶτη οὐσία, ἀλλὰ κατὰ πολλῶν ὁ
ἀνθρωπὸς λέγεται καὶ τὸ ζῷον. οὐχ ἀπλῶς δὲ
ποιόν τι σημαίνει, ὡσπερ τὸ λευκὸν. οὐδὲν γὰρ
20 ἀλλὰ σημαίνει τὸ λευκὸν ᾗ· τὸ δὲ εἴδος
CATEGORIES, v

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· ποιὰν γὰρ τινα οὐσίαν σημαίνει. ἐπὶ πλείον δὲ τῷ γένει ἡ τῷ εἶδει τὸν ἀφορισμὸν ποιεῖται· ὁ γὰρ ζώον εἴπτὼν ἐπὶ πλείον περιλαμβάνει ἡ ὁ τῶν ἀνθρώπων.

38 Ἄρα χρήσκει δὲ ταῖς οὐσίαις καὶ τὸ μηδὲν αὐταῖς ἐναντίον εἶναι. τῇ γὰρ πρώτῃ οὐσίᾳ τί ἂν εἴη ἐναντίον, οἷον τῷ τυχ ἀνθρώπῳ ἡ τῷ τυχ ζῷῳ, οὐδὲν γὰρ ἐστὶν ἐναντίον. οὐδὲ γε τῷ ἀνθρώπῳ ἡ τῷ ζῷῳ οὐδὲν ἐστὶν ἐναντίον. οὐκ ἴδιον δὲ τούτῳ τῆς οὐσίας, ἀλλὰ καὶ ἐπὶ ἄλλων πολλῶν, οἶνον ἐπὶ τοῦ ποσοῦ· τῷ γὰρ διητηθείη ἡ τρίτη ἐναντίον.

39 οὐδὲν ἐστὶν ἐναντίον, οὐδὲ γε τοῖς δέκα, οὐδὲ τῶν τοιούτων οὐδενί, εἰ μὴ τίς τὸ πολύ τῷ ὀλίγῳ φαίη ἐναντίον εἶναι ἡ τὸ μέγα τῷ μικρῷ. τῶν δὲ ἀφωρισμένων ποσῶν οὐδὲν οὐδενί ἐναντίον ἐστιν.

Δόκει δὲ ἡ οὐσία μὴ ἐπιδέχεσθαι τὸ μᾶλλον καὶ τὸ ἡττον. λέγω δὲ οὐχ ὅτι οὐσία οὐσίας οὐκ ἔστι μᾶλλον οὐσία καὶ ἡττον οὐσία (τούτῳ μὲν γὰρ εἰρηται ὅτι ἐστὶν), ἀλλ' ὅτι ἐκάστῃ οὐσίᾳ τοῦθ' ὡσπερ ἐστίν, οὐ λέγεται μᾶλλον καὶ ἡττον. οἶνον εἰ ἐστὶν αὐτῇ ἡ οὐσία ἀνθρώπος, οὐκ ἔσται μᾶλλον καὶ ἡττον ἀνθρώπος, οὔτε αὐτὸς ἐαυτοῦ οὔτε ἐτερος ἐτέρου· οὐ γὰρ ἐστὶν ἐτερος ἐτέρου μᾶλλον ἀνθρώπος, ὡσπερ τὸ λευκὸν ἐτερον ἐτέρου μᾶλλον ἐστὶ καὶ ἡττον λευκόν, καὶ καλὸν ἐτερον ἐτέρου μᾶλλον καλὸν καὶ ἡττον λέγεται. καὶ αὐτὸ δὲ αὐτοῦ μᾶλλον καὶ ἡττον λέγεται, οἶνον τὸ σῶμα λευκὸν ὃν μᾶλλον λευκὸν εἶναι λέγεται νῦν ἡ πρότερον, καὶ θερμὸν ὃν μᾶλλον θερμὸν καὶ ἡττον λέγεται. ἡ δὲ γε οὐσία οὐδὲν μᾶλλον καὶ ἡττον
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· οὐδὲ γὰρ ἀνθρωπὸς μᾶλλον νῦν ἀνθρωπὸς ἢ πρὸτερον λέγεται, οὐδὲ γε τῶν ἄλλων οὐδὲν, ὡσα ἐστὶν οὐσία. ἀπο τὸ μᾶλλον καὶ ἦττον.

10 Μάλιστα δὲ ἵδιον τῆς οὐσίας δοκεῖ εἶναι τὸ ταυτὸν καὶ ἐν ἀριθμῷ ὄν τῶν ἐναντίων εἶναι δεκτικόν, οἷον ἐπὶ μὲν τῶν ἄλλων οὐκ ἂν ἔχοι τις τὸ τοιοῦτο προενεγκεῖν, ὡσα μὴ εἰσὶν οὐσία, ἢ ἐν ἀριθμῷ ὄν τῶν ἐναντίων δεκτικὸν ἐστίν, οἷον τὸ χρώμα, ὡς τῶν δὲ καὶ ταυτὸν τῷ ἀριθμῷ, οὐκ ἐσται λευκὸν καὶ μέλαν, οὐδὲ ἡ αὐτὴ πράξεις καὶ μία τῷ ἀριθμῷ οὐκ ἐσται φαύλη καὶ σπουδαία· ὡσαύτως δὲ καὶ ἐπὶ τῶν ἄλλων, ὡσα μὴ εἰσὶν οὐσία. ἢ δὲ γε οὐσία ἐν καὶ ταυτὸν ἀριθμῷ ὄν δεκτικὸν τῶν ἐναντίων ἐστίν, οἷον τὸ ἀνθρωπὸς,

15 εἰς καὶ ὁ αὐτὸς ὄν, ὅτε μὲν λευκός ὅτε δὲ μέλας γίνεται, καὶ θερμὸς καὶ ψυχρός, καὶ φαύλος καὶ σπουδαῖος. ἐπὶ δὲ τῶν ἄλλων οὐδενός φαίνεται τὸ τοιοῦτον, εἰ μὴ τὶς ἐνίστατο τὸν λόγον καὶ τὴν δόξαν φάσκων τῶν ἐναντίων εἶναι δεκτικὰ. ὁ γὰρ αὐτὸς λόγος ἀληθῆς καὶ ψευδῆς εἶναι δοκεῖ.

20 οἷον εἰ ἀληθῆς εἰς ὁ λόγος τὸ καθήθαι τυα, ἀναστάντος αὐτοῦ ὁ αὐτὸς αὐτοῦ λόγος ψευδῆς ἐσται. ὡσαύτως δὲ καὶ ἐπὶ τὶς δόξης· εἰ γὰρ τῆς ἀληθῶς δοξᾶζοι τὸ καθήθαι τυα, ἀναστάντος αὐτοῦ ψευδῆς δοξᾶσει, τὴν αὐτὴν ἔχων περὶ αὐτοῦ δόξαν. εἰ δὲ τις καὶ τοῦτο παραδέχοιτο, ἀλλὰ τῷ γε τρόπῳ διαφέρει. τὰ μὲν γὰρ ἐπὶ τῶν οὐσιῶν

25 αὐτὰ μεταβάλλονται δεκτικὰ τῶν ἐναντίων ἐστὶ· ψυχρὸν γὰρ ἐκ θερμοῦ γενόμενον μετέβαλεν (ἡλ- λοίωτα γὰρ) καὶ μέλαν ἐκ λευκοῦ καὶ σπουδαῖον

* True at one time and false at another.
CATEGORIES, v

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.a ‘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.

b 2

33
ARISTOTLE

€κ φαύλου. ώσαύτως δε καὶ ἐπὶ τῶν ἄλλων ἐκαστον αὐτῶν μεταβολήν δεχόμενον τῶν ἐναντίων δεκτικον ἔστιν. ὁ δὲ λόγος καὶ ἡ δόξα αὐτὰ μὲν ἀκίνητα πάντῃ πάντως διαμένει, τοῦ δὲ πράγματος κινουμένου τὸ ἐναντίον περὶ αὐτὰ γίνεται. ὁ μὲν γὰρ λόγος διαμένει ὁ αὐτὸς τὸ καθήσαται τινα, τοῦ δὲ πράγματος κυηθέντος ὡς μὲν ἀληθῆς ὡς ὑπὲρ λεγεται. ώσαύτως δὲ καὶ ἕπὶ τῆς δόξης. ὡστε τῷ τρόπῳ γε ὁδὸν ἂν εἶη τῆς ὀυσίας τὸ κατὰ τὴν ἑαυτῆς μεταβολῆν δεκτικῆν τῶν ἐναντίων ἐλναι.

Εἰ δὴ τις καὶ ταῦτα παραδέχοιτο, τὸν λόγον καὶ τὴν δόξαν δεκτικὰ τῶν ἐναντίων ἐλναι, ὡς ἂστω ἀληθὲς τούτο. οὐ γὰρ λόγος καὶ ἡ δόξα ὡς τῷ αὐτὰ δέχεσθαι τα τῶν ἐναντίων ἐλναι δεκτικὰ λέγεται, ἀλλὰ τῷ περὶ ἑκεῖν τὸ πάθος γεγενηθα. τῷ γὰρ τὸ πράγμα ἐλναι ἡ μὴ ἐλναι τοῦτῳ καὶ ὁ λόγος ἀληθῆς ἡ ψευδῆς ἐλναι λέγεται, οὐ τῷ αὐτὸς δεκτικὸς ἐλναι τῶν ἐναντίων. ἀπλῶς γὰρ οὐθὲν υπ᾽ οὐδενός οὔτε ὁ λόγος κινεῖται οὔτε ἡ δόξα, ὡστε οὐκ ἂν εἰη δεκτικὰ τῶν ἐναντίων μηδενὸς ἐν αὐτοῖς γενομένου πάθους. ἢ δὲ γε ὀυσία τῷ αὐτῇ τὰ ἑαυτία δέχεσθαι, τοῦτῳ δεκτικῇ τῶν ἐναντίων ἐλναι λέγεται: νόσον γὰρ καὶ ἤγειαν δέχεται, καὶ λεικότητα καὶ μελανίαν καὶ ἐκαστον τῶν τοιούτων αὐτὴ δεχομένη τῶν ἐναντίων ἐλναι δεκτική λέγεται. ὡστε ἂδεν ἂν ὀυσίας εἰη τὸ ταὐτὸν καὶ ἐν ἀριθμῷ ὅν δεκτικὸν ἐλναι τῶν ἐναντίων κατὰ τὴν ἑαυτῆς μεταβολῆν. περὶ μὲν οὖν ὀυσίας τοσαύτα εἰρήσθω.

20 VI. Τοῦ δὲ ποσοῦ τὸ μὲν ἄστη διωρισμένον, τὸ 1 δὲ B.
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
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 μέλλοντα. πάλιν ὁ τόπος τῶν συνεχῶν ἐστὶ· τόπον γάρ τινα τὰ τοῦ σώματος μόρια κατέχει, ἀ πρὸς τινα κοινὸν ὄρον συνάπτει· οὐκοῦν καὶ τὰ τοῦ τόπου μόρια, ἀ κατέχει ἕκαστον τῶν τοῦ σώματος μορίων, πρὸς τὸν αὐτὸν ὄρον συνάπτει πρὸς ὅν καὶ τὰ τοῦ σώματος μόρια. ὡστε συνεχὴς ἄν εἰη καὶ ὁ τόπος· πρὸς γὰρ ἐνα κοινὸν ὄρον αὐτοῦ τὰ μόρια συνάπτει.

"Ετι δὲ τὰ μὲν ἐκ θέσιν ἐχοίτων πρὸς ἄλληλα τῶν ἐν αὐτοῖς μορίων συνέστηκε, τὰ δὲ οὐκ ἐξ ἐχόντων θέσιν, οἶον τὰ μὲν τῆς γραμμῆς μόρια θέσιν ἔχει πρὸς ἄλληλα· ἐκαστὸν γὰρ αὐτῶν κεῖται που, καὶ ἔχοις ἂν διαλαβεῖν καὶ ἀποδοθεῖν ὅπου ἐκαστὸν κεῖται ἐν τῷ ἐπιτείχῳ καὶ πρὸς ποὺν μόριον τῶν λοιπῶν συνάπτει. ὡσαύτως δὲ καὶ τὰ τοῦ ἐπιτείχου μόρια θέσιν ἔχει τινα· ὅμοιως γὰρ ἂν ἀποδοθεῖ ἐκαστὸν οὐ κεῖται, καὶ ποῖα συνάπτει πρὸς ἄλληλα. καὶ τὰ τοῦ ἀπερεου δὲ ὡσαύτως, καὶ τὰ τοῦ τοποῦ. ἐπὶ δὲ γε τοῦ ἀριθμοῦ οὐκ ἂν ἔχοι τις ἑπιδεΪξαι ὡς τὰ μόρια αὐτοῦ θέσιν τινα ἔχει πρὸς ἄλληλα· ἡ κεῖται που, ἡ ποῖα γε πρὸς ἄλληλα συνάπτει τῶν μορίων. οὐδὲ τὰ τοῦ χρόνου· ὑπομένει γὰρ οὐδὲν τῶν τοῦ χρόνου μορίων· ὁ δὲ μὴ ἐστιν ὑπομένον, πῶς ἂν τοῦτο θέσιν τινα ἔχοι· ἀλλὰ μᾶλλον τάξιν τινα εἴποις ἂν ἔχειν τῷ τὸ μὲν πρότερον εἶναι τοῦ χρόνου τὸ δ’ ὑστερον. καὶ ἕπι τοῦ ἀριθμοῦ δὲ ὡσαύτως τῷ τὸ ἐν πρότερον ἀριθμοῖς τῶν δύο καὶ τὰ δύο τῶν τριῶν· καὶ οὖτω τάξιν τινὰ ἂν ἔχοι, θέσιν δὲ οὐ πάνυ 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 ὡσαυτὸς· οὐδὲν γὰρ ὑπομένει τῶν
μορίων αὐτοῦ, ἀλλ' εἰρηταί τε καὶ οὐκ ἐστὶν ἐτὶ
tοῦτο λαβεῖν, ἀπὸ οὗ ἂν εἰῇ θέσις τῶν μορίων
αὐτοῦ, εἰγε μηδὲν ὑπομένει. τὰ μὲν οὖν ἐκ θέσιν
ἐχόντων τῶν μορίων συνέστηκε, τὰ δὲ οὐκ ἐξ
ἐχόντων θέσιν.

Κυρίως δὲ ποσά ταῦτα μόνα λέγεται τὰ εἰρημένα,
tὰ δὲ ἄλλα πάντα κατὰ συμβεβηκός· εἰς ταῦτα
γὰρ ἀποβλέποντες καὶ τάλλα ποσά λέγομεν, οἰον
πολὺ τὸ λευκὸν λέγεται τῷ τῆς ἐπιφάνειαν πόλλῃ
ἐναι, καὶ ἡ πρᾶξις μακρὰ τῷ γε τῶν χρόνων πολὺν
ἐναι, καὶ ἡ κίνησις πολλή. οὐ γὰρ καθ' αὐτό
ἐκαστὸν τούτων ποσόν λέγεται. οἰον εἰάν ἀποδιδῷ
tις πόση τις ἡ πρᾶξις ἐστὶ, τῷ χρόνῳ ὅριει,
ἐναισχυναίαν ἡ οὕτω πως ἀποδιδοὺς. καὶ τὸ λευκὸν
ποσόν τι ἀποδιδοὺς τῇ ἐπιφανεία ὅριει· ὡστέ γὰρ
ἂν ἡ ἐπιφανεία ἢ, τοσοῦτον καὶ τὸ λευκὸν φήσειν
ἂν ἐναι. ὡστε μόνα κυρίως καὶ καθ' αὐτὰ ποσὰ
λέγεται τὰ εἰρημένα, τῶν δὲ ἄλλων οὐδὲν καθ'
αὐτό, ἀλλ' εἰ ἄρα, κατὰ συμβεβηκός.

Ἔτι τῷ ποσῷ οὐδέν ἐστὶν ἐναντίον. ἐπὶ μὲν
γὰρ τῶν ἀφωρισμένων φανερῶν ὅτι οὐδέν ἐστὶν
ἐναντίον, οἰον τῷ διπήκει ἡ τριπήκει η τῇ ἐπι-
φανείᾳ η τῶν τοιούτων τῶν οὐδέν γὰρ ἐστὶν
αὐτοῖς ἐναντίον, εἰ μὴ ἄρα τὸ πολὺ τῷ ὀλίγῳ
φαίη τις εἶναι ἐναντίον ἢ τὸ μέγα τῷ μικρῷ.
tούτων δὲ οὐδέν ἐστὶ ποσὸν ἄλλα τῶν πρὸς τι
οὐδέν γὰρ αὐτὸ καθ' αὐτὸ μέγα λέγεται ἢ μικρὸν,
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
ΑΡΙΣТОΤΛΕ.  
5b ἀλλὰ τῷ πρὸς ἐτερον ἀναφέρεσθαι, οἷον ὅρος μὲν μικρὸν λέγεται, κέγχρος δὲ μεγάλη τῷ τῆν μὲν 20 τῶν ὁμογενῶν μείζονα εἶναι, τὸ δὲ ἐλαττὸν τῶν ὁμογενῶν. οὐκοῦν πρὸς ἐτερον ἡ ἀναφορά, ἐπεὶ εἰγε καθ’ αὐτὸ μικρὸν ἢ μέγα ἐλέγετο, οὐκ ἄν ποτε τὸ μὲν ὅρος μικρὸν ἐλέγετο, ἡ δὲ κέγχρος μεγάλη. πάλιν ἐν μὲν τῇ κάμη φαμέν πολλοὺς ἄνθρωπος εἶναι, ἐν Ἀθήναις δὲ ὀλίγους πολ- 25 λαπλασίους αὐτῶν ὄντας, καὶ ἐν μὲν τῇ οἰκίᾳ πολ- λούς, ἐν δὲ τῷ θεάτρῳ ὀλίγους πολλῷ πλείους ὄντας. ἐτι τὸ μὲν δίπηχυ καὶ τρίπηχυ καὶ ἐκαστὸν τῶν τουούτων ποσὸν σημαινεῖ, τὸ δὲ μέγα ἢ μικρὸν οὐ σημαινεῖ ποσὸν ἀλλὰ μᾶλλον πρὸς τι πρὸς γὰρ ἐτερον θεωρεῖται τὸ μέγα καὶ τὸ μικρὸν. ὥστε 30 φανερὸν ὅτι ταῦτα τῶν πρὸς τί ἐστιν.  
"Ετι ἐάν τε τιθῇ τις ταῦτα ποσὰ εἶναι εάν τε μή τιθῇ, οὐκ ἐστὶν αὐτοῖς ἐναιτίων οὐδέν· ὃ γὰρ μή ἐστιν αὐτὸ καθ’ αὐτὸ λαβεῖν ἀλλὰ πρὸς ἐτερον ἀναφέρεται, πῶς ἄν φαίη τις τούτῳ τι ἐναιτίων; ἐτὶ δὲ εἰ ἐσται τὸ μέγα καὶ τὸ μικρὸν ἐναιτία, 35 συμβηγεῖται τὸ αὐτὸ ἁμα τὰ ἐναιτία ἐπιδεχεσθαι καὶ αὐτὰ ἐαυτοῖς εἶναι ἐναιτία. συμβαίνει γὰρ ποτε ἁμα τὸ αὐτὸ μέγα τε καὶ μικρὸν εἶναι· ἐστι γὰρ πρὸς μὲν τοῦτο μικρὸν, πρὸς ἐτερον δὲ τὸ αὐτὸ τούτῳ μέγα. ὥστε τὸ αὐτὸ καὶ μέγα καὶ μικρὸν κατὰ τὸν αὐτὸν χρόνον εἶναι συμβαίνει.  
6a ἀλλ’ ὅστε ἁμα τὰ ἐναιτία ἐπιδεχεσθαι. ἀλλ’ οὐδέν δοκεῖ ἁμα τὰ ἐναιτία ἐπιδεχεσθαι, οἷον ἐπὶ τῆς οὐσίας· δεκτικὴ μὲν τῶν ἐναιτίων δοκεῖ εἶναι, ἀλλ’ οὕτω γε ἁμα νοσεῖ καὶ ἱγιαίνει. ἀλλ’ οὐδέ
CATEGORIES, vi

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
Aristotle

6 λευκόν καὶ μέλαν ἐστὶν ἁμα. ἀλλ' οὐδὲ τῶν ἄλλων
οὐδέν ἐστὶν ὁ ἁμα τὰ ἐναντία ἐπιδέχεται. καὶ
αὕτ' ἐαυτοῖς συμβαίνει ἐναντία εἶναι. εἰ γάρ
ἐστι τὸ μέγα τῷ μικρῷ ἐναντίον, τὸ δ' αὐτὸ ἐστὶν
ἀμα μέγα καὶ μικρόν, αὕτ' ἐαυτῷ εἰη ἂν ἐναντίον.
ἀλλ' τῶν ἀδυνάτων ἐστὶν αὐτὸ ἐαυτῷ εἶναι τι
ἐναντίον. οὐκ ἐστὶν ἄρα τὸ μέγα τῷ μικρῷ
ἐναντίον, οὐδὲ τὸ πολὺ τῷ ὄλγῳ. ὡστε εἰ καὶ
10 μὴ τῶν πρὸς τι ταῦτα τις ἐρεῖ ἀλλὰ τοῦ ποσοῦ,
οὐδέν ἐναντίον εἴει.

Μάλιστα δὲ ἡ ἐναντιότης τοῦ ποσοῦ περὶ τὸν
tόπον δοκεῖ ὑπάρχειν. τὸ γὰρ ἀνω τῷ κάτω
ἐναντίον τιθέαται, τὴν πρὸς τὸ μέσου χώραν κάτω
λέγοντες διὰ τὸ πλείστην τῶν μέσων διάστασιν πρὸς
tά πέρατα τοῦ κόσμου εἶναι. ἐοικασί δὲ καὶ τὸν
tῶν ἄλλων ἐναντίων ὀρισμόν ἀπὸ τούτων ἐπι-
φέρειν· τὰ γὰρ πλείστων ἄλληλων διεστικότα τῶν
eν τῷ αὐτῷ γένει ἐναντία ὀρίζονται.

20 Οὐ δοκεῖ δὲ τὸ ποσὸν ἐπιδέχεσθαι τὸ μᾶλλον
καὶ ἦττον, οἷον τὸ δίπηχυ· οὐ γὰρ ἐστὶν ἐτέρου
ἐτέρου μᾶλλον δίπηχυ. οὐδ' ἐπὶ τοῦ ἀριθμοῦ,
οἷον τὰ τρία τῶν πέντε οὐδέν μᾶλλον τὰ τρία,
οὐδὲ τὰ πέντε τῶν τριῶν. οὐδὲ χρόνος ἐτέρος
ἐτέρου μᾶλλον χρόνος εἶναι λέγεται. οὐδ' ἐπὶ

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* 'The extremities' apparently refers to the circumference taken as a whole.
* The meaning I give to this sentence the context appears to require. But the text must, I think, be corrupt.

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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. 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. One period of time is, moreover, not more of a time than another. Nor of any other
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 ἐξ ἑαυτῶς ἐξις
6 λέγεται καὶ ἡ ἐπιστήμη τινὸς ἐπιστήμη καὶ ἡ
θέσις τινὸς θέσις, καὶ τὰ ἄλλα δὲ ὑσάυτως. πρὸς
τι οὖν ἐστὶν ὅσα αὐτὰ ἀπερ ἐστὶν ἔτερων εἶναι
λέγεται, ἡ ὀπωσοῦν ἄλλως πρὸς ἔτερον, οἰον ὅρος
μέγα λέγεται πρὸς ἔτερον· πρὸς τι γὰρ μέγα
λέγεται τὸ ὅρος· καὶ τὸ ὀμοιον τινὶ ὀμοιον λέγεται,
10 καὶ τὰ ἄλλα δὲ τὰ τοιαῦτα ὑσάυτως πρὸς τι
λέγεται. ἐτὶ δὲ καὶ ἡ ἀνάκλησις καὶ ἡ στάσις καὶ
ἡ καθέδρα θέσεις τινές, ἡ δὲ θέσις τῶν πρὸς τι
τὸ δὲ ἀνακείσθαι ἡ ἐστάναι ἡ καθησκαί αὐτὰ μὲν
οὐκ εἰσὶ θέσεις, παρωνύμως δὲ ἀπὸ τῶν εἰρημένων
θέσεων λέγεται.

15 Ἡπάρχει δὲ καὶ ἐναντιότητα ἐν τοῖς πρὸς τι, οἰον
ἀρετὴ κακία ἐναντίον, ἐκάτερον ὃν τῶν πρὸς τι,
καὶ ἐπιστήμη ἀγνοία. οὐ πάσι δὲ τοῖς πρὸς τι
ὑπάρχει τὸ ἐναντίον· τῶ γὰρ διπλασίῳ οὔδεν ἐστὶν
ἐναντίον, οὐδὲ τῷ τριπλασίῳ, οὐδὲ τῶν τοιούτων
οὐδενί.

20 Δοκεῖ δὲ καὶ τὸ μάλλον καὶ τὸ ἦττον ἐπιδέχεσθαι
τὰ πρὸς τι· ὀμοιον γὰρ καὶ ἀνόμοιον μάλλον καὶ
ἡττον λέγεται, καὶ ἰσον καὶ ἀνίσον μάλλον καὶ
ἡττον λέγεται, ἐκάτερον αὐτῶν πρὸς τι ὅν· τὸ τε
gὰρ ὀμοιον τινὶ ὀμοιον λέγεται καὶ τὸ ἀνόμοιον τινὶ
ἀνόμοιον. οὐ πάντα δὲ τὰ πρὸς τι ἐπιδέχεται τὸ
μάλλον καὶ ἦττον· τὸ γὰρ διπλάσιον οὐ λέγεται
μάλλον καὶ ἦττον διπλάσιον, οὐδὲ τῶν τοιούτων
οὐδέν.

Πάντα δὲ τὰ πρὸς τι πρὸς ἀντιστρέφοντα λέγεται,
8 οἰον οἱ δουλος δεσπότου δουλος λέγεται καὶ ὁ
despotēs douλo δespotēs, καὶ τὸ διπλάσιον
ήμισεος διπλάσιον καὶ τὸ ἡμιον διπλάσιον ἡμιον.
whatever. 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 μείζον ἑλάττονος μείζον καὶ τὸ ἑλάττον μείζονος ἑλάττον. ὡσάυτως δὲ καὶ ἐπὶ τῶν ἄλλων, πλὴν τῇ πτώσει εἴστε διοίσει κατὰ τὴν λέξιν, οἶον ἡ ἐπιστήμη ἐπιστητοῦ λέγεται ἐπιστήμη καὶ τὸ ἐπιστητόν ἐπιστητήν, καὶ ἡ αἰσθησις αἰσθητοῦ αἰσθησις καὶ τὸ αἰσθητόν αἰσθήσει αἰσθητῶν.

Οὐ μὴν ἀλλ' εἴστε οὐ δόξει ἀντιστρέφειν, ἕαν μὴ οἰκείως πρὸς δ' λέγεται ἀποδοθῇ, ἀλλ' δι- 
αμάρτη ὁ ἀποδίδοις, οἶον τὸ πτερὸν ἐὰν ἀποδοθῇ ὅρνιθος, οὐκ ἀντιστρέφει ὅρνις πτεροῦ. οὐ γὰρ 
οἰκείως τὸ πρῶτον ἀποδέδοται πτερὸν ὅρνιθος. οὐ 
γὰρ ὃ ὅρνις, ταῦτῃ τὸ πτερὸν αὐτοῦ λέγεται, ἀλλ' 
ἡ πτερωτὸν ἐστὶν: πολλῶν γὰρ καὶ ἄλλων πτερὰ ἐστὶν, ἀ οὐκ εἰσὶν ὅρνιθες. ὡστε ἐὰν ἀποδοθῇ 
οἰκείως, καὶ ἀντιστρέφει, οἶον τὸ πτερὸν πτερωτοῦ 
πτερὸν καὶ τὸ πτερωτὸν πτερῷ πτερωτῶν.

'Ενίοτε δὲ καὶ ὅνοματοποιεῖν ἰσως ἀναγκαῖον, ἐὰν μὴ οἰκείως πρὸς δ' οἰκείως ἀν ἀπο- 
δοθείη, οἶον τὸ πηδάλιον τοῦ πλοίου ἐὰν ἀποδοθῇ, 
οὐκ οἰκεία ἡ ἀπόδοσις γίνεται οὖ γὰρ ἢ πλοῖον.

ταὐτῇ αὐτοῦ τὸ πηδάλιον λέγεται· ἐστὶ γὰρ πλοῖο 
ὡν οὐκ ἐστὶ πηδάλια. διὸ οὐκ ἀντιστρέψει τὸ 
γὰρ πλοῖον οὐ λέγεται πηδαλίου πλοῖον. ἀλλ' 
ἰσως οἰκειοτέρα ἢ ἡ ἀπόδοσις εἰς, εἰ οὗτο πως 
ἀποδοθείη, τὸ πηδάλιον πηδαλωτοῦ πηδάλιον, ἡ 
ὄπωσον ἄλλως: οἶομα γὰρ οὐ κεῖται. καὶ ἀντι-

στρέφει γε, εἰ δὲ 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
λιωτόν πηδαλίῳ πηδαλιωτῶν. ὲσαίτως δὲ καὶ ἐπὶ τῶν ἄλλων, οἴον ἡ κεφαλὴ οἰκειοστέρως ἂν ἀποδοθεῖη κεφαλωτοῦ ἡ ζῷον ἀποδιδομένη· οὐ γὰρ ἡ ζῷον, κεφαλὴν ἔχει· πολλά γὰρ τῶν ζῴων κεφαλὴν οὐκ ἔχει. οὕτω δὲ ράστα ἂν ἴσως τις λάβωι οἷς μὴ κεῖται ὀνόματα, εἰ ἀπὸ τῶν πρώτων καὶ τοῖς πρὸς αὐτὰ ἀντιστρέφουσι τιθείη τὰ ὀνόματα, ὥσπερ ἐπὶ τῶν προειρημένων ἀπὸ τοῦ πτεροῦ τὸ πτερωτὸν καὶ ἀπὸ τοῦ πηδαλίου τὸ πηδαλιωτὸν.

Πάντα οὖν τὰ πρὸς τι, ἐάν περ οἰκείως ἀποδιδῶται, πρὸς ἀντιστρέφοιτα λέγεται, ἐπεὶ ἐάν γε πρὸς τὸ τυχὸν ἀποδιδῶται καὶ μὴ πρὸς αὐτὸ δὲ λέγεται, οὐκ ἀντιστρέφει. λέγω δὲ ὅτι οὐδὲ τῶν ὀμολογουμένως πρὸς ἀντιστρέφοντα λεγομένων, καὶ ὀνομάτων αὐτοῖς κειμένων, οὐδὲν ἀντιστρέφει, ἐάν πρὸς τι τῶν συμβεβηκότων ἀποδιδῶται καὶ μὴ πρὸς αὐτὸ δὲ λέγεται, οἷον ὁ δοῦλος ἐὰν μὴ δεσπότου ἀποδοθῇ ἀλλ' ἀνθρώπον ἡ δίποδος ἡ ὀνομασία τῶν τοιούτων, οὐκ ἀντιστρέφει· οὐ γὰρ οἰκεία ἡ ἀπόδοσις ἐστίν. ἐπὶ δ' ἐάν μὲν τι οἰκείως ἀποδεδομένου ἢ πρὸς δὲ λέγεται, πάντων περιαρουμένων τῶν ἄλλων ὅσα συμβεβηκότα ἐστίν, καταλειπομένου δὲ μόνον τούτου πρὸς δ' ἀπεδόθη οἰκείως, ἀεὶ πρὸς αὐτὸ ῥηθήσεται, οἷον ὁ δοῦλος ἐὰν πρὸς δεσπότην λέγηται, περιαρουμένων τῶν ἄλλων ἀπάντων ὅσα συμβεβηκότα ἐστίν 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-
οἱ οὖν τὸ δίποδο εἶναι καὶ τὸ ἐπιστήμης δεκτικῷ καὶ τὸ ἀνθρώπῳ, καταλειπομένου δὲ μόνου τοῦ δεσπότην εἶναι, ἀεὶ ὁ δοῦλος πρὸς αὐτὸ ῥηθῆσεται· ο γὰρ δοῦλος δεσπότου δοῦλος λέγεται. Εἰνάν δὲ γε μὴ οἰκείως ἀποδοθῇ πρὸς ὁ ποτε λέγεται, περιαιρουμένων μὲν τῶν ἄλλων, καταλειπομένου δὲ μόνου τοῦ πρὸς ὁ ἀπεδόθη, οὐ ῥηθῆσεται πρὸς αὐτὸ. ἀποδεδόθη γὰρ ὁ δοῦλος ἀνθρώπου καὶ τὸ πτερὸν ὀρνιθός, καὶ περιηγήθη τοῦ ἀνθρώπου τὸ δεσπότην αὐτῶν εἶναι· οὐ γὰρ ἔτι ὁ δοῦλος πρὸς ἀνθρωπον ῥηθῆσεται· μὴ γὰρ ὄντος δεσπότου οὐδὲ δοῦλος ἔστω. ὥσαυτως καὶ τοῦ ὀρνιθός περιηγήθη τὸ πτερωτῷ εἶναι· οὐ γὰρ ἔτι ἔσται τὸ πτερὸν τῶν πρὸς τι· μὴ γὰρ ὄντος πτερωτοῦ οὐδὲ πτερόν ἔσται τινὸς.

5 Ωςτε δεὶ μὲν ἀποδιδόναι πρὸς ὁ ποτε οἰκείως λέγεται. κἂν μὲν ὄνομα ἢ κείμενον, ῥαδία ἢ ἀπόδοσις γίνεται· μὴ ὄντος δὲ ἀναγκαῖον ἵσως ὀνοματοποιεῖν. οὔτω δὲ ἀποδιδομένων φανερὸν οτι πάντα τὰ πρὸς τι πρὸς ἀντιστρέφοντα λέγεται.

10 Δοκεῖ δὲ τὰ πρὸς τι ἁμα τῇ φύσει εἶναι, καὶ ἔτι μὲν τῶν πλείστων ἀληθές ἔστων. ἁμα γὰρ διπλάσιον τέ ἔστι καὶ ἡμιου, καὶ ἡμίσεος ὄντος διπλάσιον ἔστι· καὶ δεσπότου ὄντος δοῦλος ἔστι, καὶ δούλου ὄντος δεσπότης ἔστιν· ὁμοιός δὲ τούτως καὶ τὰ ἄλλα. καὶ συναναιρεῖ δὲ ταῦτα ἀληλα· μὴ γὰρ ὄντος διπλάσιον οὐκ ἔστων ἡμιου, καὶ ἡμίσεος μὴ ὄντος οὐκ ἔστι διπλάσιον· ὡσαυτῶς δὲ καὶ ἔτι τῶν ἄλλων οὐσα τοιαῦτα. οὐκ ἔτι πάντων δὲ τῶν πρὸς τι ἀληθές δοκεῖ τὸ ἁμα τῇ φύσει
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
7 ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο ο
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.
8a. "Ετι ἡ μὲν αἰσθήσεις ἀμα τῷ αἰσθητικῷ γίνεται ἀμα γὰρ τῷ ζῷῳ γίνεται καὶ αἰσθήσεις. τὸ δὲ γε αἰσθητόν ἐστι καὶ πρὸ τοῦ ζῷου ἡ αἰσθήσις εἶναι πῦρ γὰρ καὶ ὕδωρ καὶ τὰ τοιαῦτα, ἐξ ὤν καὶ τὸ
10 ζῷου συνίσταται, ἐστὶ καὶ πρὸ τοῦ ζῷου ὅλως εἶναι ἡ αἰσθήσις, ὅστε πρότερον ἀν τῆς αἰσθήσεως τὸ αἰσθητὸν εἶναι δόξειν.

"Εχει δὲ ἀπορίαν πότερον οὐδεμία οὐσία τῶν
15 πρὸς τι λέγεται, καθάπερ δοκεῖ, η τοῦτο ἐνδέχεται κατὰ τινας τῶν δευτέρων οὐσιῶν. ἐπὶ μὲν γὰρ τῶν πρῶτων οὐσιῶν ἀληθὲς ἐστιν· οὕτε γὰρ τὰ ὅλα οὕτε τὰ μέρη πρὸς τι λέγεται. ὁ γὰρ τις ἀνθρωπος οὐ λέγεται τινός τις ἀνθρωπος, οὐδὲ ο
tis bois tinos tis boois. ὡσαύτως δὲ καὶ τὰ μέρη. 20 ἡ γὰρ τις χειρ οὐ λέγεται τινός τις χειρ ἀλλὰ τινος χειρ, καὶ η τις κεφαλή οὐ λέγεται τινός τις κεφαλή ἀλλὰ τινος κεφαλή. ὡσαύτως δὲ καὶ ἐπί τῶν δευτέρων οὐσιῶν, ἐπὶ γε τῶν πλείστων, οἶον ὁ ἀνθρωπος οὐ λέγεται τινός ἀνθρωπος, οὐδὲ ο
boiis tinos boois, oüde to eulon tinos eulon, allα 25 tinos κτήμα λέγεται. ἐπὶ μὲν οὖν τῶν τοιούτων φανερῶν ὁτι οὐκ ἐστι τῶν πρὸς τι· ἐπὶ οὖν δὲ τῶν δευτέρων οὐσιῶν ἂντι ἀμφισβήτησιν, οἶον η κεφαλή τινός λέγεται κεφαλή καὶ η χειρ τινός λέγεται χειρ καὶ ἕκαστον τῶν τοιούτων, ὅστε ταύτα τῶν πρὸς τι δόξειν ἄν εἶναι. εἰ μὲν οὖν 30 ἰκανῶς ο τῶν πρὸς τι ὀρισμὸς ἀποδέδοται, 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,
There seems to be something wrong here with the text.
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.

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
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8 b τοιούτο γίνεται, οὐκ ἐπιστήμην οὐ γὰρ ἐτὶ ἀκριβῶς εἶσεται ὅτι ἔστι χείρονος κάλλιον. εἶ γὰρ οὕτως ἐτυχεν, οὐδὲν ἔστι χεῖρον αὐτοῦ. ὥστε φανερῶν ὅτι ἀναγκαῖον ἐστιν, ὅ ἂν εἴδη τις τῶν πρὸς τι ἀφωρισμένως, κάκεινο πρὸς ὁ λέγεται ἀφωρισμένως εἰδέναι.

Τὴν δὲ γε κεφαλήν καὶ τὴν χείρα καὶ ἑκαστὸν τῶν τοιούτων, ἃ εἰσὶν οὐσίαι, αὐτὸ μὲν ὅπερ ἔστιν ἀφωρισμένως ἐστίν εἰδέναι, πρὸς ὁ δὲ λέγεται, οὐκ ἀναγκαῖον. τάνως γὰρ αὐτῇ ἡ κεφαλή ἡ τύνως ἡ χείρ, οὐκ ἐστὶν εἰδέναι ἀφωρισμένως. ὥστε οὐκ ἂν εἴη ταύτα τῶν πρὸς τι. εἰ δὲ μὴ ἔστι ταύτα τῶν πρὸς τι, ἀληθὲς ἂν εἴη λέγειν ὅτι οὐδεμία οὐσία τῶν πρὸς τι ἐστίν. ἦσως δὲ χαλέπον ὑπὲρ τῶν τοιούτων σφοδρῶς ἀποφαίνεσθαι μὴ πολλὰς ἑπεσκεμένοις τὸ μέντοι διηπορηκέναι ἐφ’ ἑκάστου αὐτῶν οὐκ ἀχρηστον ἐστὶν.

25 VIII. Ποιότητα δὲ λέγω καθ’ ἂν ποιοὶ τινες εἶναι λέγονται. ἔστι δὲ ἡ ποιότητα τῶν πλευραχῶς λεγομένων. ἐν μὲν οὕν εἴδος ποιότητος ἔξις καὶ διάθεσις λεγέσθωσαν. διαφέρει δὲ ἔξις διαθέσεως τῷ πολὺ χρονιώτερον εἶναι καὶ μονομιζότερον. τοιαύτα δὲ αἱ τε ἐπιστήμαι καὶ αἱ ἀρεταί. ἦ τε γὰρ ἐπιστήμην δοκεῖ τῶν παραμονίμων εἶναι καὶ δυσκινήτων, εἲν καὶ μετρίως τις ἐπιστήμην λάβῃ, εἲν περ μὴ μεγάλῃ μεταβολῆ γένηται ὑπὸ νόσου ἡ ἄλλοι τινὸς τοιούτου. ὁσαύτως δὲ καὶ ἡ ἀρετή, ὁ γὰρ δικαιοσύνη καὶ ἡ σωφροσύνη καὶ ἑκαστὸν τῶν τοιούτων, οὐκ εὐκίνητον δοκεῖ εἶναι οὐδ’
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 where to 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
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8 ἐὐμετάβολον. διαθέσεις δὲ λέγονται ἂ ἐστὶν ἐὐ-
κινητα καὶ ταχὺ μεταβάλλοντα, οἷον θερμότης καὶ
καταψυξίς καὶ νόσος καὶ ύγίεια καὶ ὁσα ἄλλα
τοιαύτα· διάκειται μὲν γὰρ πως κατὰ ταύτας ὁ
ἀνθρώπος, ταχὺ δὲ μεταβάλλει ἐκ θερμοῦ ψυχρὸς
9 γενόμενος καὶ ἐκ τοῦ ύγιαίνειν εἰς τὸ νοσεῖν,
ώσαυτῶς δὲ καὶ ἐπὶ τῶν ἄλλων, εἴ μὴ τις καὶ
αὐτῶν τούτων τυγχάνοι διὰ χρόνου πλῆθος ἤδη
πεφυσιωμένη καὶ ἀνίατος ἡ πᾶν πυκνότητας οὕσα,
ἡν ἄν τις ἴσως ἐξῆν ἢδη προσαγορεύον. φανερῶν
6 δὲ ὅτι ταύτα βούλονται ἔξεις λέγειν, ἂ ἐστὶ πολυ-
χρονιώτερα καὶ δυσκινητότερα· τοὺς γὰρ τῶν ἐπι-
στημῶν μη πᾶν πάντα κατεχόντας ἄλλ' εὐκινήτους ὁντα
οὐ φασιν ἐξιν ἔχειν, καίτοι διάκεινται γε πως κατά
τὴν ἐπιστήμην ἡ χεῖρον ἡ βέλτιον. ὡστε διαφέρει
ἔξεις διαθέσεως τῷ τὴν μὲν εὐκινήτην εἶναι, τὴν δὲ
10 πολυχρονιωτέραν τε καὶ δυσκινητότεραν. εἰσὶ δὲ
αἱ μὲν ἔξεις καὶ διαθέσεις, αἱ δὲ διαθέσεις οὐκ
ἔχ ἀνάγκης ἔξεις. οἱ μὲν γὰρ ἔξεις ἔχοντες καὶ
διάκεινται γε πως κατ' αὐτὰς, οἱ δὲ διακείμενοι
οὐ πάντως καὶ ἔξιν ἔχονσιν.

Έτερον δὲ γένος ποιότητος καθ' ὁ πυκτικοὺς ἡ
15 δρομικοὺς ἡ υγιεινοὺς ἡ νοσῶδεῖς λέγομεν, καὶ
ἄπλως ὁσα κατὰ δύναμιν φυσικὴν ἡ ἄδυναμίαν
λέγεται· οὐ γὰρ τῶ διακείσθαι γε πως ἐκαστον
τῶν τοιούτων ποιῶν λέγεται, ἄλλα τῶ δύναμιν
20 ἔχειν φυσικὴν ἡ ἄδυναμίαν τοῦ ποιήσαι τι ῥάδιως
CATEGORIES, viii
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
9 a ἡ μηδὲν πάσχειν, οἷον πυκτικοὶ ἡ δρομικοὶ οὐ τῷ
diakeĩσθαι πως λέγονται ἀλλὰ τῷ δύναμιν ἐχεῖν
φυσικὴν τοῦ ποιήσαι τῷ ῥαδίως, ύγειεῖν δὲ λέγονται
τῷ δύναμιν ἐχεῖν φυσικὴν τοῦ μηδέν πάσχειν ὑπὸ
tῶν τυχόντων ῥαδίως, νοσόδεις δὲ τῷ ἀδυναμίᾳν
ἐχεῖν φυσικὴν τοῦ μηδὲν πάσχειν ῥαδίως ὑπὸ τῶν
25 τυχόντων. ὀμοίως δὲ τούτοις καὶ τὸ σκληρὸν
καὶ τὸ μαλακὸν ἐχεῖ· τὸ μὲν γὰρ σκληρὸν λέγεται
τῷ δύναμιν ἐχεῖν τοῦ μὴ ῥαδίως διαφείσθαι, τὸ δὲ
μαλακὸν τῷ ἀδυναμίᾳν ἐχεῖν τοῦ αὐτοῦ τούτου.
Τρίτον δὲ γένος ποιότητος παθητικὴν ποιότητος
καὶ πάθη. ἔστι δὲ τὰ τοιάδε οἷον γλυκύτης τε καὶ
30 πικρότης καὶ στρυφιότης καὶ πάντα τὰ τούτους
συγγενῆ, ἔτι δὲ θερμότης καὶ ψυχρότης καὶ λευ-
κότης καὶ μελανία. ὅτι μὲν οὖν αὐτὰς ποιότητες
εἰσιν, φανερῶν τὰ γὰρ δεδεγμένα αὐτὰ ποιὰ λέγεται
καὶ αὐτὰς, οἷον τὸ μέλι τῷ γλυκύτητα δεδέχθαι
glukū λέγεται καὶ τὸ σῶμα λευκὸν τῷ λευκότητα
35 δεδέχθαι· ὥσαύτως δὲ καὶ ἐπὶ τῶν ἄλλων ἐχεῖ.
Παθητικαὶ δὲ ποιότητες λέγονται οὐ τῷ αὐτᾶς
9 ἄτα δεδεγμένα τὰς ποιότητας πεπονθέναι τς οὔτε
gὰρ τὸ μέλι τῷ πεπονθέναι τι λέγεται γλυκῦ, οὔτε
tῶν ἄλλων τῶν τοιούτων οὐδέν. ὀμοίως δὲ τού-
τοις καὶ ἡ θερμότης καὶ ἡ ψυχρότης παθητικαὶ
5 ποιότητες λέγονται οὐ τῷ αὐτᾶ τὰ δεδεγμένα
πεπονθέναι τι, τῷ δὲ κατὰ τὰς αἰσθήσεις ἐκάστην
tῶν εἰρημένων ποιότητων πάθους εἶναι ποιητικὴν
παθητικαὶ ποιότητες λέγονται· ἡ τε γὰρ γλυκύτης
66
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 ἐμποιεῖ καὶ ἡ θερμότης κατὰ τὴν ἄφην. ὀμοίως δὲ καὶ αἱ ἄλλαι.

10 Λευκότης δὲ καὶ μελανία καὶ αἱ ἄλλαι χρωμαὶ οὐ τὸν αὐτὸν τρόπον τοῖς εἰρημένοις παθητικαὶ ποιότητες λέγονται, ἀλλὰ τῷ αὕτῳ ἀπὸ πάθους γεγονέναι. ὅτι μὲν οὖν γίνονται διὰ πάθος πολλαὶ μεταβολαὶ χρωμάτων, δὴλον: αἰσχυνθεὶς γὰρ τις ἔρυθρός ἐγένετο καὶ φοβηθεὶς ώχρος καὶ έκαστον τῶν τοιούτων. ὡςτε καὶ εἰ τις φύσει τῶν τοιούτων τι παθῶν πέποθεν ἐκ τινῶν φυσικῶν συμπτωμάτων, τὴν ὀμοίαν χρωμαί εἰκὸς ἐστὶν ἐχειν αὐτῶν ἢτις γὰρ νῦν ἐν τῷ αἰσχυνθῆναι διάθεσις τῶν περὶ τὸ σῶμα ἐγένετο, καὶ κατὰ φυσικὴν σύστασιν ἡ αὐτὴ γένοιτ' ἂν, ὡςτε φύσει καὶ τὴν χρωμαν ὀμοίαν γίγνεσθαι. δόσα μὲν οὖν τῶν τοιούτων συμπτωμάτων ἀπὸ τινῶν παθῶν δυσκινήτων καὶ παραμονίμων τὴν ἀρχὴν εἴληφε, παθητικαὶ ποιότητες λέγονται. εἰτε γὰρ ἐν τῇ κατὰ φύσιν συστάσει ωχρότησ ἡ μελανία γεγένηται, ποιότητες λέγονται (ποιοὶ γὰρ κατὰ ταύτας λεγόμεθα), εἰτε διὰ νόσον μακρὰν ἡ διὰ καθία τὸ αὐτὸ τοῦτο συμβεβηκέν ωχρότησ ἡ μελανία, καὶ μὴ ῥάδιως ἀποκαθίσταται ἢ καὶ διὰ βίον παραμένουσι, ποιότητες καὶ αὐταὶ λέγονται. ὀμοίως γὰρ ποιοὶ κατὰ ταύτας λεγόμεθα.

"Οσα δὲ ἀπὸ ῥάδιως διαλυμένων καὶ ταχὺ ἀποκαθισταμένων γίνεται, πάθη λέγεται, ποιότητες δὲ οὐ· οὐ γὰρ λέγονται ποιοὶ τινες κατὰ ταύτας.
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 ἐρυθρίας λέγεται, οὔτε ὁ ωχριῶν διὰ τὸ φοβηθῆναι ωχρίας, ἀλλὰ μᾶλλον πεποιθέναι τι. Ὁστε πάθη μὲν τὰ τοιαῦτα λέγεται, ποιότητες δὲ οὐ.

'Ομοίως δὲ τούτοις καὶ κατὰ τὴν ψυχὴν πα-
θητικαί ποιότητες καὶ πάθη λέγεται. ὁσα γὰρ ἐν τῇ γενέσει εὐθὺς ἀπὸ τινῶν παθῶν δυσκοινήσων γεγένηται, ποιότητες λέγονται, οἶον ἢ τε μανική

9b ἐκστάσις καὶ ἡ ὀργὴ καὶ τὰ τοιαῦτα. ποιοὶ γὰρ κατὰ ταύτας λέγονται, ὀργῖλοι τε καὶ μανικοί. ὁμοίως δὲ καὶ ὁσα ἐκστάσεις μὴ φυσικαί, ἀλλ' ἀπὸ τινῶν ἀλλῶν συμπτωμάτων γεγένηται δυσαπ.

10 ἀλλακτοὶ ἢ καὶ ὅλως ἁκόμητοι, ποιότητες καὶ τὰ τοιαῦτα. ποιοὶ γὰρ κατὰ ταύτας λέγονται. Ὁσα δὲ ἀπὸ ταχὺ ἀποκαθισταμένων γίνεται, πάθη λέγεται, οἶον εἰ λυπούμενος τις ὀργιλώτερος ἐστιν. οὐδὲ γὰρ λέγεται ὀργίλος ὁ ἐν τῷ τοιοῦτῳ πάθει ὀργιλώτερος ὃν, ἀλλὰ μᾶλλον πεποιθέναι τι.

10 Ὁστε πάθη μὲν λέγεται τὰ τοιαῦτα, ποιότητες δ' οὐ.

Τέταρτον δὲ γείνος ποιότητος σχῆμα τε καὶ ἡ περὶ ἐκαστὸν ὑπάρχουσα μορφή, ἐτὶ δὲ πρὸς τούτοις εὐθύτης καὶ καμπυλότης, καὶ εἰ τι τούτοις ὁμοιὸν ἐστιν. καθ' ἐκαστὸν γὰρ τούτων ποιῶν τι

15 λέγεται: τῷ γὰρ τρίγωνον ἡ τετράγωνον εἶναι ποιῶν τι λέγεται, καὶ τῷ εὐθὺ ἡ καμπύλων. καὶ κατὰ τὴν μορφὴν δὲ ἐκαστὸν ποιῶν τι λέγεται. τὸ δὲ μανὸν καὶ τὸ πυκνὸν καὶ τὸ τραχὺ καὶ τὸ

1 τὸ Β.
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
10 λείον δόξειε μὲν ἂν ποιόν τι σημαίνειν, ἐσοκε δὲ ἄλλοτρια τὰ τοιαῦτα εἶναι τῆς περὶ τὸ ποιόν
20 διαιρέσεως: θέσιν γὰρ μᾶλλον τινα φαίνεται τῶν μορίων ἐκάτερον δηλοῦν. πυκνὸν μὲν γὰρ τῷ τὰ μόρια σύνεγγυς εἶναι ἄλληλοις, μανὸν δὲ τῷ διεστάναι ἀπ’ ἄλληλων· καὶ λείον μὲν τῷ ἐπ’ εὐθείας πως τὰ μόρια κείσθαι, τραχύ δὲ τῷ τὸ μὲν ὑπερέχειν τὸ δὲ ἐλλείπειν.
25 Ἡσυς μὲν οὖν καὶ ἄλλος ἂν τις φανεῖτι τρόπος ποιότητος, ἄλλ’ οἱ γε μάλιστα λεγόμενοι σχεδὸν οὔτοι εἰσίν.

Ποιότητες μὲν οὖν εἰσίν αἱ εἰρημέναι, ποιὰ δὲ τὰ κατὰ ταύτα παρωνύμως λεγόμενα ἡ ὁπωσοῦν
30 ἄλλως ἀπ’ αὐτῶν. ἐπὶ μὲν οὖν τῶν πλείστων καὶ σχεδὸν ἐπὶ πάντων παρωνύμως λέγεται, οἷον ἀπὸ τῆς λευκότητος λευκός καὶ ἀπὸ τῆς γραμματικῆς γραμματικός καὶ ἀπὸ τῆς δικαιοσύνης δίκαιος, ὡσαύτως δὲ καὶ ἐπὶ τῶν ἄλλων.

'Επ’ ἐνίων δὲ διὰ τὸ μὴ κείσθαι ταῖς ποιότησιν ὁνόματα οὖν ἐνδέχεται παρωνύμως ἀπ’ αὐτῶν
35 λέγεσθαι οἷον δρομικὸς ἡ πυκτικός ὁ κατὰ δύναμιν
10 φυσικὴν λεγόμενον ἀπ’ οὐδεμιᾶς ποιότητος παρωνύμως λέγεται· οὐ γὰρ κεῖται ὁνόματα ταῖς δυνάμει καθ’ ἃς οὕτοι ποιοὶ λέγονται, ὡσπερ ταῖς ἐπιστήμαις καθ’ ἃς πυκτικὸς ἡ παλαιστρικὸς κατὰ διάθεσιν λέγονται· πυκτικὴ γὰρ λέγεται ἐπιστήμη
5 καὶ παλαιστρικῆς, ποιοὶ δ’ ἀπὸ τούτων παρωνύμως οἱ διακείμενοι λέγονται. ἐνίοτε δὲ καὶ ὁνόματος κειμένου οὐ λέγεται παρωνύμως τὸ κατ’ αὐτὴν ποιόν λεγόμενον, οἷον ἀπὸ τῆς ἁρετῆς 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
δαιος' τω γαρ ἀρετην ἔχειν σπουδαιος λέγεται, ἀλλ' οὖν παρωνύμως ἀπὸ της ἀρετῆς. οὐκ ἐπὶ πολλῶν
10 δὲ τὸ τοιοῦτον ἔστιν.

Ποιὰ τοίνυν λέγεται τὰ παρωνύμως ἀπὸ τῶν εἰρημένων ποιοτήτων λεγόμενα ἡ ὀπωσοῦν ἅλλως ἀπ' αὐτῶν.

Ὑπάρχει δὲ καὶ ἐναντιότης κατὰ τὸ ποιόν, οἷον δικαιοσύνη ἀδικία ἐναντίον καὶ λευκότης μελανία
15 καὶ τάλλα δὲ ὠσαύτως, καὶ τὰ κατ' αὐτὰς ποια λεγόμενα, οἷον τὸ ἀδικον τῷ δικαίῳ καὶ τὸ λευκὸν
10 τῷ μέλαν. οὐκ ἐπὶ πάντων δὲ τὸ τοιοῦτο: τῷ γαρ πυρρῷ ἡ ὄχρῳ ἡ ταῖς τοιαύταις χροιάις οὐδεν ἐναντίον ποιοίς οὕσιν.

"Επὶ δὲ, ἐὰν τῶν ἐναντίων βάτερον ἢ ποιόν, καὶ
10 τὸ λοιπὸν ἔσται ποιόν. τοῦτο δὲ δῆλον προ-
20 χειριζόμενω τὰς ἅλλας κατηγορίας, οἷον εἰ ἐστιν
ἡ δικαιοσύνη τῆ ἀδικία ἐναντίον, ποιόν δὲ ἡ
25 δικαιοσύνη, ποιόν ἀρα καὶ ἡ ἀδικία: οὐδεμία γαρ
τῶν ἅλλων κατηγοριῶν ἐφαρμοσθεί τῆ ἀδικία:
οὔτε γαρ τὸ ποσόν οὔτε τὸ πρῶτο τούτο οὔθ' οἷος τί τῶν τοιούτων οὐδεν, ἀλλ' ἡ ποιόν. ὡσ-
25 αὐτώς δὲ καὶ ἐπὶ τῶν ἅλλων τῶν κατὰ τὸ ποιόν
ἐναντίων.

Ἐπιδέχεται δὲ τὸ μᾶλλον καὶ τὸ ἴττον τὰ ποιά.
λευκὸν γαρ μᾶλλον καὶ ἴττον ἐτέρου ἐτέρου
λέγεται, καὶ δικαίον ἐτέρου ἐτέρου μᾶλλον. καὶ
αὐτὸ δὲ ἐπίδοσιν λαμβάνει: λευκὸν γαρ ὅν ἐτι
ἐνδέχεται λευκότερον γενέσθαι. οὐ πάντα δὲ,
30 ἅλλα τὰ πλείοντα. δικαιοσύνη γὰρ δικαιοσύνης εἰ
λέγεται μᾶλλον καὶ ἴττον, ἀπορήσειν ἀν τις:
ὅμοιος δὲ καὶ ἐπὶ τῶν ἅλλων διαθέσεων. ἐνοῖ
γαρ διαμφισβητοῦσι περὶ τῶν τοιούτων: δικαίο-
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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 ἀλλὰ μὲν γὰρ δικαιοσύνης οὐ πάντως φασὶ δεῖν λέγεσθαι μᾶλλον καὶ ἤττον, οὐδὲ ὑγίειαν ὑγιείας, καὶ ἤττον μεῖντοι ἐχεῖν ἑτέρου ἑτέρου ὑγίειαν, καὶ 
11 δικαιοσύνην ἑτέρου ἑτέρου, ὑσαύτως δὲ καὶ γραμματικὴν καὶ τὰς ἀλλὰς διαθέσεις. ἀλλ’ οὐν τὰ γε κατὰ ταύτας λεγόμενα ἀναφορητῶς ἐπιδέχεται τὸ μᾶλλον καὶ τὸ ἤττον γραμματικῶτερος γὰρ ἑτέρου ἑτέρου λέγεται καὶ ὑγιεινότερος καὶ 
5 δικαιότερος, καὶ ἐπὶ τῶν ἄλλων ὑσαύτως. 
Τρίγωνον δὲ καὶ τετράγωνον οὐ δοκεῖ τὸ μᾶλλον ἐπιδέχεσθαι, οὐδὲ τῶν ἄλλων σχημάτων οophysical. τὰ μὲν γὰρ ἐπιδεχόμενα τῶν τοῦ τριγώνου λόγων ἢ τῶν τοῦ κύκλου πάνθ’ ὀμοίως τρίγωνα ἢ κύκλοι εἰσὶ, τῶν δὲ μὴ ἐπιδεχομένων οὐδὲν μᾶλλον ἑτέρον 
10 ἑτέρου ρηθήσεται: οὐδὲν γὰρ μᾶλλον τὸ τετράγωνον τοῦ ἑτερομήκους κύκλος ἑστίν: οὐδέτερον γὰρ ἑπιδέχεται τὸν τοῦ κύκλου λόγον. ἀπλῶς δέ, ἐὰν μὴ ἐπιδέχηται ἀμφότερα τῶν τοῦ προκειμένου λόγων, οὐ ρηθήσεται τὸ ἑτέρου μᾶλλον. οὐ πάντα οὖν τὰ ποιὰ ἐπιδέχεται τὸ μᾶλλον καὶ τὸ ἤττον. 
15 Τῶν μὲν οὖν εἰρημένων οὐδὲν ἰδιον ποιότητος, ὀμοία δὲ καὶ ἀνόμοια κατὰ μόνας τὰς ποιότητας λέγεται: ὀμοίων γὰρ ἑτέρου ἑτέρῳ οὐκ ἐστὶν κατ’ ἄλλο οὐδὲν ἢ καθ’ ὅ ποιῶν ἐστὶν. ὥστε ἰδιον ἂν εἰς τῆς ποιότητος τὸ ὀμοίον καὶ ἀνόμοιον λέγεσθαι κατ’ αὐτὴν. 
20 Οὐ δεῖ δὲ ταράττεσθαι, μὴ τις ἡμᾶς φήσῃ ὑπὲρ ποιότητος τὴν πρόθεσιν ποιησαμένους πολλὰ τῶν πρὸς τι συγκαταριθμεῖσθαι: τὰς γὰρ ἔξεις καὶ διαθέσεις τῶν πρὸς τι εἰναι ἑλέγομεν. σχεδὸν γὰρ ἐπὶ πάντων τῶν τοιούτων τὰ γένη πρὸς τι λέγεται, 76
selves, they contend, are not subject to such variations, but people in varying degrees are possessed of health, justice and so on. The same with grammatical 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 dispositions we admitted to be relative terms. Now, at least in most cases, it happens that the genera,
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11 ἂ τῶν δὲ καθ' ἐκαστα οὐδέν. ἣ μὲν γὰρ ἐπιστήμη, γένος οὖσα, αὐτὸ ὅπερ ἐστὶν ἐτέρου λέγεται (τινὸς ἐπιστήμη λέγεται), τῶν δὲ καθ' ἐκαστα οὐδέν αὐτὸ ὅπερ ἐστὶν ἐτέρου λέγεται, οἷον ἡ γραμματικὴ οὐ λέγεται τινὸς γραμματικὴ οὖδ' ἡ μουσικὴ τινὸς μουσικῆ. ἀλλ' εἰ ἀρα, κατὰ τὸ γένος καὶ αὐταὶ τῶν πρὸς τι λέγονται, οἷον ἡ γραμματικὴ λέγεται τινὸς ἐπιστήμη, οὐ τινὸς γραμματικῆ, καὶ ἡ μουσικὴ τινὸς ἐπιστήμη λέγεται, οὐ τινὸς μουσικῆ.

"Ὡςτε αἱ καθ' ἐκαστα οὐκ εἰσὶ τῶν πρὸς τι. λεγόμεθα δὲ ποιοὶ ταῖς καθ' ἐκαστα ταύτας γὰρ καὶ ἔχομεν ἐπιστήμους γὰρ λεγόμεθα τῷ ἐχειν τῶν καθ' ἐκαστα ἐπιστήμων τινὰ. ὡςτε αὐταὶ ἄν καὶ ποιότητες εἶσαν, αἱ καθ' ἐκαστα, καθ' ἂς ποτε καὶ ποιοὶ λεγόμεθα· αὐταὶ δὲ οὐκ εἰσὶ τῶν πρὸς τι. ἔτι εἰ τυγχάνοι τὸ αὐτὸ πρὸς τι καὶ ποιον ὃν, οὐδὲν ἀτοποῦ ἐν ἀμφοτέρους τοῖς γένεσιν αὐτὸ καταριθμεῖσθαι.

11 b IX. Ἐπιδεξεῖται δὲ καὶ τὸ ποιεῖν καὶ τὸ πάσχειν ἐναντιότητα καὶ τὸ μᾶλλον καὶ τὸ ἔττον· τὸ γὰρ θερμαίνων τῷ ψάχειν ἐναντίον καὶ τὸ θερμαίνεσθαι τῷ ψάχεσθαι καὶ τὸ ἢδεσθαι τῷ λυπεῖσθαι, ὡςτε ἐπιδεξεῖται ἐναντιότητα. καὶ τὸ μᾶλλον δὲ καὶ ἔττον· θερμαίνειν γὰρ μᾶλλον καὶ ἔττον ἐστὶ, καὶ θερμαίνεσθαι μᾶλλον καὶ ἔττον. ἐπιδεξεῖται οὖν τὸ μᾶλλον καὶ τὸ ἔττον τὸ ποιεῖν καὶ τὸ πάσχειν.

Ὑπέρ μὲν οὖν τούτων τοσαῦτα λέγεται. εἰρήται δὲ καὶ ὑπὲρ τοῦ κείσθαι ἐν τοῖς πρὸς τι, ὅτι
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
The chapters that follow are commonly regarded by scholars as spurious.

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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.\textsuperscript{a}

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
πρός τι, αυτὰ ἀπέρ ἐστίν ἔτέρων λέγεται ἡ ὀπωσ-
δήποτε πρὸς ἄλληλα λέγεται.

55 Τά δὲ ώς τά ἐναιτία, αυτὰ μὲν ἀπέρ
ἐστὶν οὐδαμῶς πρὸς ἄλληλα λέγεται, ἐναιτία
μέντοι ἄλληλων λέγεται· οὔτε γὰρ τὸ ἀγαθὸν τοῦ
κακοῦ λέγεται ἀγαθὸν, ἄλλ' ἐναιτίων, οὔτε τὸ
λευκὸν τοῦ μέλανος λευκὸν, ἄλλ' ἐναιτίων. ὡστε
dιαφέρουσιν αὐταί αἱ ἀντιδέσεις ἄλληλων. ὡσα δὲ

12 ὑπὸ τῶν ἐναιτίων τοιαῦτα ἐστίν ὡστε ἐν ὀις πέφυκε
γίνεσθαι ἡ ὧν κατηγορεῖται ἀναγκαῖον αὐτῶν
θάτερον ὑπάρχειν, τούτων οὐδέν ἐστὶν ἀνὰ μέσον.
ὅν δὲ γε μὴ ἀναγκαῖον θάτερον ὑπάρχειν, τούτων
ἔστι τι ἀνὰ μέσον πάντως, οἶον νόσος καὶ ὑγίεια

5 ἐν σώματι ζύῳ πέφυκε γίνεσθαι, καὶ ἀναγκαῖον
γε θάτερον ὑπάρχειν τῷ τοῦ ζύῳ σώματι, ἡ
νόσον ἡ ὑγίειαν. καὶ περιττὸν δὲ καὶ ἄρτιων
ἀρίθμοι κατηγορεῖται, καὶ ἀναγκαῖον γε θάτερον
tῷ ἀρίθμῳ ὑπάρχειν, ἡ περιττὸν ἡ ἄρτιοι. καὶ
οὐκ ἐστὶ γε τούτων οὐδέν ἀνὰ μέσον, οὔτε νόσον

10 καὶ ὑγίειας οὔτε περιττοῦ καὶ ἄρτιοι. ὅν δὲ γε
μὴ ἀναγκαῖον θάτερον ὑπάρχειν, τούτων ἐστὶ τι
ἀνὰ μέσον, οἶον μέλαν καὶ λευκὸν ἐν σώματι
πέφυκε γίνεσθαι, καὶ οὐκ ἀναγκαῖον γε θάτερον
αὐτῶν ὑπάρχειν τῷ σώματι· οὐ γὰρ πάν ἦτοι
λευκὸν ἢ μέλαν ἐστίν. καὶ φαύλον δὲ καὶ σποудαίον

15 κατηγορεῖται μὲν καὶ κατ' ἀνθρώπου καὶ κατὰ
ἄλλων πολλῶν, οὐκ ἀναγκαῖον δὲ θάτερον αὐτῶν
ὑπάρχειν ἑκείνους ὥν ἂν κατηγορηται· οὐ γὰρ
πάντα ήτοι φαύλα ἡ σποудαίᾳ ἐστιν. καὶ ἐστὶ
γε 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 correlatives 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
μέλανος τὸ φαιόν καὶ τὸ ώχρον καὶ ὅσα ἄλλα
20 χρώματα, τοῦ δὲ φαύλου καὶ σπουδαίου τὸ οὔτε
φαύλον οὔτε σπουδαίον. ἐπὶ εἰνάν μὲν οὖν ὅνο-
ματα κεῖται τοῖς ἀνὰ μέσον, οἷον λευκοῦ καὶ
μέλανος τὸ φαιόν καὶ τὸ ώχρον καὶ ὅσα ἄλλα
χρώματα· ἐπὶ τοῖς δὲ ὅνοματι μὲν οὖν εὐπορον
τὸ ἄνα μέσον ἀποδοῦναι, τῇ δ' ἐκατέρου τῶν
ἀκρων ἀποφάσει τὸ ἀνὰ μέσον ὀρίζεται, οἷον τὸ
25 οὔτε ἀγαθὸν οὔτε κακὸν καὶ οὔτε δίκαιον οὔτε
ἀδικον.

Στέρησις δὲ καὶ ἔξεις λέγεται μὲν περὶ ταὐτῶν
τι, οἷον ἡ ὁψις καὶ ἡ τυφλότης περὶ ὀφθαλμῶν·
καθόλου δὲ εἰπεῖν, ἐν ω δὴ ἔξεις πέφυκε γίνεσθαι,
περὶ τούτο λέγεται ἐκατέρου αὐτῶν. ἐστερηθοῦσθαι
δὲ τότε λέγομεν ἐκαστον τῶν τῆς ἔξεως δεκτικῶν,
30 όταν ἐν ω πέφυκεν ὑπάρχειν καὶ οτὲ πέφυκεν
ἔχειν μηδαμῶς ὑπάρχῃ. νωδὸν τε γὰρ λέγομεν οὐ
τὸ μὴ ἔχον ὀδόντασ, καὶ τυφλὸν οὐ τὸ μὴ ἔχον
ὁψιν, ἀλλὰ τὸ μὴ ἔχον οτὲ πέφυκεν ἔχειν· τινὰ
γὰρ ἐκ γενετῆς οὔτε ὁψιν ἔχει οὔτε ὀδόντας, ἀλλ' οὐ
λέγεται οὔτε νωδὰ οὔτε τυφλά.

Τὸ δὲ ἐστερηθόθαι καὶ τὸ τὴν ἔξειν ἔχειν οὐκ ἔστι
στέρησις καὶ ἔξεις. ἔξεις μὲν γὰρ ἔστιν ἡ ὁψις,
στέρησις δὲ ἡ τυφλότης· τὸ δὲ ἔχειν τὴν ὁψιν οὐκ
ἔστιν ὁψις, οὐδὲ τὸ τυφλὸν εἶναι τυφλότης.
στέρησις γὰρ τὸς ἡ τυφλότης ἔστιν, τὸ δὲ τυφλὸν
eἶναι ἐστερηθοῦσθαι, οὗ στέρησις ἔστιν. ἐτι εἰ ὃν ἡ

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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,
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tυφλότης ταύτων τῷ τυφλῷν εἶναι, κατηγορεῖτο ἂν ἀμφότερα κατὰ τοῦ αὐτοῦ· ἄλλα τυφλὸς μὲν
12 ἔλεγεται ὁ ἀνθρωπος, τυφλότης δὲ οὐδαμῶς λέγεται ὁ ἀνθρωπος.

Ἀντικείσθαι δὲ καὶ ταύτα δοκεῖ, τὸ ἐστερήσθαι καὶ τὸ τὴν ἐξίν ἔχειν, ὡς στέρησι καὶ ἐξίς· ὁ γὰρ τρόπος τῆς ἀντιθέσεως ὁ αὐτὸς· ὡς γὰρ ἡ τυφλότης τῇ ὀψει ἀντίκειται, οὕτω καὶ τὸ τυφλὸν εἶναι τῷ ὁμιλοῦν ἔχειν ἀντίκειται.

Οὐκ ἦστι δὲ 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 ἦστι λόγος. ἔλεγεται δὲ καὶ ταύτα ἀντικείσθαι ἄλληλοις ὡς κατάφασις καὶ ἀπόφασις· καὶ γὰρ ἐπὶ τούτων ὁ τρόπος τῆς ἀντιθέσεως ὁ αὐτὸς· ὡς γὰρ ποτε ἡ κατάφασις πρὸς τὴν ἀπόφασιν ἀντίκειται, οἶον τὸ κάθηται τῷ οὐ κάθηται,

15 οὕτω καὶ τὸ ὑφ' ἐκάτερον πράγμα ἀντίκειται, τὸ καθήσθαι τῷ μὴ καθήσθαι.

"Ὅτι δὲ ἡ στέρησις καὶ ἡ ἐξίς οὐκ ἀντίκειται ὡς τὰ πρὸς τι, φανερῶν· οὐ γὰρ λέγεται αὐτῷ ὅπερ ἐστὶ τοῦ ἀντικειμένου. ἡ γὰρ ὀψις οὐκ ἦστι τυφλότητος ὀψις, οὐδ' ἄλλως οὐδαμῶς πρὸς αὐτὸ λέγεται. ὡσαύτως δὲ οὐδὲ ἡ τυφλότης λέγοιτ' ἂν τυφλότης ὁμιλοῦσιν, ἄλλα στέρησις μὲν ὀψεως ἡ τυφλότης λέγεται, τυφλότης δὲ ὀψεως οὐ λέγεται. ἐτὶ τὰ πρὸς τι πάντα πρὸς ἀντιστρέφοντα λέγεται, ὡστε καὶ ἡ τυφλότης εἰπερ ἂν τῶν πρὸς τι, ἀντέστρεφεν

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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,
άν κάκεινο πρὸς ὁ λέγεται. ἀλλ' οὐκ ἀντιστρέφει
οὐ γὰρ λέγεται ἡ ὁψις τυφλότητος ὁψις.

"Οτι δ' οὐδ' ὡς τὰ ἑναντία ἀντίκειται τὰ κατὰ
στέρησιν καὶ ἔξω λεγόμενα, ἐκ τῶν δήλον. τῶν
μὲν γὰρ ἑναντίων, ὥν μηδὲν ἐστίν ἀνὰ μέσον,
ἀνάγκαιον, ἐν ὧν πέφυκε γίνεσθαι ἡ ὁν κατ-
ηγορεῖται, θάτερον αὐτῶν ὑπάρχειν ἀεὶ τοῦτων
γὰρ οὐδὲν ἢν ἀνὰ μέσον, ὥν θάτερον ἢν ἀνάγκαιον
τῷ δεκτικῷ ὑπάρχειν, οἶον ἐπὶ νόσου καὶ ὑγείας
καὶ περιττοῦ καὶ ἅρτιοῦ. ὥν δὲ ἐστὶ τι ἀνὰ μέσον,
οὐδέποτε ἀνάγκη παντὶ ὑπάρχειν θάτερον. οὕτε
γὰρ λευκὸν ἢ ῶλαν ἀνάγκη πᾶν εἶναι τὸ δεκτικὸν,
οὕτε θερμὸν οὐτε ψυχρὸν· τοῦτων γὰρ ἀνὰ μέσον
τι οὐδὲν κωλύει ὑπάρχειν. ἔτι δὲ καὶ τοῦτων ἢρ
τι ἀνὰ μέσον, ὥν μὴ ἀνάγκαιον θάτερον ὑπάρχειν
ἡν τῷ δεκτικῷ, εἰ μὴ οἷς φύσει τὸ ἐν ὑπάρχει,
οἶον τῷ πυρὶ τὸ θερμῷ εἶναι καὶ τῇ χύων τῷ
λευκῇ. ἔτι δὲ τούτων ἀφωρισμένως ἀνάγκαιον
θάτερον ὑπάρχειν, καὶ οὐχ ὁπότερον ἑτυχεῖν. οὐ
γὰρ ἐνδέχεται τὸ πῦρ ψυχρὸν εἶναι οὐδὲ τὴν χύων
μέλαιναν. ὥστε παντὶ μὲν οὐκ ἀνάγκη τῷ δεκτικῷ
θάτερον αὐτῶν ὑπάρχειν, ἀλλὰ μόνον οἷς φύσει τὸ

12 b

13 a
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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,
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13 a  ἐν ὑπάρχει, καὶ τούτοις ἀφωρισμένως τὸ ἐν καὶ
οὐχ ὡστέρον ἔτυχεν.

'Επὶ δὲ τῆς στερήσεως καὶ τῆς ἐξεως οὐδέτερον τῶν εἰρημένων ἀλήθες: οὔτε γὰρ ἀεὶ τῶν δεκτικῶν ἀναγκαῖον θάτερον αὐτῶν ὑπάρχειν: τὸ γὰρ μήπως πεφυκὸς ὁ σὺν ἔχειν οὔτε τυφλὸν οὔτε ὁ σὺν ἔχον λέγεται, ὥστε οὐκ ἂν εἰπ ταῦτα τῶν τοιούτων ἐναντίων σὺν οὐδέν ἔστιν ἂνά μέσου. ἀλλ' οὐδὲν τί ἐστιν ἂνά μέσου ἀναγκαῖον γὰρ ποτε παντὶ τῶν δεκτικῶν θάτερον αὐτῶν ὑπάρχειν: ὅταν γὰρ ἤδη πεφυκὸς ᾧ ὁ σὺν ἔχειν, τότε ἡ τυφλὸν ἢ ὁ σὺν ἔχον ρήθησεται, καὶ τούτων οὐκ ἀφωρισμένως θάτερον, ἀλλ' ὡστέρον ἔτυχεν: οὔ γὰρ ἀναγκαῖον ἡ τυφλὸν ἢ ἔχον ὁ σὺν εἰναι, ἀλλ' ὡστέρον ἔτυχεν. ἐπὶ δὲ τῶν ἐναντίων, ὅτι ἐστὶ τί ἂνά μέσου, οὐ ποτε ἀναγκαῖον ἡ παντὶ θάτερον ὑπάρχειν, ἀλλ' τις, καὶ τούτοις ἀφωρισμένως τὸ ἐν. ὥστε δὴ δὴν ὡστι καὶ ὡστέρον τῶν τρόπων ὡς τὰ ἐναντία ἀντίκειται τὰ κατὰ στέρησιν καὶ ἐξίν ἀντικείμενα.

'Επὶ ἐπὶ μὲν τῶν ἐναντίων, ὑπάρχοντο τοῦ δεκτικοῦ, δυνατὸν εἰς ἀλλήλας μεταβολὴν γίνεσθαι, εἰ μὴ τινὶ φύσει τὸ ἐν ὑπάρχει, οἷον τῷ πυρὶ τὸ θερμὸν εἶναι· καὶ γὰρ τὸ ὑγιαῖον δυνατὸν νοσήσαι καὶ τὸ λευκὸν μέλαν γενέσθαι καὶ τὸ ψυχρὸν θερμὸν, καὶ ἐκ σπουδαίου γε φαύλον καὶ ἐκ φαύλου σπουδαίον δυνατὸν γενέσθαι. οἱ γὰρ φαύλοι εἰς βελτίως διατριβῆς ἀγόμενος καὶ λόγους κἀ

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,
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μικρὸν γε τι ἐπιδοῆς εἰς τὸ βελτίων εἶναι. ἐὰν δὲ ἀπαξ κἀν μικράν ἐπίδοσιν λάβῃ, φανερὸν ὅτι ἡ τελέως ἄν μεταβάλοι ἡ πάνυ πολλὴν ἐπίδοσιν λάβει. ἀδεὶ γὰρ εὐκυκνητότερος πρὸς ἀρετὴν γίνεται, κἂν ἥτινοιν ἐπίδοσιν εἰληφὼς εἰς ἀρχῆς ἢ, ὡστε καὶ πλεῖον εἰκὸς ἐπίδοσιν αὐτὸν λαμβάνειν. καὶ τοῦτο ἀδεὶ γινόμενον τελείως εἰς τὴν ἐναντίαιν ἐξιν ἀποκαθίστησιν, εἶν ἐκεῖν ἐξειρημέντα. εἰπὶ δὲ γε τῆς ἐξειρημένης καὶ τῆς στερήσεως ἄδυναν εἰς ἀλληλα μεταβολὴν γενέσθαι. ἀπὸ μὲν γὰρ τῆς ἐξειρημένης ἐπὶ τῆς στερήσεως ἐπὶ τῆς ἐξειρημένης ἄδυναν. οὔτε γὰρ τυφλὸς γενόμενος τὶς πάλιν ἀνέβλεψεν, οὔτε φαλακρὸς ὃν πάλιν κομήτης ἐγένετο, οὔτε νωδὸς ὃν ὀδύνατας ἐφυσεν.

"Ὅσα δὲ ἦσαν καταφάσεις καὶ ἀπόφασις ἀντίκειται,

13 b φανερὸν ὅτι κατ' οὐδένα τῶν εἰρημένων τρόπων ἀντίκειται. ἐπὶ γὰρ μόνων τούτων ἂναγκαίον ἀδεὶ τὸ μὲν ἀληθῆς τὸ δὲ ψεῦδος αὐτῶν εἶναι. οὔτε γὰρ ἐπὶ τῶν ἐναντίων ἂναγκαίον ἀδεὶ τὸν ἄλλου ἀληθῆς εἶναι βάρεων Δὲ ψευδός, οὔτε ἐπὶ τῶν πρὸς τι, οὔτε ἐπὶ τῆς ἐξειρήσεως καὶ τῆς στερήσεως. οἴον ἡ ὑγίεια καὶ ἡ νόσος ἐναντία, καὶ οὐδέτερον γε οὔτε ἀληθῆς οὔτε ψευδός ἐστιν. ὡσποῦ δὲ καὶ τὸ διπλάσιον καὶ τὸ ἡμισὺ ὡς τὰ πρὸς τι ἀντίκειται, καὶ οὐκ ἐστιν αὐτῶν οὐδέτερον οὔτε ἀληθῆς οὔτε ψευδός. οὔτε γε τα κατὰ στερήσει καὶ ἐξιν, οἴον ἡ ὀψις καὶ τὴν υφήλτης. ὅλως δὲ τῶν κατὰ μηδεμίαν συμπλοκὴν λεγομένων οὐδέν οὔτε ἀληθῆς οὔτε ψευδός ἐστιν. πάντα δὲ τὰ εἰρημένα ἀνευ συμπλοκῆς λέγεται.

Οὐ μὴν ἄλλα μάλιστα ἄν δόξεις τὸ τοιοῦτο συμ-

* See what was said in c. 4 upon uncombined words, truth and falsity.
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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-
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βαίνειν ἐπὶ τῶν κατὰ συμπλοκὴν ἐναντίων λεγο-μένων: τὸ γὰρ ὕγιαίνειν Σωκράτην τῷ νοσεῖν

Σωκράτην ἐναντίον ἑστίν. ἀλλ' οὐδ' ἐπὶ τούτων ἀναγκαῖον ἂεὶ θάτερον μὲν ἄληθὲς θάτερον δέ
ψεύδος εἶναι. ὅντος μὲν γὰρ Σωκράτους ἐσται τὸ
μὲν ἄληθὲς τὸ δὲ ψεύδος, μὴ ὅντος δὲ ἀμφότερα
ψευδή. οὔτε γὰρ τὸ νοσεῖν Σωκράτην οὔτε τὸ
ὕγιαίνειν ἑστίν ἄληθὲς αὐτοῦ μὴ ὅντος ὅλως τοῦ
Σωκράτους.

Ἐπὶ δὲ τῆς στερηθεσσας καὶ τῆς ἐξεως μὴ ὅντος
tε ὅλως οὐδέτερον ἄληθὲς, ὅντος τε οὐκ ἂεὶ
θάτερον ἄληθὲς θάτερον δὲ ψεύδος: τὸ γὰρ ὅπως
ἐχειν Σωκράτην τῷ τυφλὸν εἶναι Σωκράτην ἀντι-
κείται ώς στερηθεσσας καὶ ἐξις, καὶ ὅντος τε οὐκ
ἀναγκαῖον θάτερον ἄληθὲς εἶναι ἡ ψεύδος (ὅτε γὰρ
15 μήπω πέφυκεν ἐχειν, ἀμφότερα ψευδή). μὴ ὅντος
tε ὅλως τοῦ Σωκράτους, καὶ οὔτω ψευδή ἀμφό-
tερα, καὶ τὸ ὅπως ἐχειν καὶ τὸ τυφλὸν αὐτοῦ εἶναι.

Ἐπὶ δὲ γε τῆς καταφάσεως καὶ τῆς ἀποφάσεως
ἀεί, εάν τε ἢ εάν τε μὴ ἢ, τὸ ἑτερον ἐσται ψεύδος καὶ
tὸ ἑτερον ἄληθὲς. τὸ γὰρ νοσεῖν Σωκράτην
10 καὶ τὸ μὴ νοσεῖν Σωκράτην, ὅντος τε αὐτοῦ φανε-
ρον ὅτι τὸ ἑτερον αὐτῶν ἄληθὲς ἡ ψεύδος, καὶ μὴ
ὁντος δυσαίσθῃς: τὸ μὲν γὰρ νοσεῖν μὴ ὅντος ψεύδος,
tὸ δὲ μὴ νοσεῖν ἄληθὲς. ὡστε ἐπὶ μόνων τούτων
ιδιον ἄν εἰη τὸ ἂεὶ θάτερον αὐτῶν ἄληθὲς ἡ ψεύδος
15 εἶναι, δόσα ὡς κατάφασις καὶ ἀπόφασις ἀντίκειται.
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 εἰς ἀνάγκης ἀγαθῶν μὲν 
κακῶν· τοῦτο δὲ δῆλον τῇ καθ' ἐκαστὸν ἐπαγγελγῇ,
14 ὅσον ὑγιεία νόσος καὶ ἰδρεία δειλία, ὁμοίως δὲ 
καὶ ἐπὶ τῶν ἄλλων· κακῷ δὲ ὅτε μὲν ἀγαθὸν 
ἐναντίον, ὅτε δὲ κακὸν· τῇ γὰρ ἐνδεία κακῷ ὀντι
ἡ ὑπερβολὴ ἐναντίον κακῶν ὀν· ὁμοίως δὲ καὶ ἡ
μεσότης ἐναντία ἐκατέρω, οὕσα ἀγαθὸν. ἐπὶ
ὄλιγων δ' ἄν τὸ τοιοῦτον ἰδοὺ τις, ἐπὶ δὲ τῶν
πλείστων ἀεὶ τῷ κακῷ τὸ ἀγαθὸν ἐναντίον ἐστὶν.

Ἐτι ἐπὶ τῶν ἐναντίων οὐκ ἀναγκαίον, ἐὰν θάτερ
ρον ἦ, καὶ τὸ λοιπὸν εἴναι. ὑγιαινόντων μὲν γὰρ
ἀπάντων ὑγίεια μὲν ἐσται, νόσος δὲ οὐ· ὁμοίως
dὲ καὶ λευκῶν ὄντων ἀπάντων λευκότης μὲν ἐσται,
mελανία δὲ οὐ. ἔτι εἰ τὸ Σωκράτην ὑγιαίνειν τῷ
10 Σωκράτην νοσεῖν ἐναντίων ἐστὶ, μὴ ἐνδέχεται δὲ
ἀμα ἀμφότερα τῷ αὐτῷ ὑπάρχειν, οὐκ ἄν ἐν-
δέχοτο τοῦ ἐτέρου τῶν ἐναντίων ὄντος καὶ τὸ
λοιπὸν εἴναι· ὄντος γὰρ τοῦ Σωκράτην ὑγιαίνειν
οὐκ ἄν εἴη τὸ νοσεῖν Σωκράτην.

Δῆλον δὲ ὅτι καὶ περὶ ταύτων ἢ εἴδει ἢ γένει
15 πέφυκε γίνεσθαι τὰ ἐναντία. νόσος μὲν γὰρ καὶ
ὑγίεια εἰς σώματι ζωοῦ πέφυκε γίνεσθαι, λευκότης
dὲ καὶ μελανία ἀπλῶς εἰς σώματι, δικαιοσύνη δὲ
cαὶ ἄδικια εἰς ψυχῆ ἀνθρώπου.

20 Ἀνάγκη δὲ πάντα τὰ ἐναντία ἢ ἐν τῷ αὐτῷ γένει
eἴναι ἢ ἐν τοῖς ἐναντίοις γένεσιν, ἢ αὐτὰ γένη
eἴναι. λευκὸν μὲν γὰρ καὶ μέλαν ἐν τῷ αὐτῷ
γένει (χρώμα γὰρ αὐτῶν τὸ γένος), δικαιοσύνη δὲ
cαὶ ἄδικια ἐν τοῖς ἐναντίοις γένεσιν (τοῦ μὲν γὰρ
ἀρετῆ, τοῦ δὲ κακία τὸ γένος). ἀγαθὸν δὲ καὶ
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
κακόν οὐκ ἔστιν ἐν γένει ἄλλ', αὐτὰ τυγχάνει γένη
tινῶν ὄντα.

XII. Πρότερον ἐτέρου ἐτέρον λέγεται τετραχῶς,
πρῶτον μὲν καὶ κυριώτατα κατὰ χρόνον, καθ' ὁ
πρεσβύτερον ἐτέρον ἐτέρον καὶ παλαιότερον λέγε-
ται τῷ γὰρ τοῖν χρόνον πλείω εἶναι καὶ πρεσ-
bύτερον καὶ παλαιότερον λέγεται.

Δεύτερον δὲ τὸ μὴ ἀντιστρέφον κατὰ τὴν τοῦ
eἶναι ἀκολούθησιν, οἴον τὸ ἐν τῶν δύο πρότερον;
δυοὶ μὲν γὰρ ὄντων ἀκολουθεῖ εὐθὺς τὸ ἐν εἶναι,
ἐνὸς δὲ ὄντος οὐκ ἀναγκαίον δύο εἶναι, ὡστε οὐκ
ἀντιστρέφει ἀπὸ τοῦ εὖς ἡ ἀκολούθησις τοῦ εἶναι
tὸ λοιπὸν. πρότερον δὲ δοκεῖ τὸ τοιοῦτον εἶναι,
ἃφ' οὗ μὴ ἀντιστρέφει ἡ τοῦ εἶναι ἀκολούθησις.

Τρίτον δὲ κατὰ τινά τάξιν τὸ πρότερον λέγεται,
καθάπερ ἐπὶ τῶν ἑπιστημῶν καὶ τῶν λόγων. ἐν
tε γὰρ ταῖς ἀποδεικτικαῖς ἑπιστήμαι ὑπάρχει τὸ
πρότερον καὶ τὸ ύστερον τῇ τάξει (τὰ γὰρ στοιχεῖα
πρότερα τῶν διαγραμμάτων τῇ τάξει, καὶ ἐπὶ τῆς
γραμματικῆς τὰ στοιχεῖα πρότερα τῶν συλλαβῶν),
ἐπὶ τε τῶν λόγων ὁμοίως τὸ γὰρ προοίμιον τῆς
dιηγήσεως πρότερον τῇ τάξει ἐστὶν.

Εἰπ' παρὰ τὰ εἰρημένα τὸ βέλτιον καὶ τὸ τμιώ-
tερον πρότερον εἶναι τῇ φύσει δοκεῖ. εἰὼθασι δὲ
καὶ οἱ πολλοὶ τοὺς ἐντιμοτέρους καὶ μᾶλλον ἄγα-
pωμένους ὑπ' αὐτῶν προτέρους φάσκεων παρ' αὐτοῖς
εἶναι. ἐστὶ μὲν δὴ καὶ σχεδὸν ἀλλοτριώτατος τῶν
τρόπων οὕτως.

* ἡ γραμματικὴ, 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.
ΑΡΙΣΤΟΤΛΕ

10 Οἱ μὲν οὖν λεγόμενοι τρόποι τοῦ προτέρου σχεδὸν
tosōvtoί eίσων. δόξειε δ' ἀν παρὰ τοὺς εἰρημένους
καὶ ἔτερος εἶναι προτέρου τρόπος: τῶν γὰρ ἀντι-
στρεφόντων κατὰ τὴν τοῦ εἶναι ἀκολούθησιν τὸ
αίτιον ὀπωσοῦν θατέρῳ τοῦ εἶναι πρότερον εἰκὸτος
τῇ φύσει λέγοντ' ἂν. ὅτι δ' ἐστὶν τοιαῦτα,
δῆλον: τὸ γὰρ εἶναι ἀνθρωπον ἀντιστρέφει κατὰ
15 τὴν τοῦ εἶναι ἀκολούθησι πρὸς τὸν ἀληθὴ περὶ
αὐτοῦ λόγον. εἰ γὰρ ἐστὶν ἀνθρώπος, ἀληθῆς οὐ
λόγος ὃ λέγομεν ὅτι ἐστὶν ἀνθρώπος. καὶ ἀντι-
στρέφει γε: εἰ γὰρ ἀληθῆς οὐ λόγος ὃ λέγομεν ὅτι
ἐστὶν ἀνθρώπος, ἐστὶν ἀνθρώπος. ἐστι δὲ ὁ μὲν
ἀληθῆς λόγος οὐδαμῶς αἴτιος τοῦ εἶναι τὸ πράγμα,
20 τὸ μέντοι πράγμα φαίνεται πως αἴτιον τοῦ εἶναι
ἀληθῆ τὸν λόγον: τῷ γὰρ εἶναι τὸ πράγμα ἢ μὴ
ἀληθῆς οὐ λόγος ἢ ψευδῆς λέγεται. ὅστε κατὰ
πέντε τρόπους πρότερον ἔτερον ἔτερον λέγεται.
25 XIII. Ἀμα δὲ λέγεται ἀπλῶς μὲν καὶ κυριώ-
tata, ὅτι η γένεσις ἐστὶν ἐν τῷ αὐτῷ χρόνῳ:
οὐδέτερον γὰρ πρότερον οὐδὲ υπέρτερον ἐστὶν αὐτῶν.
ἀμα δὲ κατὰ τὸν χρόνον ταύτα λέγεται. φύσει δὲ
ἀμα, ὡσα ἀντιστρέφει μὲν κατὰ τὴν τοῦ εἶναι ἀκο-
λούθησιν, μηδαμῶς δὲ αἰτίων θατέρῳ θατέρῳ τοῦ
eἶναι ἐστὶν, οἷον ἐπὶ τοῦ διπλασίου καὶ τοῦ ἡμίσεως:
30 ἀντιστρέφει μὲν γὰρ ταύτα (διπλασίου γὰρ ὅτιος
ἐστὶν ἡμίον καὶ ἡμίσεος ὅτιος διπλασίων ἐστὶν),
οὐδέτερον δὲ οὐδέτερῳ αἴτιον τοῦ εἶναι ἐστὶν.
Καὶ τὰ ἐκ τοῦ αὐτοῦ δὲ γένους ἀντιδηρημένα
35 ἀλλήλους ἀμα τῇ φύσει λέγεται. ἀντιδηρηθῆσαι δὲ
λέγεται ἀλλήλους τὰ κατὰ τὴν αὐτὴν διαίρεσιν,
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
οἶνον τὸ πτηνὸν τῷ πεζῷ καὶ τῷ ἐνυδρῷ. ταῦτα γὰρ ἄλληλους ἀντιδηρήται ἐκ τοῦ αὐτοῦ γένους. τὸ γὰρ ζῶον διαιρεῖται εἰς ταῦτα, εἰς τὸ τὸ πτηνὸν καὶ τὸ πεζὸν καὶ τὸ ἐνυδρὸν, καὶ οὐδέν γε τούτων πρῶτον ἢ υπερὸν ἐστιν, ἀλλ' ἀμα τῇ φύσει τὰ 15 τοιαῦτα δοκεῖ εἶναι. διαιρεθεὶς δ' ἂν καὶ ἑκαστὸν τῶν τοιούτων εἰς εἴδη πάλιν, οἶνον τὸ πεζὸν καὶ τὸ πτηνὸν καὶ τὸ ἐνυδρὸν. ἔσται οὖν κάκεινα ἀμα τῇ φύσει, ὥσα ἐκ τοῦ αὐτοῦ γένους κατὰ τὴν 5 αὐτὴν διαίρεσιν ἐστιν. τὰ δὲ γένη τῶν εἰδῶν ἄεi πρώτηρα ὡς ἄνα τοιοστρέφει κατὰ τὴν τοῦ εἰναι ἀκολούθησιν, οἶνον ἐνυδρὸν μὲν ὅτι ἐστὶ ζῴων, ζῷου δὲ ὅτις οὐκ ἀνάγκη ἐνυδρὸν εἶναι.

Ἀμα οὖν τῇ φύσει λέγεται, ὥσα ἀντιστρέφει μὲν κατὰ τὴν τοῦ εἰναι ἀκολούθησιν, μηδαμῶς δὲ 10 αὐτίνον τὸ ἐτερον τῷ ἐτέρῳ τοῦ εἰναί ἐστι, καὶ τὰ ἐκ τοῦ αὐτοῦ γένους ἀντιδηρήμενα ἄλληλοις· ἀπλῶς δὲ ἀμα, ὡν ἢ γένεσις ἐν τῷ αὐτῷ χρόνῳ.

Χ. Κινήσεως δε ἐστὶν εἴδη ἐξ, γένεσις, φθορά, αὐξησις, μείωσις, ἀλλοίωσις, ἢ κατὰ τόπον μεταβολή.

Αἱ μὲν οὖν ἄλλαι κινήσεις φανερὸν ὅτι ἐτέραι ἄλληλων εἰσὶν· οὐ γὰρ ἐστὶν ἡ γένεσις φθορά οὐδὲ γε ἡ αὔξησις μείωσις οὐδὲ ἡ κατὰ τόπον μεταβολή, ὥσπερ δὲ καὶ αἱ ἄλλαι· ἐπὶ δὲ τῆς ἀλλοίωσεως ἔχει τινὰ ἀπορίαν, μὴ ποτὲ ἀναγκαῖον 20 ἢ τὸ ἄλλοιομενον κατὰ τινὰ τῶν λοιπῶν κινήσεων ἀλλοιούσθαι. τούτῳ δὲ οὔκ ἄληθες ἐστι· σχεδὸν γὰρ κατὰ πάντα τὰ πάθη ἢ τὰ πλείον ἀλλοιούσθαι συμβεβηκεν ἦμνον οὐδεμιὰς 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
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15 a κοινωνοῦσιν· οὔτε γὰρ αὐξεσθαι ἀναγκαῖον τὸ κατὰ πάθος κινούμενον οὔτε μειοῦσθαι, ὥσπερ δὲ καὶ 25 ἐπὶ τῶν ἄλλων, ὥσθ' ἐτέρα ἄν εἰπάρ τὰς ἄλλας κινήσεις ἡ ἀλλοίωσις· εἰ γὰρ ἦν ἡ αὐτή, ἐδει τὸ ἄλλοιούμενον εὐθὺς καὶ αὐξεσθαι ἡ μειοῦσθαι ἡ τυν· τῶν ἄλλων ἀκολουθεῖν κινήσεων· ἄλλ' οὐκ ἀνάγκη. ὥσπερ δὲ καὶ τὸ αὔξανόμενον ἡ τυν· ἄλλην κίνησιν κινούμενον ἄλλοιούσθαι ἐδει· ἄλλ' 30 ἐστὶ τυν· αὔξανόμενα· οὐκ ἄλλοιούθαι, οἷον τὸ τετράγωνον γνώμονος περιτεθεῖτο· ἡξῆται μὲν, ἄλλοιοτερον δὲ οὐδὲν γεγένται· ὡσπερ δὲ καὶ ἐπὶ τῶν ἄλλων τῶν τοιούτων· ὥσθ' ἐτερα ἂν εἰρήσαν αἱ κινήσεις ἄλληλων.

15 b 'Εστι δὲ ἀπλῶς μὲν κινήσει ἱρεμία ἐναντία, ταῖς δὲ καθ' ἕκαστα αἱ καθ' ἕκαστα, γενέσει μὲν φθορά, αὔξησει δὲ μείωσις, τῇ δὲ κατὰ τόπων μεταβολή ἡ κατὰ τόπων ἱρεμία. μάλιστα δ' ἔσοικεν ἀντίκεισθαι 5 ἡ πρὸς τὸν ἐναντίον τόπων μεταβολή, οἷον τῇ κάτωθεν ἡ ἄνω, τῇ δὲ ἄνωθεν ἡ κάτω· τῇ δὲ
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.
ΑΡΙΣΤΟΤΛΕ

λοιπὴ τῶν ἀποδοθεισῶν κινήσεων οὐ ῥάδιον ἀποδούναι τί ποτὲ ἐστὶν ἐναντίον, ἐοικε δὲ οὐδὲν εἰναι αὐτῇ ἐναντίον, εἰ μὴ τις καὶ ἐπὶ ταύτης τὴν κατὰ τὸ ποιοῦ ἥρεμιάν ἀντιτιθεί τῇ τὴν εἰς τὸ ἐναντίον τοῦ ποιοῦ μεταβολὴν, καθάπερ καὶ ἐπὶ τῆς κατὰ τόπον μεταβολῆς τὴν κατὰ τόπον ἥρεμιάν ἢ τὴν εἰς τὸν ἐναντίον τόπον μεταβολῆν. ἔστι γὰρ ἢ ἀλλοίωσις μεταβολῆ κατὰ τὸ ποιοῦ. ὥστε ἀντικείσεται τῇ κατὰ τὸ ποιοῦ κινήσει ἢ κατὰ τὸ ποιοῦ ἥρεμία ἢ ἢ εἰς τὸ ἐναντίον τοῦ ποιοῦ μεταβολῆ, ὅπως τὸ λευκὸν γίνεσθαι τῷ μέλαν γίνεσθαι: ἀλλοιοῦται γὰρ εἰς τὰ ἐναντία τοῦ ποιοῦ μεταβολῆς γινομένης.

XV. Τὸ δὲ ἔχειν κατὰ πλείωνας τρόπους λέγεται, ἢ γὰρ ὃς ἔχει καὶ διάθεσιν ἢ ἄλλην τινὰ ποιότητα. 20 λεγόμεθα γὰρ καὶ ἑπιστήμην τινὰ ἔχειν καὶ ἀρετὴν. ἢ ὡς ποσὸν, οἷον ὁ τυγχάνει τις ἔχων μέγεθος: λέγεται γὰρ τρίπτηχυ μέγεθος ἔχειν ἢ τετράπτηχυ. ἢ ὡς τὰ περὶ τὸ σῶμα, οἷον ἰμάτιον ἢ χιτώνα. ἢ ὡς ἐν μορίῳ, οἷον ἐν χειρὶ δακτύλιον. ἢ ὡς μέρος, οἷον χείρα ἢ πόδα. ἢ ὡς ἐν ἀγγείῳ, οἷον 25 ὁ μεδίμνος τοὺς πυροὺς ἢ τὸ κεράμιον τὸν οἶνον· οἰνοῦ γὰρ ἔχειν τὸ κεράμιον λέγεται, καὶ ὁ μεδίμνος πυροῦς· ταῦτα οὖν πάντα ἔχειν λέγεται ὡς ἐν ἀγγείῳ. ἢ ὡς κτῆμα· ἔχειν γὰρ οἰκίαν ἢ ἀγρὸν λεγόμεθα.

Λεγόμεθα δὲ καὶ γυναικὰ ἔχειν καὶ ἡ γυνὴ 80 ἄνδρα· ἐοικε δὲ ἀλλοτριώτατος ὁ νῦν ῥηθεῖσ τρόπος.
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 a' 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 σημαίνει· μεν ἢ ὅτι συνοικεῖ.

"Ἰσως δὲ ἂν καὶ ἄλλοι τινὲς φανεῖσαν τοῦ ἔχειν τρόποι· οἱ δὲ εἰσθότες λέγεσθαι σχεδὸν ἀπαντεῖς 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.
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 Ι. Πρῶτον δεῖ θεόθαι τι ὁνόμα καὶ τι ρῆμα, ἐπειτα τι ἕσται ἀπόφασις καὶ κατάφασις καὶ ἀπό-
φασις καὶ λόγος.

"Εστὶ μὲν οὖν τὰ ἐν τῇ φωνῇ τῶν ἐν τῇ ψυχῇ
ῥημάτων σύμβολα, καὶ τὰ γραφόμενα τῶν ἐν
τῇ φωνῇ. καὶ ὡσπερ οὐδὲ γράμματα πάσι τὰ
αὐτά, οὐδὲ φωναί αἱ αὐταί· ὃν μὲν ταῦτα
σημεῖα πρῶτως, ταῦτα πάσι παθήματα τῆς ψυχῆς,
καὶ ὃν ταῦτα ὁμοιώματα, πράγματα ἢ ἡδη ταῦτα.
περὶ μὲν οὖν τούτων εἰρηται ἐν τοῖς περὶ ψυχῆς:
ἀλλὰς γὰρ πραγματείας.

10 "Εστὶ δ’, ὡσπερ ἐν τῇ ψυχῇ ὅτε μὲν νόμημα ἄνευ
tοῦ ἀληθεύειν ἡ ψεύδεσθαι, ὀτὲ δε ἡδη ὡ ἀνάγκη
tούτων ὑπάρχειν θάτερον, οὕτω καὶ ἐν τῇ φωνῇ:
περὶ γὰρ σύνθεσιν καὶ διαίρεσιν ἑστὶ τὸ ψεῦδος

* 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, how-
ever, 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.'

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16 a καὶ τὸ ἀληθὲς. τὰ μὲν οὓς ὄνοματα αὐτὰ καὶ τὰ ρήματα ἐσθε τῷ ἀνευ συνθέσεως καὶ διαρέσεως
15 νομματι, οἷον τὸ ἀνθρωπος ἢ τὸ λευκόν, ὅταν μὴ προστεθῇ τι· οὔτε γὰρ ψεύδος οὔτε ἀληθὲς πω.
σημεῖον δ’ ἐστὶ τοῦτο· καὶ γὰρ ὁ τραγελάφος σημαίνει μὲν τι, οὔτω δὲ ἀληθὲς ἢ ψεύδος, ἐὰν
μή το εἶναι ἢ μή εἶναι προστεθή, ἡ ἀπλῶς ἢ κατά χρόνον.
20 Π. "Ονομα μὲν οὖν ἐστὶ φωνή σημαντική κατά συνθήκην ἀνευ χρόνου, ἵς μηδὲν μέρος ἐστὶ ση-
μαντικόν κεχωρισμένον· εἰ γὰρ τῷ Κάλλιππος τὸ ἱππος οὐδὲν αὐτὸ καθ’ ἑαυτὸ σημαίνει, ὥσπερ εἰ
τῷ λόγῳ τῷ καλὸς ἱππος. οὐ μὴν οὖδ’ ὕσπερ εἰ τοῖς ἀπλοῖς ὀνόμασιν, οὕτως ἔχει καὶ εἰν τοῖς
25 συμπεπληγμένοις· εἰν ἐκείνοις μὲν γὰρ τὸ μέρος οὐδαμῶς σημαντικόν, εἰ δὲ τούτοις βούλεται μὲν,
ἀλλ’ οὐδένος κεχωρισμένον, οἶον εἰ τῷ ἑπακτρο-
κέλης τὸ κέλης οὐδὲν σημαίνει καθ’ ἑαυτό.
Τὸ δὲ κατὰ συνθήκην, ὅτι φύσει τῶν ὀνομάτων οὐδὲν ἐστίν, ἀλλ’ ὅταν γένηται σύμβολον, ἐπεὶ
δηλοῦσι γέ τι καὶ οἱ ἀγράμματος ψόφοι, οἷον
θηρίων, οἵν οὐδὲν ἐστίν ὄνομα.
30 Τὸ δ’ οὐκ ἀνθρωπος οὐκ ὄνομα. οὐ μὴν οὖδὲ
κεῖται ὄνομα ὅ τι δὲι καλεῖν αὐτό· οὔτε γὰρ λόγος
οὔτε ἀπόφασις ἐστίν. ἀλλ’ ἐστιν ὄνομα ἁόριστον,
ὅτι ὁμοίως ἐφ’ ὀτόυν ὕπάρχει καὶ ὅντος καὶ μὴ
ὅντος.

* ἡ 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-connotation) 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.
16 b  Τὸ δὲ Φίλωνος ἡ Φίλωνι καὶ ὅσα τοιαῦτα, οὐκ ὅνοματα ἄλλα πτώσεις ὅνοματος. λόγος δὲ ἐστὶν αὐτοῦ τὰ μὲν ἄλλα κατὰ τὰ αὐτά· ὅτι δὲ μετὰ τοῦ ἐστὶν ἡ ἢ ἢ ἐσταὶ οὐκ ἀληθεύει ἡ ψευδεταί, τὸ δὲ ὅνομα ἀεὶ· οἴον Φίλωνός ἐστιν ἡ οὐκ ἐστιν· 5 οὐδὲν γὰρ πώς οὔτε ἀληθεύει οὔτε ψευδεταί.

III. Ῥήμα δὲ ἐστὶ τὸ προσσημαίνων χρόνον, οὐ μέρος οὐδὲν σημαίνει χωρίς, καὶ ἐστὶν ἀεὶ τῶν καθ' ἐτέρου λεγομένων σημείων. λέγω δ' ὅτι προσσημαίνει χρόνον, οἶον ὑπέρεια μὲν ὅνομα, τὸ δὲ υγιαῖνει ῥήμα· προσσημαίνει γὰρ τὸ νῦν ὑπ- 10 ἀρχεῖν. καὶ ἀεὶ τῶν καθ' ἐτέρου λεγομένων σημείων ἐστὶν, οἶον τῶν καθ' ὑποκειμένῳ ἢ ἐν ὑποκειμένῳ.

Τὸ δὲ οὐχ υγιαίνει καὶ τὸ οὐ κάμνει οὐ ῥήμα λέγω· προσσημαίνει μὲν γὰρ χρόνον καὶ ἀεὶ κατὰ τινος ὑπάρχει, τῇ δὲ διαφορᾷ ὅνομα οὐ κεῖται· ἀλλ' 15 ἐστὶν ἀόριστον ῥήμα, ὅτι ὁμοίως ἐφ' ὅτοιοι ὑπ- ἀρχεῖ, καὶ οἶνος καὶ μὴ οἴνος.

'Ομοίως δὲ καὶ τὸ υγιαίνει ἥ τὸ υγιαίνει οὐ ῥήμα, ἀλλὰ πτώσις ρήματος· διαφέρει δὲ τοῦ ρήματος, ὅτι τὸ μὲν τὸν παρόντα προσσημαίνει χρόνον, τὰ δὲ τὸ πέριξ.

20 Ἀυτὰ μὲν οὖν καθ' ἑαυτὰ λεγόμενα τὰ ρήματα ὅνοματα ἐστὶ καὶ σημαίνει τι (ἰστησι γὰρ ὁ λέγων
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
Aristotle

18 b


Here the existential sense of the verb 'to be' is ignored and the copulative only considered.

Aristotle, of course, has in mind also questions, commands and the like.

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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.\footnote{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.\footnote{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 ἡ πτώσεως ῥήματος· καὶ γὰρ ὁ τοῦ ἀνθρώπου λόγος, εὰν μὴ τὸ ἔστιν ἢ ἢ ἢ ἔσται ἢ τι τοιοῦτον προστεθῇ, οὐπω λόγος ἀποφαντικός. διότι δὴ ἐν τί ἔστιν ἀλλ' οὐ πολλὰ τὸ ζῷον πεζὸν δίπουν· οὐ γὰρ δὴ τῷ σύνεγγυς εἰρήσθαι εἰς ἔσται. ἔστι 15 δὲ ἄλλης πραγματείας τούτο εἰπεῖν.

'Εστι δὲ εἰς λόγος ἀποφαντικὸς ἢ ὁ ἐν δηλῶν ἢ ὁ συνδέσμων εἰς, πολλοὶ δὲ οἱ πολλὰ καὶ μὴ ἐν ἡ οἱ ἀσύνδετοι.

Τὸ μὲν οὖν ὄνομα ἡ ῥῆμα φάσις ἔστω μόνον, ἐπειδὴ οὐκ ἔστιν εἰπεῖν οὕτω δηλοῦσά τι τῇ φωνῇ ὡστε ἀποφαίνεσθαι, ἢ ἐρωτώτως τινος, ἢ μή. 20 ἄλλ' αὐτόν προαιρούμενον.

Τούτων δὲ ἡ μὲν ἀπλὴ ἔστιν ἀπόφασις, οἷον τὶ κατὰ τινός ἢ τὶ ἀπὸ τινος, ἢ δὲ ἐκ τούτων συγκεμένη οἰον λόγος τις ἢ ἢ σύνθετος. ἔστι δὲ ἡ ἀπλὴ ἀπόφασις φωνῇ συμμετηκότης περὶ τοῦ ὑπάρχειν τι τῇ μὴ ὑπάρχειν, ὡς οἱ χρόνοι διηρήσται.

VI. Κατάφασις δὲ ἔστιν ἀπόφασις τινος κατὰ τινος. ἀπόφασις δὲ ἔστιν ἀπόφασις τινος ἀπὸ τινος.

'Επεί δὲ ἔστι καὶ τὸ ὑπάρχον ἀποφαίνεσθαι ὡς μὴ ὑπάρχον καὶ τὸ μὴ ὑπάρχον ὡς ὑπάρχον καὶ τὸ ὑπάρχον ὡς ὑπάρχον καὶ τὸ μὴ ὑπάρχον ὡς

* 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 unjoined.

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 ὑπάρχων, καὶ περὶ τοὺς ἐκτὸς δὲ τοῦ νῦν χρόνους ὁσαύτως, ἀπαν ἄν ἐνδέχεσθαι καὶ ὁ κατέφησε τις ἀποφήσαι καὶ ὁ ἀπέφησε τις καταφήσαι. ὡστε δήλου ὅτι πάση καταφάσει ἐστὶν ἀπόφασις ἀντικειμένη καὶ πάση ἀποφάσει κατάφασις. καὶ ἔστω ἀντίφασις τοῦτο, κατάφασις καὶ ἀπόφασις αἱ ἀντικείμεναι. λέγω δὲ ἀντικείμθαι τὴν τοῦ αὐτοῦ κατὰ τοῦ αὐτοῦ, μὴ ὀμο-νύμως δὲ, καὶ ὅσα ἄλλα τῶν τοιούτων προσδιόριζόμεθα πρὸς τὰς σοφιστικὰς ἑνοχλήσεις.

VII. Ἐπεὶ δὲ ἐστὶ τὰ μὲν καθόλου τῶν πραγ-μάτων τὰ δὲ καθ' ἐκαστον (λέγω δὲ καθόλου μὲν ὁ ἐπὶ πλειόνων πέφυκε κατηγορεῖσθαι, καθ' ἐκαστον) μὴ, οἷον ἄνθρωπος μὲν τῶν καθόλου, Καλλίας δὲ τῶν καθ' ἐκαστον). ἀνάγκη δὲ ἀποφαίνεσθαι ὡς ὑπάρχει τι ἡ μὴ ὅτε μὲν τῶν καθόλου των, ὅτε δὲ τῶν καθ' ἐκαστον. ἐὰν μὲν οὖν καθόλου ἀποφαίνεται ἐπὶ τοῦ καθόλου ὅτι ὑπάρχει τι ἡ μὴ, ἔσονται ἐναντίαι αἱ ἀποφάνσεις. λέγω δὲ ἐπὶ τοῦ καθόλου ἀποφαίνεσθαι καθόλου, οἷον πᾶς ἄνθρωπος λευκός, οὐδεὶς ἄνθρωπος λευκός. όταν δὲ ἐπὶ τῶν καθόλου μὲν, μὴ καθόλου δὲ, αὐτὰ μὲν οὐκ εἰσὶν ἐναντία, τὰ μέντοι δηλούμενα ἐστὶν εἰναι ἐναντία ποτέ. λέγω δὲ τὸ μὴ καθόλου ἀποφαίνεσθαι ἐπὶ τῶν καθόλου, οἷον ἐστὶ λευκός ἄνθρωπος, οὐκ ἐστὶ λευκός ἄνθρωπος. καθόλου γὰρ ὅντος τοῦ ἄνθρωπος οὐχ ὥς 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
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tῷ ἀποφάνσει· τὸ γὰρ πᾶς οὐ τὸ καθόλου σημαίνει ἄλλ᾽ ὧτι καθόλου. ἐπὶ δὲ τοῦ κατηγορομένου καθόλου κατηγορεῖν τὸ καθόλου οὐκ ἐστὶν ἀληθές· οὐδεμιὰ γὰρ κατάφασις ἀληθῆς ἐσται, ἐν ἣ τοῦ 15 κατηγορομένου καθόλου τὸ καθόλου κατηγορεῖται, οἷον ἐστὶ πᾶς ἀνθρώπος πᾶν ζώον.

'Ἀντικείσθαι μὲν οὖν κατάφασιν ἀποφάσει λέγω ἀντιφατικῶς τὴν τὸ καθόλου σημαίνουσαν τῷ αὐτῷ ὧτι οὐ καθόλου, οἷον πᾶς ἀνθρώπος λευκός—οὐ πᾶς ἀνθρώπος λευκός, οὐδεὶς ἀνθρώπος λευκός 20—ἔστι τις ἀνθρώπος λευκός· ἐναρτῶς δὲ τὴν τοῦ καθόλου κατάφασιν καὶ τὴν τοῦ καθόλου ἀπόφασιν, οἷον πᾶς ἀνθρώπος λευκός—οὐδεὶς ἀνθρώπος λευκός, πᾶς ἀνθρώπος δίκαιος—οὐδεὶς ἀνθρώπος δίκαιος.

Διὸ ταῦτας μὲν οὖν οἷον τε ἀμα ἀληθεῖς εἶναι, τὰς δὲ ἀντικειμένας αὐταῖς εἰδέχεται ποτε ἐπὶ 25 τοῦ αὐτοῦ ἀμα ἀληθεῖς εἶναι, οἷον οὐ πᾶς ἀνθρώπος λευκός καὶ ἐστὶ τις ἀνθρώπος λευκός. ὡσαὶ μὲν οὖν ἀντιφάσεις τῶν καθόλου εἰσὶ καθόλου, ἀνάγκη τὴν ἑτέραν ἀληθῆ εἶναι ἡ ψευδῆ, καὶ ὡσαὶ ἐπὶ τῶν

* '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’ έκαστα, οἷον ἦστι Σωκράτης λευκός—οὐκ ἦστι Σωκράτης λευκός· ὅσα δὲ ἐπὶ τῶν καθόλου μὲν, μὴ καθόλου δὲ, οὐκ ἂει ἢ μὲν ἀληθῆς ἢ δὲ ψευδῆς. ἀμα γὰρ ἀληθές ἦστιν εἰπεῖν ὅτι ἦστιν ἀνθρωπός λευκός καὶ ὅτι οὐκ ἦστιν ἀνθρωπός λευκός, καὶ ἦστιν ἀνθρωπός καλὸς καὶ οὐκ ἦστιν ἀνθρωπός καλὸς. εἰ γὰρ αἰσχρός, καὶ οὐ καλὸς· καὶ εἰ γίνεται τι, καὶ οὐκ ἦστιν. δόξει δ’ ἂν ἐξαιρεθῇς ἄτοπον εἶναι διὰ τὸ φαίνεσθαι σημαίνειν τὸ οὐκ ἦστιν ἀνθρωπός λευκός ἁμα καὶ ὅτι οὐδεὶς ἀνθρωπός λευκός· τὸ δὲ οὔτε ταύτων σημαίνει οὐθ’ ἁμα εἴς ἀνάγκης.

Φανεροῦν δὲ ὅτι καὶ μία ἀπόφασις μιᾶς καταφάσεώς ἦστι· τὸ γὰρ αὐτὸ δεῖ ἀποφῆσαι τὴν ἀπόφασιν ὅπερ κατέφησεν ἡ κατάφασις, καὶ ἀπὸ τοῦ αὐτοῦ, ἢ τῶν καθ’ έκαστά τινος ἡ ἀπὸ τῶν καθόλου τινός, ἢ ὡς καθόλου ἢ ὡς μὴ καθόλου. λέγω δὲ οἷον ἦστι Σωκράτης λευκός—οὐκ ἦστι Σωκράτης λευκός. εὰν δὲ ἄλλο τι ἢ ἄπ’ ἄλλου τὸ αὐτὸ, οὐχ ἢ ἀντικειμένη ἀλλ’ ἦσται εἰκεῖνς ἐτέρα. τῇ δὲ πᾶς ἀνθρωπός λευκός ἢ οὐ πᾶς ἀνθρωπός λευκός, τῇ δὲ τίς ἀνθρωπός λευκός ἢ οὐδεὶς ἀνθρωπός λευκός· τῇ δὲ ἦστιν ἀνθρωπός λευκός ἢ οὐκ ἦστιν ἀνθρωπός λευκός.

"Ὅτι μὲν οὖν μία καταφάσει μία ἀπόφασις ἀντικείται ἀντιφατικῶς, καὶ τίνες εἰσίν αὐταί, εἰρηται· καὶ ὅτι αἱ ἐναντίαι ἄλλαι, καὶ τίνες εἰσίν αὐταί,"

* i.e. either distributed or undistributed.
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 subject. 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,
18 a εἰρήται καὶ ὅτι οὐ πᾶσα ἀληθής ἡ ψευδής ἀντι-φασις, καὶ διὰ τι, καὶ πότε ἀληθής ἡ ψευδής.

VIII. Μία δὲ ἐστὶ κατάφασις καὶ ἀπόφασις ἡ ἐν καθ’ ἐνὸς σημαινοῦσα, ἡ καθόλου ὅτις καθόλου ἡ μὴ ὀμοίως, οἰον πάς ἄνθρωπος λευκός ἐστι—
15 οὐκ ἐστι πᾶς ἄνθρωπος λευκός, ἡστιν ἄνθρωπος λευκός—οὐκ ἐστιν ἄνθρωπος λευκός, οὔδεις ἄνθρωπος λευκός—ἐστι τις ἄνθρωπος λευκός, εἰ τὸ λευκὸν ἐν σημαινεῖ. εἰ δὲ δυνῶ ἐν ὅνομα κεῖται, εἷς ὃν μὴ ἐστιν ἐν, ο’all μία κατάφασις, 1 οἶοι εἰ τις θεῖο τὸ ὅνομα ἱμάτιον ἢπη̂ καὶ ἄνθρωπω, τὸ ἐστιν ἱμάτιον λευκῶν, αὕτη οὐ μία κατάφασις οὐδὲ ἀπόφασις μία. οὐδὲν γὰρ διαφέρει τούτο εἰπέων ἡ ἐστιν ἢπη̂ καὶ ἄνθρωπος λευκός. τούτο δὲ οὐδὲν διαφέρει τοῦ εἰπέων ἐστιν ἢπη̂ καὶ ἄνθρωπος λευκός καὶ ἐστιν ἄνθρωπος λευκός. εἰ οὖν αὕται πολλά 25 σημαινοῦσι καὶ εἰσὶ πολλαί, δήλον ὅτι καὶ ἡ πρῶτη ἦτοι πολλά ἡ οὐδὲν σημαινεῖ οὐ γὰρ ἐστιν ὁ τις ἄνθρωπος ἢπη̂ς. ὥστε οὐδ’ ἐν ταύταις ἀνάγκη τὴν μὲν ἀληθῆ τὴν δὲ ψευδῆ εἶναι ἀντι-φασιν.

IX. Ἐπὶ μὲν οὖν τῶν ὅτις καὶ γενομένων ἀνάγκη τὴν κατάφασιν ἡ τὴν ἀπόφασιν ἀληθῆ ἡ 80 ψευδῆ εἶναι, καὶ ἐπὶ μὲν τῶν καθόλου ὡς καθόλου

1 Β. adds οἴδε ἀπόφασις μία.

* Both may be true or both false.
ON INTERPRETATION, vii–ix

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.
- Man is white.
- No man is white.
- Not every man is white.
- Man is not 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
ARISTOTLE

18 a  

\(\text{α\varepsilon \ την μεν \ ἀληθὴ \ την \ δὲ \ ψευδὴ \ εἶναι, \ καὶ \ ἐπὶ τῶν \ καθ' \ έκαστα, \ ὅσπερ \ εἰρηταί, \ ἐπὶ \ δὲ \ τῶν καθόλου μὴ \ καθόλου \ λεχθέντων \ οὐκ \ ἀνάγκη \ εἰρηταί \ δὲ \ καὶ \ περὶ \ τούτων.}\\

'Επὶ \ δὲ \ τῶν \ καθ' \ έκαστα \ καὶ \ μελλόντων \ οὐχ \ ὁμοίως. \ εἰ \ γάρ \ πάσα \ κατάφασις \ καὶ \ ἀπόφασις \ ἀληθῆς \ ἡ \ ψευδῆς, \ καὶ \ ἀπαν \ ἀνάγκη \ ὑπάρχει \ ἡ \ μὴ \ ὑπάρχει, \ ὡστε \ εἰ \ ὁ \ μὲν \ φήσει \ ἔσεσθαι \ τι \ ὁ \ δὲ \ μὴ \ φήσει \ τὸ \ αὐτὸ \ τοῦτο, \ δὴ \ οὐ \ ἀνάγκη \ ἀληθεύειν \ τὸν \ ἐτερον \ αὐτῶν, \ εἰ \ πάσα \ κατάφασις \ καὶ \ ἀπόφασις \ ἀληθῆς \ ἡ \ ψευδῆς. \ ἀμφο \ γάρ \ οὐχ \ ὑπάρξει \ ἀμα \ ἐπὶ \ τοῖς \ τοιούτοις. \ εἰ \ γάρ \ ἀληθῆς \ ἐκεῖνοι \ οὐ \ λευκοὶ \ ἢ \ οὐ \ λευκοί, \ καὶ \ εἰ \ ἐστι \ λευκόν \ ἢ \ οὐ \ λευκόν, \ ἄληθες \ ἢ \ οὐ \ φάναι \ ἡ \ ἀποφάναι: \ καὶ \ εἰ \ μὴ \ ὑπάρχει, \ ψεύδεται, \ καὶ \ εἰ \ ψεύδεται, \ οὐχ \ ὑπάρχει.\\

5 \νο\̄στε \ ἀνάγκη \ ἡ \ τὴν \ κατάφασιν \ ἡ \ τὴν \ ἀπόφασιν \ ἀληθῆ \ εἶναι \ ἡ \ ψευδῆ.

Οὐδὲν \ ἅρα \ οὔτε \ ἐστὶ \ οὔτε \ γίνεται \ οὔτε \ ἀπὸ \ τύχης \ οὐθ' \ ὀπότερ \ ἐτυχεῖ, \ οὔτε \ ἐσται \ ἢ \ οὐκ \ ἐσται, \ ἀλλ' \ εἰ \ ἀνάγκης \ ἀπαίτα \ καὶ \ οὐχ \ ὀπότερ \ ἐτυχεῖ. \ ἡ \ γάρ \ ὁ \ φας \ ἀληθεύει \ ἡ \ ἡ \ 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
ομοίως γὰρ ἂν ἐγίνετο ἡ οὖκ ἐγίνετο· τὸ γὰρ ὀπότερ' ἔτυχεν οὐδὲν μᾶλλον οὕτως ἡ μὴ οὕτως ἔχει ἡ ἔξει.

10 Ἕστι εἰ ἐστὶ λευκὸν νῦν, ἀληθῆς ἢν εἰπεῖν πρότερον ὅτι ἔσται λευκὸν, ὥστε ἢ ἀληθῆς ἡν εἰπεῖν ὅτι ἔσται λευκὸν· ἢ ἐστὶν ἡ ἔσται, εἰ δὲ ἢ ἀληθῆς ἢν εἰπεῖν ὅτι ἔσται, οὐχ οἶνον τούτο μὴ εἶναι οὐδὲ μὴ ἔσεσθαι. ὃ δὲ μὴ οἶνον τε μὴ γενέσθαι, ἀδύνατον μὴ γενέσθαι. ὃ δὲ ἀδύνατον μὴ γενέσθαι, ἀνάγκη γενέσθαι. ἀπαίτα οὖν τὰ ἐσόμενα ἀνάγκαιον γενέσθαι. οὐδὲν ἄρα ὀπότερ' ἔτυχεν οὐδὲ ἀπὸ τῆς ἔσται· εἰ γὰρ ἀπὸ τῆς ἔσται, οὐκ εἰς ἀνάγκη.

'Αλλὰ μὴν οὐδ' ὡς οὐδέτερον γε ἀληθῆς εἴδε—
χεται λέγειν, οἶνον ὅτι οὕτε ἔσται οὕτε οὐκ ἔσται. πρῶτον μὲν γὰρ οὕσης τῆς καταφάσεως ψευδοῦς

20 ἡ ἀπόφασις οὐκ ἀληθῆς, καὶ ταύτης ψευδοῦς οὕσης
tὴν κατάφασιν συμβαίνει μὴ ἀληθῆ εἶναι. καὶ
prus τούτοις, εἰ ἀληθῆς εἰπεῖν ὅτι λευκὸν καὶ
μέγα, δὲ ἀμφοὶ ὑπάρχειν. εἰ δὲ ὑπάρξει εἰς
αὐρίον, ὑπάρξειν' εἰς αὐρίον. εἰ δὲ μῆτε ἔσται
μήτε μὴ ἔσται αὐρίον, οὐκ ἂν εἰ ὁ ὀπότερ' ἔτυχεν, οἶνον ναυμαχία· δέου γὰρ ἂν μήτε γενέσθαι

25 ναυμαχίαν αὐρίον μήτε μὴ γενέσθαι.

1 ὑπάρξει B.
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 ἀτόπα ταῦτα καὶ
tοιαῦτα ἑτέρα, εἰπέρ πάσης καταφάσεως καὶ ἀπο-
φάσεως ἢ ἐπὶ τῶν καθόλου λεγομένων ὡς καθόλου
ἡ ἐπὶ τῶν καθ’ ἑκαστὸν ἀνάγκη τῶν ἀντικειμένων
ἐλναι τὴν μὲν ἀληθῆ τὴν δὲ ψευδῆ, μηδὲν δὲ
80 ὁπότερ’ ἐτυχεὶ εἶναι εἰν τοῖς γιγνομένοις, ἄλλα
πάντα εἶναι καὶ γίγνεσθαι εἰς ἀνάγκης. ὅστε οὔτε
βουλεύεσθαι δέοι ἢν οὔτε πραγματεύεσθαι, ὡς εάν
μὲν τοι δοκίμασωμεν, ἐσται τοδί, εάν δὲ μὴ τοδί,
οὐκ ἐσται τοδί. οὔδεν γὰρ κωλύει καὶ εἰς μυριο-
στὸν ἔτος τὸν μὲν φάναι τοῦτο ἐσεθαί τὸν δὲ μὴ
85 φάναι, ὅστε εἰς ἀνάγκης ἐσεθαί ὁποτερονοῦν
αὐτῶν ἀληθεῖς ἢν εἰπεῖν τότε. ἄλλα μὴν οὔδὲ
tοῦτο διαφέρει, εἰ τινὲς εἰπον τὴν ἀντίφασιν ἡ
μὴ εἰπον. δήλου γὰρ ὅτι οὕτως ἔχει τὰ πράγματα,
cἀν μὴ ὁ μὲν καταβήσῃ τι ό δὲ ἀποφήσῃ. οὔδὲ
gὰρ διὰ τὸ καταβαθήναι ἢ ἀποφαθήναι ἐσται ἢ
19 ὁ οὖκ ἐσται, οὔδ’ εἰς μυριοστὸν ἐτος μᾶλλον ἢ ἐν
ὁποσφούν χρόνῳ. ὅστε εἰ ἐν ἀπαντὶ τῶν χρόνῳ
οὕτως εἶχεν ὅστε τὸ ἐτερον ἀληθεύεσθαι, ἀναγ-
καῖον ἢν τοῦτο γενέσθαι, καὶ ἑκαστὸν τῶν γενο-
μένων αεὶ οὕτως εἶχεν ὅστε εἰς ἀνάγκης γενέσθαι.
ὅ τε γὰρ ἀληθῶς εἰπτε τις ὅτι ἐσται, οὐχ οἶνον τε
cμὴ γενέσθαι καὶ τὸ γιγνομένον ἀληθεῖς ἢν εἰπεῖν
αεὶ ὅτι ἐσται.
Εἰ δὴ ταῦτα ἄδυνατα—ὁρῶμεν γὰρ ὅτι ἐστιν
ἀρχὴ τῶν ἐσομένων καὶ ἀπὸ τοῦ βουλευεσθαι καὶ

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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,
ΑΡΙΣΤΟΤΛΕ

19 a ἀπὸ τοῦ πρᾶξαι τι, καὶ ὅτι ὅλως ἐστίν ἐν τοῖς μὴ ἀεὶ ἐνεργοῦσι τὸ δυνατὸν εἶναι καὶ μὴ, ὅμοιως· ἐν οἷς ἄμφως εἰνδέχεται, καὶ τὸ εἶναι καὶ τὸ μὴ εἶναι, ὡστε καὶ τὸ γενέσθαι καὶ τὸ μὴ γενέσθαι. καὶ πολλὰ ἡμῖν δῆλα ἐστιν οὕτως ἔχοντα, οἷον ὅτι τούτω τὸ ἐμάτιον δυνατὸν ἐστὶ διατηρήσεται καὶ οὐ διατηρήσεται, ἀλλ' ἐμπροσθεν κατατριβήσεται. 15 ὁμοίως δὲ καὶ τὸ μὴ διατηρήσεται δυνατὸν οὐ γὰρ ἀν ὑπήρχε τὸ ἐμπροσθεν αὐτὸ κατατριβήσεται, εἰγε μὴ δυνατὸν ἦν τὸ μὴ διατηρήσεται. ὡστε καὶ ἐπὶ τῶν ἄλλων γενέσεων, ὅσαι κατὰ δύναμιν λέγονται τὴν τοιαύτην. φανερὸν ἄρα ὅτι οὐχ ἀπαντα λέγεται ἐξ ἀνάγκης οὔτ' ἐστιν οὕτε γίνεται, ἀλλὰ τὰ μὲν 20 ὀπότερ ἐπιτέλεσα, καὶ οὐδὲν μᾶλλον ἡ κατάφασις ἡ ἡ ἀπόφασις ἀληθὴς, τὰ δὲ μᾶλλον μὲν καὶ ὡς ἐπὶ τὸ πολὺ θάτερον, οὐ μὴν ἀλλ' εἰνδέχεται γενέσθαι καὶ θάτερον, θάτερον δὲ μὴ.

Τὸ μὲν οὖν εἶναι τὸ ὅν ὅταν ἦ, καὶ τὸ μὴ ὅν μὴ 25 εἶναι ὅταν μὴ ἦ, ἁνάγκη, οὐ μὴν οὕτε τὸ ὅν ἀπαν ἀνάγκη εἶναι οὕτε τὸ μὴ ὅν μὴ εἶναι. οὐ γὰρ ταύτων ἐστὶ τὸ ὅν ἄπαν εἶναι ἐξ ἀνάγκης ὅτε ἐστι, καὶ τὸ ἀπλῶς εἶναι ἐξ ἀνάγκης. ὁμοίως δὲ καὶ ἐπὶ τοῦ μὴ οὕτως. καὶ ἐπὶ τῆς ἀντιφάσεως ὁ αὐτὸς λόγος. εἶναι μὲν ἢ μὴ εἶναι ἄπαν ἀνάγκη, καὶ ἐσεθαί γε ἡ μὴ οὐ μὲντοι διελοίτα γε εἰπεῖν θάτερον ἀναγκαῖον. λέγω δὲ οἶον ἀνάγκη μὲν 30 ἐσεθαί ναυμαχίαν αὐριον ἢ μὴ ἐσεθαί, οὐ μὲντοι ἐσεθαί γε αὐριον ναυμαχίαν ἀναγκαίον οὔτε μὴ γενέσθαι γενέσθαι μὲντοι ἢ μὴ γενέσθαι ἀναγκαίον. 138
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
Aristotle

19 a ὡστ' ἐπεὶ ὁμοιός οἱ λόγοι ἀληθεῖς ὀπέπερ τὰ πράγματα, δὴλον ὅτι ὅσα οὖτως ἔχει ὡστε ὀπότερ' ἐτυχε καὶ ταναντία εἰδέχεσθαι, ἀνάγκη ὁμοιός ἔχειν καὶ τὴν ἀντίφασιν.

19 b ὡστε δὴλον ὅτι οὐκ ἀνάγκη πάσης καταφάσεως καὶ ἀποφάσεως τῶν ἀντικειμένων τὴν μὲν ἀληθῆ τὴν δὲ ψευδὴ εἶναι; οὐ γὰρ ὡσπερ ἐπὶ τῶν οὖτων, οὔτως ἔχει καὶ ἐπὶ τῶν μὴ οὖτων μὲν δυνατῶν δὲ εἶναι ἡ μὴ εἶναι, ἄλλ' ὡσπερ εἴρηται.

5 Ἡ Ἑπεὶ δὲ ἐστὶ τι κατά τινος ἡ κατάφασις σημαίνουσα, τούτῳ δὲ ἐστὶν ᾗ ὁνόμα ἤ τὸ ἀνώνυμον, ἐν δὲ δεῖ εἶναι καὶ καθ' ἐνὸς τὸ ἐν τῇ καταφάσει (τὸ δὲ ὁνόμα εἴρηται καὶ τὸ ἀνώνυμον πρότερον τὸ γὰρ οὐκ ἀνθρωπος ὁνόμα μὲν οὐ λέγω ἄλλ' ἀόριστον ὁνόμα· ἐν γὰρ πῶς σημαίνει καὶ τὸ ἀόριστον· ὡσπερ καὶ τὸ οὔχ ὑμιαίνει οὐ ῥήμα ἄλλ' ἀόριστον ῥήμα), ἐσται πάσα κατάφασις καὶ ἀπόφασις ἡ ἐξ ὁνόματος καὶ ῥήματος ἡ ἐξ ἀορίστου ὁνόματος καὶ ῥήματος. ἀνευ δὲ ῥήματος οὐδεμία κατάφασις οὐδὲ ἀπόφασις· τὸ γὰρ ἐστὶν ἡ ἐσται ἦ ἦν ἡ γίνεται, ἡ οὐσα ἀλλα τοιαύτα, ῥῆματα ἐκ τῶν κειμένων ἐστὶ προσημαινει γὰρ χρόνων.
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
ARISTOTLE

19 b ὡστε πρώτη ἔσται κατάφασις καὶ ἀπόφασις τὸ ἔστιν ἄνθρωπος—οὐκ ἔστιν ἄνθρωπος, ἔτα ἔστιν οὐκ ἄνθρωπος—οὐκ ἔστιν οὐκ ἄνθρωπος, πάλιν ἔστι πᾶς ἄνθρωπος—οὐκ ἔστι πᾶς ἄνθρωπος, ἔστι πᾶς οὐκ ἄνθρωπος—οὐκ ἔστι πᾶς οὐκ ἄνθρωπος. καὶ ἐπὶ τῶν ἐκτὸς ἰε χρόνων ὁ αὐτὸς λόγος.

20 "Ὅταν δὲ τὸ ἔστι τρίτον προσκατηγορηται, ἦδη διχῶς λέγονται αἱ ἀντιθέσεις. λέγω δὲ οἶνον ἔστι δίκαιοι ἄνθρωποι: τὸ ἔστι τρίτον φημι συγκεῖσθαι ὄνομα ἡ ρῆμα ἐν τῇ καταφάσει. ὡστε διὰ τοῦτο τέτταρα ἔσται ταῦτα, ὅν τὰ μὲν δῶ ὑπὸ τῆς κατάφασιν καὶ ἀπόφασιν ἔξει κατὰ τὸ στοιχεῖον ὡς αἱ στερήσεις, τὰ δὲ δύο οὐ. λέγω δ’ δι’ τὸ ἔστιν ἦ τῶ δικαίῳ προσκείσεται ἦ τῷ οὐ δικαίῳ, ὡστε καὶ ἢ ἀπόφασις. τέτταρα οὖν ἔσται. νοοῦμεν δὲ τὸ λεγόμενον ἐκ τῶν ὑπογεγραμμένων. ἔστι δίκαιος ἄνθρωπος· ἀπόφασις τούτου, οὐκ ἔστι δίκαιος ἄνθρωπος. ἔστιν οὐ-δίκαιος ἄνθρωπος: τούτου ἀπόφασις, οὐκ ἔστιν οὐ-δίκαιος ἄνθρωπος. τὸ γὰρ ἔστιν ἐνταῦθα καὶ τὸ οὐκ ἔστι τῷ δικαίῳ προσκείσεται καὶ τῷ οὐ δικαίῳ. ταῦτα μὲν οὖν, ὕσπερ ἐν τοῖς Ἀναλυτικοῖς λέγεται, οὕτω τέτακται. ὁμοίως δὲ ἔξει κἂν καθόλου τοῦ ὁνόματος ἢ ἡ κατάφασις, οἶον πᾶς ἔστιν ἄνθρωπος δίκαιος. ἀπόφασις τούτου, οὐ πᾶς ἔστιν ἄνθρωπος δίκαιος. πᾶς ἔστιν ἄνθρωπος οὐ δίκαιος—οὐ πᾶς ἔστιν

* 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>
</tbody>
</table>
| Man is not-just.   | Man is not not-just.

Now ‘is’ and ‘is not’ in these cases are added to
‘just’ or ‘not-just.’ In this way are these state-
ments 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>
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19 b  

άνθρωπος οὖν δίκαιος. πλὴν οὐχ ὀμοίως τὰς κατὰ διάμετρον ἑνδέχεται συμαλληθεῖν: ἑνδέχεται δὲ ποτέ.

Αὐτὰ μὲν οὖν δύο ἀντίκεινται, ἀλλαὶ δὲ δύο πρὸς τὸ οὐκ ἀνθρωπὸς ὡς ὑποκείμενον τι προστεθέντος,1 ἕστι δίκαιος οὐκ-ἀνθρωπος—οὐκ ἐστὶ δίκαιος οὐκ-ἀνθρωπος, ἔστιν-οὐ δίκαιος οὐκ-ἀνθρωπος—οὐκ ἐστὶν οὖν-δίκαιος οὐκ-ἀνθρωπος. πλεῖος δὲ τούτων οὐκ ἑσονται ἀντιθέσεις. αὐτὰ δὲ χωρίς ἐκείνων αὐτὰι καθ’ ἑαυτὰς ἑσονται, ὡς ὀνόματι τῶν οὐκ ἀνθρωπὸς χρώμεναι.

'Εφ' ὅσον δὲ τὸ ἐστι μὴ ἀρμόττει, οἷον ἐπὶ τοῦ ὑγιαίνει καὶ βαδίζει, ἐπὶ τούτων τὸ αὐτὸ ποιεῖ οὕτω τυθέμενον ὡς ἂν εἴ τὸ ἐστὶ προσήπτετο, οἷον ὑγιαίνει πᾶς άνθρωπος—οὐχ ὑγιαίνει πᾶς άνθρωπος, ὑγιαίνει πᾶς οὐκ άνθρωπος—οὐχ ὑγιαίνει πᾶς οὐκ άνθρωπος.

1 προστεθέν B.

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a I give the text here as it stands. But there should be some tables arranging all these eight propositions in the order we find in the Prior Analytics, 51 b 36. Hence the reference here to that text. But, if tables there were in the Greek at one time, they are no longer there. And 'the statements diagonally joined' are no longer diagonally joined. And in each case the four propositions are differently arranged in the Greek from the order in the Prior Analytics, as the reader will see from the following, that stand for the three missing schemes:

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

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

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

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.

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.

The diagonal lines in each scheme are intended, therefore, to connect the affirmations and denials respectively.
Ἀνθρωπος. οὔ γάρ ἐστι τὸ οὗ πᾶς ἀνθρωπος λεκτέων, ἅλλα τὸ οὗ, τῇ ἀπόφασιν, τῷ ἀνθρωπος προσθετέον. τὸ γάρ πᾶς οὗ τὸ καθὸλον σημαίνει, ἄλλο ὅτι καθὸλον. δήλου δὲ ἐκ τούθε, ὑγιαινει ἀνθρωπος—οὔχ ὑγιαινει ἀνθρωπος, ὑγιαινει οὐκ ἀνθρωπος—οὔχ ὑγιαινει οὐκ ἀνθρωπος. ταῦτα γάρ ἐκείνων διαφέρει τῷ μὴ καθὸλον εἶναι. ὥστε τὸ πᾶς ἡ οὐδείς οὐδὲν ἄλλο προσημαίνει ἡ ὅτι καθὸλον τοῦ ὀνόματος ἡ κατάφασιν ἡ ἀπόφασιν. 

τὰ δὲ ἅλλα τὰ αὐτὰ δεὶ προστιθέναι.

Ἐπεὶ δὲ ἐναιτία ἀπόφασις ἐστι τῇ ἁπαν ἐστὶ ζῷον δίκαιον ἡ σημαίνουσα ὅτι οὐδὲν ἐστὶ ζῷον δίκαιον, αὐταί μὲν φανερὸν ὅτι οὐδέποτε ἐσονται οὔτε ἀληθεῖς ἃμα οὔτε ἐπὶ τοῦ αὐτοῦ, αἰ δὲ ἀντικείμεναι ταῦτας ἐσονται ποτε, οἷον οὐ πᾶν ζῷον δίκαιον καὶ ἐστὶ τῇ ζῷον δίκαιον. ἀκολουθοῦσι δὲ αὐταί, τῇ μὲν πᾶς ἀνθρωπος οὐ δίκαιος ἐστιν ἡ οὐδείς ἐστιν ἀνθρωπος δίκαιος, τῇ δὲ ἐστὶ τις ἀνθρωπος δίκαιος ἡ ἀντικειμενη ὅτι οὐ πᾶς ἀνθρωπος ἐστιν οὐ δίκαιος· ἀνάγκη γὰρ εἰναι τινα.

Φανερὸν δὲ καὶ ὅτι ἐπὶ μὲν τῶν καθ’ ἐκαστον, εἰ ἀληθεῖς ἔρωτηθέντα ἀποφήσαι, ὅτι καὶ κατα-25 φήσαι ἀληθεῖς· οἷον ἂρα γε Σωκράτης σοφός; οὐ. Σωκράτης ἃρα οὐ σοφός. ἐπὶ δὲ τῶν καθόλου
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
20a οὐκ ἀλήθης ἡ ὁμοίως λεγομένη, ἀλήθης δὲ ἡ ἀπόφασις, οἷον ἀρά γε πᾶς ἄνθρωπος σοφός; οὐ. πᾶς ἄρα ἄνθρωπος οὐ σοφός· τοῦτο γὰρ ψεύδος.

30 ἀλλὰ τὸ οὐ πᾶς ἄρα ἄνθρωπος σοφός ἀλήθεις· αὐτὴ δὲ ἐστὶν ἡ ἀντικειμένη, ἐκεῖνη δὲ ἡ ἐναντία.

Αἱ δὲ κατὰ τὰ ἀόριστα ἀντικείμενα οἴνοματα καὶ ῥήματα, οἷον ἐπὶ τοῦ μὴ ἄνθρωπος καὶ μὴ δίκαιος, ἀναπληρώσασις ἀνευ οἴνοματος καὶ ῥήματος δόξειαν τὸν εἰλικρίνεια. οὐκ εἰσὶ δὲ· ἀεὶ γὰρ ἀληθεύειν ἡ ἀνάγκη ἡ ψεύδεσθαι τὴν ἀπόφασιν, οὐ δ' εἰπὼν ὅτι οὐκ ἄνθρωπος οὐδὲν μᾶλλον τοῦ εἰπότος ἄνθρωπος ἄλλα καὶ ἂν τὸν ἠλέητον τῇ ἐφευρται, ἐὰν μήτι προστεθῇ, σημαίνει δὲ τὸ ἐστὶ πᾶς οὐκ-ἀνθρωπός δίκαιος οὐδεμιὰ εἰκεῖσιν ταύτων, οὐδὲ ἡ ἀντικειμένη ταύτη ἡ οὐκ ἐστὶ πᾶς οὐκ-ἀνθρωπος δίκαιος· τὸ δὲ πᾶς οὐ δίκαιος οὐκ ἄνθρωπος τῷ οὐδεὶς δίκαιος

40 οὐκ ἄνθρωπος ταύτων σημαίνει.

20b Μετατιθέμενα δὲ τὰ οἴνοματα καὶ τὰ ρήματα ταύτων σημαίνει, οἷον ἐστὶ λευκὸς ἄνθρωπος, ἐστὶν ἄνθρωπος λευκός. εἰ γὰρ μὴ τοῦτό ἐστι, τοῦ αὐτοῦ πλείους ἐσοφαι ἀπόφασις. ἀλλ' ἐδεδεικτο ὅτι μία μίας. τοῦ μὲν γὰρ ἐστι λευκὸς ἄνθρωπος ἀπόφασις τὸ οὐκ ἐστὶ λευκὸς ἄνθρωπος· τοῦ δὲ ἐστὶν ἄνθρωπος λευκός, εἰ μὴ ἡ αὐτὴ ἐστὶ τῇ ἐστι λευκὸς ἄνθρωπος, ἐσται ἀπόφασις ἦτοι τῷ οὐκ ἐστιν οὐκ ἄνθρωπος λευκός ἡ τὸ οὐκ ἐστιν ἄν-

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
ON INTERPRETATION, x

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.
ARISTOTLE

20 b θρωπός λευκός. ἀλλ' ἦ ετέρα μὲν ἐστὶν ἀπόφασις τοῦ ἐστὶν οὐκ ἄνθρωπος λευκός, ἦ ετέρα δὲ τοῦ ἐστὶ λευκός ἄνθρωπος, ὡστε ἔσται δύο μᾶς. ὅτι μὲν οὖν μετατιθημένου τοῦ ὄνοματος καὶ τοῦ όνοματος ἡ αὐτὴ γίνεται κατάφασις καὶ ἀπόφασις, δήλου.

XI. Τὸ δὲ ἐν κατὰ πολλῶν ἡ πολλὰ καθ' ἐνὸς καταφάναι ἡ ἀποφάναι, ἐὰν μὴ ἐν τι ἢ τὸ ἐκ τῶν πολλῶν δηλούμενον, οὐκ ἐστὶ κατάφασις μία οὐδὲ ἀπόφασις. λέγω δὲ ἐν οὐκ εἶναι ὅνομα ἐν ἀνθρώπος ἑώς ὑπεράνω καὶ ἐπὶ πολλῶν καὶ ἔτη καὶ ἐπιτευγμένον, ἀλλὰ καὶ ἐν τι γίνεται ἐκ τούτων ὡς ἐκ τοῦ λευκοῦ καὶ τοῦ ἄνθρωπος καὶ τοῦ βαδίζειν οὐκ ἐν. ὡστε οὐτ' ἐὰν ἐν τι κατὰ τούτων καταφής τις μία κατάφασις, ἀλλὰ φωνὴ μὲν μία καταφάσεις δὲ πολλαί, οὔτε ἐὰν καθ' ἐνὸς ταῦτα, ἀλλ' ὁμοίως πολλαί.

Εἰ οὖν ἡ ἐρωτησίς ἡ διαλεκτικὴ ἀποκρίσεως ἐστὶν αἰτησίς, ἡ τῆς προτάσεως ἡ θατέρου μορίου τῆς αντιφάσεως, ἡ δὲ προτάσεις αντιφάσεως μαζὸς μόριον, οὐκ ἂν εἰη ἀποκρίσις μία πρὸς ταῦτα. 25 οὐδὲ γὰρ ἡ ἐρωτησίς μία, οὔτ' ἐὰν ἢ ἅλθής. εἴρηται δὲ ἐν τοῖς ὸσκοῖς περὶ αὐτῶν. ἀμα δὲ δῆλον ὅτι οὐδὲ τὸ τὸ ἐστὶν ἐρωτησίς ἐστὶ διαλεκτικὴ. δει γὰρ δεδοσθαί ἐκ τῆς ἐρωτησίας ἑλέθαι ὁπότερον βούλεται τῆς αντιφασέως μόριον ἀποφήνασθαι. ἀλλὰ δεῖ τὸν ἑρωτώτα προσδιορίσαι 30 πότερον τόδε ἐστὶν ὁ ἄνθρωπος ἡ οὐ τούτο. ἑπεὶ δὲ τὰ μὲν κατηγορεῖται συντιθέμενα, 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 πάν κατηγορήμα τῶν χωρίς κατηγορομένων, 
τὰ δ' οὖ, τίς ἡ διαφορά; κατὰ γὰρ τοῦ ἄνθρωπον
ἀληθές εἰπεῖν καὶ χωρίς ἢ ἤρων καὶ χωρίς δίπους,
καὶ ταῦτα ὡς ἢ, καὶ ἄνθρωπον καὶ λευκόν, καὶ
tαῦθ᾽ ὡς ἢ. ἀλλ' οὐχί, εἰ σκυτεύς καὶ ἀγαθός,
καὶ σκυτεύς ἀγαθός. εἰ γάρ, διότι ἐκάτερον ἀληθές,
ἐναι δὲ καὶ τὸ συνάμφω, πολλὰ καὶ ἀτοπα ἔσται.
κατὰ γὰρ τοῦ ἄνθρωπον καὶ τὸ ἄνθρωπος ἀληθὲς
cαὶ τὸ λευκόν, ὡστε καὶ τὸ ἄπαν. πάλιν εἰ τὸ
40 λευκὸν αὐτό, καὶ τὸ ἄπαν, ὡστε ἔσται ἄνθρωπος
λευκὸς λευκός, καὶ τούτο εἰς ἄπειρον. καὶ πάλιν
μονικός λευκός βαδίζων· καὶ ταῦτα πολλάκις
πεπλεγμένα.ἐτι εἰ ὁ Σωκράτης Σωκράτης καὶ
ἀνθρωπός, καὶ Σωκράτης ἄνθρωπος. καὶ εἰ
6 ἄνθρωπος καὶ δίπους, καὶ ἄνθρωπος δίπους.
"Οτι μὲν οὖν εἰ τις ἀπλῶς φήσει τὰς συμπλοκὰς
γίνεσθαι, πολλὰ συμβαίνει λέγειν ἀτοπα, δῆλον·
ὀπως δὲ θετέοι, λέγομεν νῦν.
Τῶν δὴ κατηγορομένων, καὶ ἐφ' οἷς κατηγορεί
σθαι συμβαίνει, ὡσα μὲν λέγεται κατὰ συμβεβηκός
ἡ κατὰ τοῦ αὐτοῦ ή θάτερον κατὰ θατέρου, ταῦτα
οὐκ ἔσται ἢ, οἶον ἄνθρωπος λευκός ἐστι καὶ
μονικός, ἀλλ' οὐχ ἢ τὸ λευκὸν καὶ τὸ μονικὸν·
συμβεβηκότα γὰρ ἀμφώ τῷ αὐτῷ. οὖδ' εἰ τὸ
λευκὸν μονικὸν ἀληθὲς εἰπεῖν, ὀμοι ὡς οὐκ ἔσται
τὸ μονικὸν λευκὸν ἢ τι· κατὰ συμβεβηκός γὰρ

1 B. adds εἰς ἄπειρον.
2 καὶ Σωκράτης Σωκράτης ἄνθρωπος B.
3 καὶ ἄνθρωπος ἄνθρωπος 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.
ΑΡΙΣΤΟΤΕΛΕΣ

16 το μουσικόν λευκόν, ὡστε οὐκ ἔσται το λευκόν μουσικόν ἐν τι. διὸ οὖν ἐκυπεύσει ἀπλῶς ἀγαθός, ἀλλὰ ζῷον δῖπου, οὐ γὰρ κατὰ συμβεβηκός.

"Εστὶ οὖν ὁσα ἐνυπάρχει ἐν τῷ ἐτέρῳ. διὸ οὖν τὸ λευκόν πολλάκις οὕτω ὁ ἀνθρώπος ἀνθρώπος ζῷον ἐστὶν ἢ δῖπου. ἐνυπάρχει γὰρ ἐν τῷ ἀνθρώπῳ τὸ ζῷον καὶ τὸ δῖπον. ἀληθὲς δὲ ἐστὶν εἴπειν κατὰ τοῦ τινὸς καὶ ἀπλῶς, οἷον τὸν τινὰ ἀνθρώπον ἀνθρώπον ἢ τὸν τινὰ λευκόν ἀνθρώπον ἀνθρώπον λευκόν. οὐκ ἂεὶ δὲ, ἀλλ’ ὅταν μὲν ἐν τῷ προσκείμενῳ τῶν ἀντικειμένων τι ἐνυπάρχη ὥς ἐπεται ἀντίφασις, οὐκ ἀληθὲς ἀλλὰ ψεῦδος, οἷον τὸν τεθνέωτα ἀνθρώπου ἀνθρώπον εἰπεῖν, ὅταν δὲ μὴ ἐνυπάρχη, ἀληθὲς. ἢ ὅταν μὲν ἐνυπάρχῃ, ἂεὶ οὐκ ἀληθὲς, ὅσπερ "Ομηρὸς ἐστὶ τι, οἷον ποιητής. ὃς οὖν καὶ ἐστιν, ἢ οὐ; κατὰ συμβεβηκός γὰρ κατηγορεῖται τοῦ 'Ομηροῦ το ἐστὶν, ὅτι γὰρ ποιητῆς ἐστιν, ἀλλ’ οὐ καθ’ αὐτό, κατηγορεῖται κατὰ τοῦ 'Ομηροῦ τὸ ἐστὶν.

30 "Ὅστε ἐν ὁσαίς κατηγορίαις μήτε ἐναντιότης ἐνεστίν, ἐὰν λόγοι ἂντ’ ὑομάτων λέγονται, καὶ καθ’ ἐαυτὰ κατηγορηθαίται καὶ μὴ κατὰ συμβεβηκός,

1 ὁ σκυτεῖτι Β.

* Otherwise, in the sense of existence. For the word 'is' expresses 'exists' in addition to being the copula.
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.①

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

21 a ἐπὶ τούτων τὸ τί καὶ ἀπλῶς ἀληθὲς ἔσται εἰπεῖν, τὸ δὲ μὴ ὅν, οτι δοξαστον, οὐκ ἀληθὲς εἰπεῖν ὃν τί· δόξα γὰρ αὐτοῦ οὐκ ἔστιν ὅτι ἔστιν, ἀλλ' ὅτι οὐκ ἔστιν.

XII. Τούτων δὲ διωρισμένων σκεπτέον ὅπως ἔχουσιν αἱ ἀποφάσεις καὶ καταφάσεις πρὸς ἀληθῶς αἱ τοῦ δυνατον εἶναι καὶ μὴ δυνατον καὶ ἐνδεχόμενον καὶ μὴ ἐνδεχόμενον, καὶ περὶ τοῦ ἀδυνάτου τε καὶ ἀναγκαῖον· ἔχει γὰρ ἀπορίας τυαζ. εἰ γὰρ τῶν συμπλεκομένων αὕτη ἀλλήλαις ἀντίκεινται ἀντιφάσεις, ὅσαι κατὰ τὸ εἶναι καὶ μὴ εἶναι τάτη·

τοιτα, οἷον τοῦ εἶναι ἄνθρωπον ἀπόφασις τὸ μὴ εἶναι ἄνθρωπον, οὐ τὸ εἶναι μὴ ἄνθρωπον, καὶ τοῦ εἶναι λευκὸν ἄνθρωπον τὸ μὴ εἶναι λευκὸν ἄνθρωπον, ἀλλ' οὐ τὸ εἶναι μὴ λευκὸν ἄνθρωπον. εἰ γὰρ κατὰ παντὸς ἡ καταφάσις ἡ ἡ ἀπόφασις, τὸ ἤξυλον ἐσται ἀληθὲς εἰπεῖν εἶναι μὴ λευκὸν ἄνθρωπον. εἰ δὲ τούτο οὖτως, καὶ ὅσοις τὸ εἶναι μὴ προστίθεται, τὸ αὐτὸ ποιήσει τὸ ἀντί τοῦ εἶναι λεγόμενον, οἷον τοῦ ἄνθρωπος βαδίζει αὐτὸ τὸ οὐκ ἄνθρωπος βαδίζει ἀπόφασις ἐσται, ἀλλὰ τὸ οὐ βαδίζει ἄνθρωπος· οὐδὲν γὰρ διαφέρει εἰπεῖν ἄνθρωπον βαδίζειν ἡ ἄνθρωπον βαδίζοντα εἶναι. ὥστε εἰ οὖτως πανταχοῦ, καὶ τοῦ δυνατον εἶναι ἀπόφασις ἐσται 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 ἡ 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.'

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 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 δυνατόν. λόγος
15 δέ, ὅτι ἀπαν τὸ οὕτω δυνατὸν οὐκ ἀεὶ ἑνεργεῖ, ὥστε ὑπάρξει αὐτῷ καὶ ἡ ἀπόφασις δυνάται γὰρ καὶ μὴ βαδίζειν τὸ βαδιστικὸν καὶ μὴ ὀρᾶσθαι τὸ ὀρατὸν.

'Αλλὰ μὴν ἀδύνατον κατὰ τοῦ αὐτοῦ ἀληθεύσθαι τὰς ἀντικειμένας φάσεις: οὐκ ἄρα τοῦ δυνατοῦ εἶναι ἀπόφασις ἐστὶ τὸ δυνατὸν μὴ εἶναι. συμβαίνει γὰρ ἐκ τούτων ἢ τὸ αὐτὸ φάναι καὶ ἀποφάναι ἂμα καὶ κατὰ τοῦ αὐτοῦ, ἡ μὴ κατὰ τὸ εἶναι καὶ μὴ εἶναι τὰ προστιθέμενα γίνεσθαι φάσεις καὶ ἀποφάσεις. εἰ οὖν ἐκεῖνο ἀδύνατον, τοῦτ' ἂν εἰη αἱρετὸν.

'Εστιν ἄρα ἀπόφασις τοῦ δυνατοῦ εἶναι τὸ μὴ δυνατὸν εἶναι. ὁ δ' αὐτὸς λόγος καὶ περὶ τοῦ 20 ἐνδεχόμενον εἶναι καὶ γὰρ τούτον ἀπόφασις τὸ μὴ ενδεχόμενον εἶναι. καὶ ἐπὶ τῶν ἄλλων δὲ ὁμοιοτρόπως, οἶνον ἀναγκαῖον τε καὶ ἀδύνατον. γίνεται γὰρ ὅσπερ ἐπὶ ἐκείνων τὸ εἶναι καὶ τὸ μὴ εἶναι προσθέσεις, τὰ δὲ ὑποκείμενα πράγματα τὸ μὲν λευκὸν τὸ δ' άιθρωπὸς, οὕτως ἑνταῦθα τὸ μὲν εἶναι καὶ μὴ εἶναι ὡς ὑποκείμενον γίνεται, τὸ 25 δὲ δύνασθαι καὶ τὸ ενδεχομένον προσθέσεις δι' ὁρίζονται, ὅσπερ ἐπὶ ἐκείνων τὸ εἶναι καὶ μὴ εἶναι τὸ ἅλθες καὶ τὸ ἰσχὺς, ὁμοίως αὐτὰ ἐπὶ τοῦ εἶναι δυνάτον καὶ εἶναι οὐ δυνάτον.

Τοῦ δὲ δυνατοῦ μὴ εἶναι ἀπόφασις οὐ τὸ οὐ δυνατὸν εἶναι, ἀλλὰ τὸ οὐ δυνατὸν μὴ εἶναι, καὶ 30 τοῦ δυνατοῦ εἶναι οὐ τὸ δυνατὸν μὴ εἶναι, ἀλλὰ τὸ μὴ δυνατὸν εἶναι. διὸ καὶ ἀκολουθεῖν ἄν δοξεῖαν

* Grote has called these ‘intermittent realities’ (Aristotle, p. 128).
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'
ARISTOTLE

21 b ἀλλήλαις αἱ τοῦ δυνατὸν εἶναι καὶ δυνατὸν μὴ εἶναι· τὸ γὰρ αὐτὸ δυνατὸν εἶναι καὶ μὴ εἶναι· οὐ γὰρ ἀντιφάσεις ἀλλήλων αἱ τοιαύται, τὸ δυνατὸν εἶναι καὶ δυνατὸν μὴ εἶναι. ἀλλὰ τὸ δυνατὸν εἶναι καὶ μὴ δυνατὸν εἶναι οὐδέποτε ἐπὶ τοῦ αὐτοῦ ἀμα ἀληθεύονται· ἀντίκεισται γὰρ. οὐδὲ γε τὸ δυνατὸν μὴ εἶναι καὶ οὐ δυνατὸν μὴ εἶναι οὐδέποτε ἀμα ἐπὶ τοῦ αὐτοῦ ἀληθεύονται.

"Ομοίως δὲ καὶ τοῦ ἀναγκαίου εἶναι ἀπόφασις οὐ τὸ ἀναγκαῖον μὴ εἶναι, ἀλλὰ τὸ μὴ ἀναγκαῖον εἶναι· τοῦ δὲ ἀναγκαίου μὴ εἶναι τὸ μὴ ἀναγκαῖον μὴ εἶναι. καὶ τοῦ ἀδύνατον εἶναι οὐ τὸ ἀδύνατον μὴ εἶναι, ἀλλὰ τὸ μὴ ἀδύνατον εἶναι· τοῦ δὲ ἀδύνατον μὴ εἶναι τὸ οὐκ ἀδύνατον μὴ εἶναι.

Καὶ καθόλου δὲ, ὠσπερ εἰρηται, τὸ μὲν εἶναι καὶ μὴ εἶναι δεί τιθέναι ὡς τὰ ὑποκείμενα, κατά-φασιν δὲ καὶ ἀπόφασιν ταῦτα ποιοῦντα πρὸς τὸ εἶναι καὶ μὴ εἶναι συντάττειν. καὶ ταῦτα οἴεσθαι χρῆ εἶναι τὰς ἀντικειμένας φάσεις, δυνατῶν—οὐ δυνατῶν, ἐνδεχόμενοι—οὐκ ἐνδεχόμενοι, ἀδύνατον—οὐκ ἀδύνατον, ἀναγκαῖον—οὐκ ἀναγκαῖον, ἀληθές—οὐκ ἀληθές.

XIII. Καὶ αἱ ἀκολουθήσεις δὲ κατὰ λόγον γίνον-
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:—

<table>
<thead>
<tr>
<th>It may be.</th>
<th>It cannot be.</th>
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<tbody>
<tr>
<td>It is contingent.</td>
<td>It is not contingent.</td>
</tr>
<tr>
<td>It is impossible.</td>
<td>It is not impossible.</td>
</tr>
<tr>
<td>It is necessary.</td>
<td>It is not necessary.</td>
</tr>
<tr>
<td>It is true.</td>
<td>It is not true.</td>
</tr>
</tbody>
</table>

XIII. From these affirmations and negations set out in the foregoing manner certain consequences logically follow.
15 ταί οὖν τιθεμένοις: τῷ μὲν γὰρ δυνατὸν εἶναι τὸ ἐνδεχόμενον εἶναι, καὶ τούτῳ ἑκεῖνῳ 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 ἀ-
δύνατον μὴ εἶναι, τῷ δὲ μὴ δυνατὸν εἶναι καὶ μὴ 
20 ἐνδεχόμενον εἶναι τὸ ἀναγκαῖον μὴ εἶναι καὶ τὸ ἀδύνατον εἶναι, τῷ δὲ μὴ δυνατὸν μὴ εἶναι καὶ μὴ ἐνδεχόμενον μὴ εἶναι τὸ ἀναγκαῖον εἶναι καὶ τὸ ἀδύνατον μὴ εἶναι. Θεωρεῖσθω δὲ ἐκ τῆς ὑπο-
γραφῆς 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

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

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.
To μὲν οὐν 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, ὑπόειν. φανερὸν δὴ ὅτι οὐχ οὕτως ἔχει, ἀλλ' αἱ ἐναντίαι ἔπονται· αἱ δ' ἀντιφάσεις χωρίς. οὐ γὰρ ἐστιν ἀπόφασις τοῦ ἀνάγκη μὴ εἶναι τὸ οὐκ ἀνάγκη εἶναι· ἐνδέχεται γὰρ ἀληθεύεσθαι ἐπὶ τοῦ αὐτοῦ ἀμφοτέρας· τὸ γὰρ ἀναγκαῖον μὴ εἶναι οὐκ ἀναγκαῖον εἶναι. αὕτιον δὲ τοῦ μὴ ἀκολουθεῖν τὸ ἀναγκαῖον ὁμοίως ἢ τοῖς έτέροις, ὅτι ἐναντίως τὸ ἀδύνατον τῷ ἀναγκαίῳ ἀποδίδοται, τὸ αὐτὸ δυνάμενον. εἰ γὰρ ἀδύνατον εἶναι, ἀναγκαῖον τούτῳ οὐκ εἶναι ἀλλὰ μὴ εἶναι· εἰ δὲ ἀδύνατον μὴ εἶναι, τούτῳ ἀνάγκη εἶναι· ὥστε εἰ ἑκεῖνα ὁμοίως τῷ δυνατῷ καὶ μὴ, ταύτα εξ ἐναντίας, ἔπει οὐ σημαίνει γε ταὐτὸν τὸ τε ἀναγκαῖον καὶ τὸ ἀδύνατον, ἀλλ' ὅσπερ εἰρηται, ἀντεστραμμένως.

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Now, 'impossible that it should be,' 'not impos-
sible 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 'im-
possible'); '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
ture 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 deal-
ing? The answer will be found in the fact that
when used with a contrary subject, to predicate im-
possibility amounts to affirming necessity. Suppos-
ing, 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 predi-
cating 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.
ARISTOTLE

22 b Ὅ το άδύνατον οὔτως κείσθαι τὰς τού ἀναγκαῖον ἀντιφάσεις; τὸ μὲν γὰρ ἀναγκαῖον εἶναι δυνατὸν εἶναι: εἰ γὰρ μὴ, ἡ ἀπόφασις ἀκολουθήσει ἀνάγκη γὰρ ἡ φάναι ἡ ἀποφάναι ὡστ' εἰ μὴ δυνατὸν εἶναι, ἀδύνατον εἶναι: ἀδύνατον ἀρα εἰναι τὸ ἀναγκαῖον εἶναι, ὅπερ ἄτοπον. ἄλλα μὴν τῷ γε δυνατὸν εἶναι τὸ οὐκ ἀδύνατον εἰναι ἀκολουθεῖ, τοῦτο δὲ τῷ μὴ ἀναγκαῖον εἰναι: ὡστε συμβαίνει τὸ ἀναγκαῖον εἰναι μὴ ἀναγκαῖον εἰναι, ὅπερ ἄτοπον. ἄλλα μὴν οὔτε τὸ ἀναγκαῖον εἰναι ἀκολουθεῖ τῷ δυνατὸν εἰναι, οὔτε τὸ ἀναγκαῖον μὴ εἰναι: τῷ μὲν γὰρ ἀμφω ἐνδέχεται συμβαίνειν, τούτων δὲ ὅποτερον ἂν ἀληθὲς ἢ, οὐκέτι ἔσται ἐκεῖνα ἀληθῆ. ἀμα γὰρ δυνατὸν εἰναι καὶ μὴ εἰναι: εἰ δ' ἀνάγκη εἰναι ἡ μὴ εἰναι, οὐκ ἔσται δυνατὸν ἀμφω. λείπεται τοῖνυν τὸ οὐκ ἀναγκαῖον μὴ εἰναι ἀκολουθεῖν τῷ δυνατὸν εἰναι. τοῦτο γὰρ ἀληθὲς καὶ κατὰ τοῦ ἀναγκαίου εἰναι. καὶ γὰρ αὐτὴ γίνεται ἀντιφάσις τῇ ἐπομενῇ τῷ οὐ δυνατὸν εἰναι: εκεῖνῳ γὰρ ἀκολουθεῖ τὸ ἁδύνατον εἰναι καὶ ἀναγκαῖον μὴ εἰναι, οὐ ἡ ἀπόφασις τὸ οὐκ ἀναγκαῖον μὴ εἰναι. ἀκολουθοῦσι τε ἀρα καὶ αὕται αἱ ἀντιφάσεις κατὰ τὸν εἰρημένον τρόπον, καὶ οὔδεν ἁδύνατον συμβαίνει τιθεμένων οὕτως.

"Απορήσεις δ' ἂν τις εἰ τῷ ἀναγκαίον εἰναι τὸ
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
22 b
30 δυνατὸν εἶναι ἐπεταί. εἰ τε γὰρ μὴ ἐπεταί, ἢ ἀντίφασις ἀκολουθήσει, τὸ μὴ δυνατὸν εἶναι καὶ εἰ τις ταύτην μὴ φησεῖν εἶναι ἀντίφασιν, ἀνάγκη λέγειν τὸ δυνατὸν μὴ εἶναι ἀπερ ἀμφω ψευδῇ κατὰ τοῦ ἀναγκαίου εἶναι. ἀλλὰ μὴν πάλιν τὸ αὐτὸ εἶναι δοκεῖ δυνατὸν τέμνεσθαι καὶ μὴ τέμνεσθαι καὶ εἶναι καὶ μὴ εἶναι, ὅστε ἔσται τὸ ἀναγκαίον εἶναι ἐνδεχόμενον μὴ εἶναι τοῦτο δὲ ψεύδος. φανερὸν δὴ ὅτι οὐ πάν τὸ δυνατὸν ἢ εἶναι ἡ βαδίζειν καὶ τὰ ἀντικείμενα δύναται, ἀλλὰ ἔστιν ἐφ' ὃν οὐκ ἀληθές, πρῶτον μὲν ἐπὶ τῶν μὴ κατὰ λόγον δυνάτων, οἷον τὸ πῦρ θερμαινικὸν καὶ ἔχει

23 a δύναμιν ἀλογον. αἱ μὲν οὐν μετὰ λόγου δυνάμεις αἱ αὐταὶ πλειόνων καὶ τῶν ἐναυτῶν, αἱ δ' ἀλογοὶ οὐ πᾶσαι, ἀλλ' ὀσπέρ εἰρηται, τὸ πῦρ οὐ δυνατὸν θερμαίνειν καὶ μὴ, οὐδ' ὡσα ἄλλα ἐνεργεῖ ἀεί. ἔνα μέντοι δύναται καὶ τῶν κατὰ τὰς ἀλόγους δυνάμεις ἁμα τὰ ἀντικείμενα δέχασθαι. ἀλλὰ τοῦτο μὲν τούτου χάριν εἰρηται, ὅτι οὐ πᾶσα δύναμις τῶν ἀντικειμένων, οὐδ' ὡσα λέγονται κατὰ τὸ αὐτὸ εἶδος.

"Εναὶ δὲ δυνάμεις ὀμόνυμοι εἰσιν. τὸ γὰρ δυνατὸν οὐχ ἀπλῶς λέγεται, ἀλλὰ τὸ μὲν ὦτι ἀληθὲς ως ἐνεργεία ὁν, οἷον δυνατὸν βαδίζειν ὦτι βαδίζει, καὶ ὅλως δυνατόν εἶναι ὦτι ὄνη ἔστι κατ' ἐνεργείαν δ' λέγεται εἶναι δυνατόν, τὸ δὲ ὦτι ἐνεργήσειν ἃν, οἷον δυνατὸν εἶναι βαδίζειν ὦτι βαδίσειν ἃν. καὶ αὕτη μὲν ἐπὶ τοῖς κυητοῖς ἔστι

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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
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 potentiality we cannot affirm of the necessary in its unqualified 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 possibility, 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 affirmative statement is contrary to a negative statement or contrary to a second affirmation. Has the proposition 'every man is just' for its contrary 'no man is Generated and perishable substances in the sublunary world.

Such as the largest number, the least magnitude and so on. These are never realized, though conceivable.
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 Καλλίας non est iustus and Καλλίας 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.
ON INTERPRETATION, xiv

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

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 inhere, 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.\(^a\) 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 predicating 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-
23 β ἐστὶ καὶ γὰρ ὅτι οὐκ ἀγαθὸν ἀνάγκη ἵσως ὑπολαμβάνειν τὸν αὐτὸν.

'Ετι δὲ, εἰ καὶ ἐπὶ τῶν ἄλλων ὁμοίως δεῖ ἔχειν, καὶ ταύτῃ ἃν δόξει καλῶς εἰρήσθαι: ἢ γὰρ πανταχοῦ τὸ τῆς αὐτοφάσεως ὁ οὐδαμοῦ. ὅσοις δὲ ἡ ἑστὶν ἐναντία, περὶ τούτων ἑστὶ μὲν ψευδῆς ἡ τῇ ἀληθεία ἀντικειμένη, οἷον ὁ τῶν ἀνθρωπον οὐκ ἀνθρωπον οἴμενον διέψευσται. εἰ οὖν αὐταὶ ἐναντίαι, καὶ αἱ ἄλλαι αἱ τῆς αὐτοφάσεως.

'Ετι ὁμοίως ἔχει ἡ τοῦ ἀγαθοῦ ὅτι ἀγαθὸν καί ἡ τοῦ μὴ ἀγαθοῦ ὅτι οὐκ ἀγαθὸν, καὶ πρὸς ταύτας ἡ τοῦ ἀγαθοῦ ὅτι οὐκ ἀγαθὸν καί ἡ τοῦ μὴ ἀγαθοῦ ἐστὶ ἀγαθὸν. τῇ οὖν τοῦ μὴ ἀγαθοῦ ὅτι οὐκ ἀγαθὸν ἀληθείᾳ οὐσία δόξῃ τίς ἃν εἰη ἡ ἐναντία; οὐ γὰρ δὴ ἡ λέγουσα ὅτι κακὸν· ἀμα γὰρ ἃν ποτὲ εἰη ἀληθῆς, οὐδὲποτε δὲ ἀληθῆς ἀληθεὶ ἐναντία· ἐστὶ γὰρ τι μὴ ἀγαθὸν κακὸν, ὡστε ἐνδεχόται ἀμα ἀληθεὶς εἶναι. οὔτ' αὐτῇ ἢ τοι οὐ κακόν· ἀληθῆς γὰρ καὶ αὐτῇ. ἀμα γὰρ καὶ ταύτα ἃν εἰη. λειπεταί οὖν τῇ τοῦ μὴ ἀγαθοῦ ὅτι οὐκ ἀγαθὸν ἐναντία τῆς τοῦ μὴ ἀγαθοῦ ὅτι ἀγαθὸν· ψευδῆς γὰρ αὐτῇ. ὡστε καὶ ἡ τοῦ ἀγαθοῦ ὅτι οὐκ ἀγαθὸν τῇ τοῦ ἀγαθοῦ ὅτι ἀγαθὸν.

Φανερὸν δὲ ὅτι οὐδὲν διοίσει οὔτ' ἃν καθόλου τιθῶμεν τὴν κατάφασιν· ἢ γὰρ καθόλου ἀπόφασις ἐναντία ἐσται, οἷον τῇ δόξῃ τῇ δόξαζοσθῇ ὅτι πᾶν ὁ ἃν ἢ ἀγαθὸν ἀγαθὸν ἐστὶν ἡ ὅτι οὐδὲν τῶν ἀγαθῶν 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
ARISTOTLE.

άγαθόν. Ἦ γὰρ τοῦ ἀγαθοῦ ὅτι ἀγαθόν, εἰ καθόλου
tὸ ἀγαθόν, ἥ αὐτὴ ἐστὶ τῇ ὅτι ὁ ἁν ἢ ἀγαθὸν
doξαζοῦσῃ ὅτι ἀγαθὸν· τούτῳ δὲ οὐδὲν διαφέρει
tοῦ ὅτι πᾶν ὁ ἢ ἀγαθὸν ἀγαθὸν ἐστὶν. ὅμως

24 b δὲ καὶ ἐπὶ τοῦ μὴ ἀγαθοῦ.

"Ωστε εἰπὲν ἐπὶ δόξης οὕτως ἔχει, εἰσὶ δὲ αἱ ἐν
tῇ φωνῇ καταφάσεις καὶ ἀποφάσεις σύμβολα τῶν
eν τῇ ψυχῇ, δὴν ὅτι καὶ καταφάσει ἐναντία
μὲν ἀποφάσις ἡ περὶ τοῦ αὐτοῦ καθόλου, οἷον τῇ
ὅτι πᾶν ἀγαθὸν ἀγαθὸν ἡ ὅτι πᾶς ἄνθρωπος

5 ἀγαθὸς ἡ ὅτι οὐδὲν ἡ οὐδείς, ἀντιφατικῶς δὲ ὅτι
ἡ οὐ πᾶν ἡ οὐ πᾶς. φανερὸν δὲ ὅτι καὶ ἀλήθη
ἀληθεῖ οὐκ ἐνδέχεται ἐναντίαν εἰναι οὔτε δόξαι
οὔτε ἀντιφασιν. ἑναντίαι μὲν γὰρ αἱ περὶ τὰ
ἀντικείμενα, περὶ ταῦτα δὲ ἐνδέχεται ἀληθεύειν
tὸν αὐτὸν· ἁμα δὲ οὐκ ἐνδέχεται τὰ ἑναντία ὑπ-

1 ἀντιφασι B.

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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.

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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 *Analytik*cs is correct, and that *Topics* VIII and IX presuppose the *Analytik*. 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
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out; but his results must as yet be regarded as conjectural.

II. The Theory of Syllogism in the Prior Analytics

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 ὁρός (bound or limit), ἄκρον (extreme) and μέσον (middle) to describe the terms, and of διάστημα (interval) as an alternative to πρώτασις 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 184
of syllogism (cf. An. Pr. I. xxiv and xxxiii). The rest
of the chapter gives the rules for conversion of asser-
toric 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 ex-
treme 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

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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 con-
structive and destructive proof.
The second section of Book I begins with an ex-
planation, 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 argu-
ments to syllogistic form in the several figures.
In chs. xxxiii-xlIII we find a series of warnings
against errors in selecting or enunciating terms and
premisses. Ch. xlv 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 state-
ments.
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 reci-
procal 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 impor-
sibile*, and ch. xv considers the question of drawing
conclusions from contrary and contradictory premisses. 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
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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
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is this: why is it that Aristotle, after expressly admitting 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 addition. I cannot quite follow his theory of the development 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 valueless 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 conceptions together are exhaustive.

It follows that any satisfactory threefold system must depend upon a subjective distinction of modality. A judgement is apodeictic if it rests on demonstrable grounds, assertoric if the fact is appre-
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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 veetus 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
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 premisses 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 premisses 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.
Ι. Πρώτον εἶπείν περὶ τί καὶ τίνος ἦστιν ἡ σκέψις, ὅτι περὶ ἀπόδειξιν καὶ ἔπιστήμης ἀποδεικτικῆς· εἶτα διορίσαι τί ἦστι πρότασις καὶ τί ὁρὸς καὶ τί συλλογισμὸς, καὶ ποῖος τέλειος καὶ ποῖος ἄτελῆς, μετὰ δὲ ταῦτα τί τὸ ἐν ὅλῳ εἶναι ἢ μὴ εἶναι τόδε 15 τῶδε, καὶ τί λέγομεν τὸ κατὰ παντὸς ἢ μηδενὸς κατηγορεῖσθαι.

Πρότασις μὲν οὖν ἦστι λόγος καταφατικὸς ἢ ἀποφατικὸς τινὸς κατὰ τίνος· οὗτος δὲ ἡ καθόλου ἢ ἐν μέρει ἡ ἀδιόριστος. λέγω δὲ καθόλου μὲν τὸ παντὶ ἡ μηδενὶ ύπάρχειν, ἐν μέρει δὲ τὸ τινὶ ἡ μὴ 20 τινὶ ἡ μὴ παντὶ ύπάρχειν, ἀδιόριστον δὲ τὸ ύπάρχειν ἡ μὴ ύπάρχειν ἄνευ τοῦ καθόλου ἡ κατὰ μέρος, οἷον τὸ τῶν ἐναντίων εἶναι τὴν αὐτὴν ἐπιστήμην ἡ τὸ τὴν ἡδονὴν μὴ εἶναι ἀγαθὸν.

Διαφέρει δὲ ἡ ἀποδεικτικὴ πρότασις τῆς διαλεκτικῆς, ὅτι ἡ μὲν ἀποδεικτικὴ λῆψις θατέρου μορίου τῆς ἀντιφάσεως ἦστιν (οὐ γὰρ ἐρωτά ἀλλὰ

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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...
λαμβάνει ὁ ἀποδεικνύων, ἢ δὲ διαλεκτικὴ ἐρώτησις ἀντιφάσεως ἐστὶν. οὕτως δὲ διοίσει πρὸς τὸ γενέσθαι τὸν ἐκατέρω συλλογισμὸν καὶ γὰρ ὁ ἀποδεικνύων καὶ ὁ ἐρωτῶν συλλογίζεται λαβὼν 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 ἀληθῆ ἢ καὶ διὰ τῶν ἐξ ἀρχῆς ὑποθέσεων εἰλημμένη, διαλεκτικὴ δὲ πυθανομένῳ μὲν ἐρώτησις ἀντιφάσεως, συλλογιζομένῳ δὲ λήφθει τοῦ φαινομένου καὶ ἐνδόξου, καθάπερ ἐν τοῖς Τοπικοῖς εἰρηταί.

Τῷ μὲν οὖν ἔστι πρότασις, καὶ τὶ διαφέρει συλλογιστικὴ καὶ ἀποδεικτικὴ καὶ διαλεκτικὴ, δι’ ἀκριβείας μὲν ἐν τοῖς ἐπομενοῖς ῶθησαται, πρὸς δὲ τὴν παροῦσαν χρείαν ἵκανως ἡμῖν διωρίσθω τὰ νῦν.

"Ορον δὲ καλῶ εἰς διαλύεται ἡ πρότασις, οἷον τὸ τε κατηγορούμενον καὶ τὸ καθ’ οὗ κατηγορείται, ἡ προστιθεμένου ἡ διαιρομένου τοῦ εἶναι καὶ μὴ εἶναι.

Συλλογισμὸς δὲ ἐστὶ λόγος ἐν ὧδε θεόντων τινῶν ἐτερὸν τὶ 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. 1. ix.; Topics, 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.
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

\[ a \text{ } b \text{ } c \text{ } d \]

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

\[ d \text{ } \text{Demonstrative in An. Post. I. vi.-ix.; dialectical in Topics.} \]
24 b  συμβαίνειν, τὸ δὲ διὰ ταῦτα συμβαίνει τὸ μηδενὸς ἐξωθεὶν ὅρου προσδεῖν πρὸς τὸ γενέσθαι τὸ ἀναγκαῖον.
Τέλειον μὲν οὖν καλῶ συλλογισμὸν τὸν μηδενὸς ἀλλον προσδεόμενον παρὰ τὰ εἰλημένα πρὸς τὸ 25 φαίναι τὸ ἀναγκαῖον, ἀτελῆ δὲ τὸν προσδεόμενον ἢ ἐνὸς ἢ πλειόνων, ἢ ἐστὶ μὲν ἀναγκαῖα διὰ τῶν υποκειμένων ὅρων, οὐ μὴν εἰληπται διὰ προτάσεων.
Τὸ δὲ ἐν ὅλῳ εἶναι ἔτερω καὶ τὸ κατὰ παντὸς κατηγορεῖσθαι θατέρου θάτερον ταῦτον ἑστιν. λέγομεν δὲ τὸ κατὰ παντὸς κατηγορεῖσθαι 30 ὅταν μηδὲν ἢ λαβεῖν τῶν τοῦ υποκειμένου καθ' οὐθατερον οὐ λεχθήσεται καὶ τὸ κατὰ μηδενὸς ὁσαύτως.
25 a  II. Ἐπεὶ δὲ πᾶσα πρότασις ἑστιν ἡ τοῦ υπάρχειν ἡ τοῦ ἐς ἀνάγκης υπάρχειν ἡ τοῦ ἐνδεχεσθαι υπάρχειν, τούτων δὲ αἱ μὲν καταφατικαί 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 υπάρχειν καθόλου στερητικὴν ἀνάγκη τοῖς ὅροις ἀντι- στρέφειν, οἷον εἰ μηδεμίᾳ ἑδονῇ ἀγαθὸν, οὐδ' ἀγαθὸν οὐδὲν ἔσται ἑδονή· τὴν δὲ κατηγορικὴν ἀντι- στρέψεων μὲν ἀναγκαῖον, οὐ μὴν καθόλου ἄλλ' ἐν μέρει, οἷον εἰ πᾶσα ἑδονὴ ἀγαθὸν, καὶ ἀγαθὸν 10 τι εἶναι ἑδονήν· τῶν δὲ ἐν μέρει τὴν μὲν κατα- φατικὴν ἀντιστρέφειν ἀνάγκη κατὰ μέρος (εἰ γὰρ ἑδονή τις ἀγαθὸν, καὶ ἀγαθὸν τι ἔσται ἑδονή), 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

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

25 a
dę στερητικὴν οὐκ ἀναγκαῖον· οὐ γὰρ εἰ ἀνθρωπὸς ἦν ὑπάρχει τινὶ ζῷῳ, καὶ ζῷον οὐχ ὑπάρχει τινὶ ἀνθρώπῳ.

Πρῶτον μὲν οὖν ἔστω στερητικὴ καθόλου ἡ
15 ἉΒ προτάσεις. εἰ οὖν μηδενὶ τῶν Ἑ τὸ Α ὑπάρχει, οὐδὲ τῶν Α οὐδεὶς ὑπάρξει τὸ Β. εἰ γὰρ τινὶ, οὖν τῷ Γ, οὐκ ἀληθὲς ἦσται τὸ μηδενὶ τῶν Β τὸ Α ὑπάρχειν· τὸ γὰρ Γ τῶν Β τί ἐστιν. εἰ δὲ παντὶ τὸ Α τῷ Β, καὶ τὸ Β τινὶ τῷ Α ὑπάρχει. εἰ γὰρ μηδενὶ, οὐδὲ τὸ Α οὐδεὶς τῷ Β ὑπάρξει· ἀλλ' ὑπέκειτο παντὶ ὑπάρχειν. ὅμοιως δὲ καὶ εἰ κατὰ μέρος ἐστὶν ἡ προτάσεις. εἰ γὰρ τὸ Α τινὶ τῶν Β, καὶ τὸ Β τινὶ τῶν Α ἀνάγκη ὑπάρχειν· εἰ γὰρ μηδενὶ, οὐδὲ τὸ Α οὐδεὶς τῶν Β. εἰ δὲ γε τὸ Α τινὶ τῶν Β μὴ ὑπάρξει, οὐκ ἀνάγκη καὶ τὸ Β τινὶ τῷ Α μὴ ὑπάρχειν, οἶνον εἰ τὸ μὲν Β ἐστὶ
20 ζῷον τὸ δὲ Α ἀνθρωπὸς· ἀνθρωπὸς μὲν γὰρ οὐ παντὶ ζῷῳ, ζῷον δὲ παντὶ ἀνθρώπῳ ὑπάρχει.

III. Τὸν αὐτὸν δὲ τρόπον ἔξει καὶ ἐπὶ τῶν ἀναγκαίων προτάσεων· ἡ μὲν γὰρ καθόλου στερητικὴ καθόλου ἀντιστρέφει, τῶν δὲ καταφατικῶν ἔκατέρα
30 κατὰ μέρος. εἰ μὲν γὰρ ἀνάγκη τὸ Α τῷ Β μηδενὶ ὑπάρχειν, ἀνάγκη καὶ τὸ Β τῷ Α μηδενὶ ὑπάρχειν· εἰ γὰρ τινὶ ἐνδέχεται, καὶ τὸ Α τῷ Β τινὶ ἐνδέχοιτο ἂν. εἰ δὲ ἐξ ἀνάγκης τὸ Α παντὶ ἦ τινὶ τῷ Β ὑπάρχει, καὶ τὸ Β τινὶ τῷ Α ἀνάγκη ὑπάρχειν· εἰ γὰρ μὴ ἀνάγκη, οὖν ἂν τὸ Α τινὶ τῶν Β ἐξ ἀνάγκης ὑπάρχοι. τὸ δ' ἐν μέρει στερητικὸν οὐκ ἀντιστρέφει διὰ τὴν αὐτὴν αἰτίαν δι' ἦν καὶ πρότερον ἔφαμεν.

1 τῷ C', Bekker.
2 τῶν Β ὑπάρξει codd. dett.
PRIOR ANALYTICS, I. ii–iii

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.

a Sc. of the assertoric type.
b It must be noted that in the Aristotelian formula the predicate regularly comes before the subject. The modern equivalent is 'No B is A.'
c Ch. ii. ad fin.
'Επὶ δὲ τῶν ἐνδεχόμενων, ἐπειδὴ πολλαχῶς λέγεται τὸ ἐνδεχόμενον (καὶ γὰρ τὸ ἀναγκαῖον καὶ τὸ μὴ ἀναγκαῖον καὶ τὸ δυνατὸν ἐνδεχόμενον), ἐν μὲν τοῖς καταφατικοῖς ὀμοιῶς ἔξει κατὰ τὴν ἀντιστροφὴν ἐν ἀπασίᾳ: εἰ γὰρ τὸ Α παντὶ ἦ τινὶ τῷ Β ἐνδεχεται, καὶ τὸ Β τινὶ τῷ Α ἐνδεχομεν ἂν (εἰ γὰρ μηδενί, οὐδὲ ἂν τὸ Α οὔδεν τῷ Β· δεδεικται γὰρ τοῦτο πρῶτον): ἐν δὲ τοῖς ἀποφασικοῖς οὐχ ὡσανως, ἀλλ’ ὡσα μὲν ἐνδεχομεν βαθη λέγεται ἦ τῷ ἐξ ἀνάγκης υπάρχειν ἦ τῷ μὴ ἐξ ἀνάγκης υπάρχειν, ὀμοιῶς· οἶον εἰ τις φαίη τὸν ἀνθρωπὸν ἐνδεχομεν μὴ εἰναι ἰππόν ἢ τὸ λευκὸν μηδενὶ ἰματιῶν υπάρχειν τούτων γὰρ τὸ μὲν ἐξ ἀνάγκης οὐχ υπάρχει, τὸ δὲ οὐκ ἀνάγκη υπάρχει, καὶ ὀμοιῶς ἀντιστρέφει ἡ πρότασις· εἰ γὰρ ἐν· ἐνδεχεται μηδενὶ ἀνθρωπω ἰππον, καὶ ἀνθρωπον ἐγχωρεὶ μηδενὶ ἰππω· καὶ εἰ τὸ λευκὸν ἐγχωρεὶ μηδενὶ ἰματιῶν· καὶ τὸ ἰματιων ἐγχωρεὶ μηδενὶ λευκω· εἰ γὰρ τινὶ ἀνάγκη, καὶ τὸ λευκὸν ἰματιων τινι ἐσται ἐξ ἀνάγκης· τούτο γὰρ δεδεικται πρῶτον· ὀμοιῶς δέ καὶ ἐπὶ τῆς ἐν μέρει ἀποφασικῆς· ὡσά δὲ τῷ ἔστι πολὺ καὶ τῷ πεφυκέναι λέγεται ἐνδεχομεν· καθ’ ὅν τρόπον διορίζομεν τὸ ἐνδεχόμενον, οὐχ ὀμοιώς ἔξει ἐν ταῖς στερητικαις ἀντιστροφαις, ἀλλ’ ἢ μὲν καθόλου στερητική πρότασις

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

* 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.
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

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οὐκ ἀντιστρέφει, ἢ δὲ ἐν μέρει ἀντιστρέφει. τούτο δὲ ἐσται φανερὸν ὅταν περὶ τοῦ ἐνδεχομένου λέγωμεν.

Νῦν δὲ τοσοῦτον ἦμιν ἐστῳ πρὸς τοῖς εἰρημένοις δήλων, ὅτι τὸ εἰδέχεσθαι μηδενὶ ἦ τινι μὴ ὑπάρχειν καταφατικὸν ἔχει τὸ σχῆμα· τὸ γὰρ εἰδέχεται τῷ ἐστὶν ὁμοίως τάττεται, τὸ δὲ ἐστὶν, οἷς ἀν προσκατηγορήται, κατάφασιν ἀεὶ ποιεῖ καὶ πάντως, οἶον τὸ ἐστὶν οὐκ ἀγαθὸν ἢ ἐστὶν οὐ λευκὸν ἢ ἀπλῶς τὸ ἐστὶν οὐ τοῦτο. δειχθῆσεται δὲ καὶ τοῦτο διὰ τῶν ἐπομένων. κατὰ δὲ τὰς ἀντιστροφὰς ὁμοίως ἐξουσι ταῖς ἄλλαις.

IV. Διωρισμένων δὲ τούτων λέγομεν ἡδη διὰ τίνων καὶ πότε καὶ πῶς γίγνεται πάς συλλογισμός· ύστερον δὲ λεκτέων περὶ ἀποδείξεως, πρότερον δὲ περὶ συλλογισμοῦ λεκτέων ἡ περὶ ἀποδείξεως διὰ τὸ καθόλου μάλλον εἶναι τὸν συλλογισμὸν ἢ μὲν γὰρ ἀπόδειξις συλλογισμὸς τις, ὁ συλλογισμὸς δὲ οὐ πᾶς ἀπόδειξις.

Ὅταν οὖν ὁροὶ τρεῖς οὕτως ἔχωσι πρὸς ἄλληλους ὡστε τὸν ἔσχατον ἐν ὅλῳ εἶναι τῷ μέσῳ καὶ τὸν μέσον ἐν ὅλῳ τῷ πρῶτῳ ἢ εἶναι ἢ μὴ εἶναι, ἀνάγκη τῶν ἀκρών εἶναι συλλογισμὸν τέλειων. καλὼ δὲ μέσον μὲν ὁ καὶ αὐτὸ ἐν ἄλλῳ καὶ ἄλλῳ ἐν τοῖς ἐστίν, ὁ καὶ τῇ θέσει γίγνεται μέσουν ἀκρα δὲ τὸ αὐτὸ τε ἐν ἄλλῳ ὁν καὶ ἐν ὁ ἄλλῳ ἐστίν. εἰ γὰρ τὸ Α κατὰ παντὸς τοῦ Β καὶ τὸ Β κατὰ παντὸς τοῦ Γ, ἀνάγκη τὸ Α κατὰ παντὸς τοῦ Γ κατηγορεῖσθαι· πρότερον γὰρ εἰρηται πῶς

• Chs. xiii. ff.  
• Ch. xlvi.  
* In the Posterior Analytics.  
4 24 b 28.

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convert, whereas the particular negative does. This will become clear when we discuss the possible.\(^a\)

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.\(^b\) 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.\(^c\) 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 \(^d\) what we mean by saying that one term

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\(^a\) PRIOR ANALYTICS, I. III–IV

\(^b\) Figures and moods of syllogism.

\(^c\) The First Figure.

\(^d\) Middle term.

\(^e\) Extreme terms.

\(^f\) Both premises universal, Barbara.
ARISTOTLE

25 b
40 τὸ κατὰ παντὸς λέγομεν. ὁμοίως δὲ καὶ εἰ τὸ
26 μὲν Α κατὰ μηδενὸς τοῦ Β τὸ δὲ Β κατὰ παντὸς
tοῦ Γ, ὅτι τὸ Α οὐδενὶ τῷ Γ ὑπάρχει.

Εἰ δὲ τὸ μὲν πρῶτον παντὶ τῷ μέσῳ ὑπάρχει, τὸ
δὲ μέσον μηδενὶ τῷ ἐσχάτῳ ὑπάρχει, οὐκ ἔσται
συλλογισμὸς τῶν ἀκρων. οὐδὲν γὰρ ἀναγκαῖον
ὁ συμβαίνει τῷ ταύτα εἶναι καὶ γὰρ παντὶ καὶ
μηδενὶ ἐνδέχεται τὸ πρῶτον τῷ ἐσχάτῳ ὑπάρχειν,
ἀλλὰ οὔτε τὸ κατὰ μέρος οὔτε τὸ καθόλου
γίγνεται ἀναγκαῖον μηδενὸς δὲ ὄντος ἀναγκαίον
dίὰ τούτων οὐκ ἔσται συλλογισμὸς. ὃροι τοῦ
παντὶ ὑπάρχειν ζῷον—ἀνθρώπος—ἵππος, τοῦ μη-
δενὶ ζῷον—ἀνθρώπος—λίθος.

10 Οὐδ' ὅταν μῆτε τὸ πρῶτον τῷ μέσῳ μῆτε τὸ
μέσον τῷ ἐσχάτῳ μηδενὶ ὑπάρχῃ, οὐδ' οὔτως ἔσται
συλλογισμὸς. ὃροι τοῦ ὑπάρχειν ἐπιστήμη—
γραμμή—ἰατρική, τοῦ μὴ ὑπάρχειν ἐπιστήμη—
γραμμή—μονάς.

Καθόλου μὲν οὖν ὄντων τῶν ὄρων δήλων ἐν
tούτῳ τῷ σχῆματι πότε ἔσται καὶ πότε οὐκ ἔσται
15 συλλογισμὸς, καὶ ὅτι ὄντος τε συλλογισμοῦ τοὺς
ὄρους ἀναγκαίον ἔχειν ὡς εἴπομεν, ἀν ς' οὐτως
ἔχωσιν, ὅτι ἔσται συλλογισμός.

Εἰ δ' ὁ μὲν καθόλου τῶν ὄρων ό δ' ἐν μέρει
πρὸς τοὺς ἔτερους, ὅταν μὲν τὸ καθόλου τεθῇ πρὸς
tὸ μείζον ἀκρον ἢ κατηγορικὸν ἢ στερητικὸν,
tὸ δὲ ἐν μέρει πρὸς τὸ ἔλαττον κατηγορικὸν,
20 ἀνάγκη συλλογισμὸν εἶναι τέλειον, ὅταν δὲ πρὸς
tὸ ἔλαττον ἢ καὶ ἄλλως πως ἔχωσιν οἱ ὄροι,
is predicated of all of another. Similarly too if A \textit{Celarent},
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, \textit{AE}-
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, \textit{EE}-
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—medici-
ne; 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 (extreme) 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

\begin{footnotesize}
\begin{itemize}
\item[(2)] One universal and one particular premiss.
\end{itemize}
\end{footnotesize}
ARISTOTLE

26 a

άδύνατον. λέγω δὲ μείζον μὲν ἀκρον εν ω το
μέσον ἐστιν, ἐλαττον δὲ το ὑπὸ το μέσον ὄν.
ὑπαρχέτω γὰρ το μὲν Α παντὶ τῷ Β, τὸ δὲ Β τινὶ
tῶ Γ. οὐκοὖν εἰ ἔστι παντὸς κατηγορεῖσθαι τὸ
25 εν ἀρχῇ λεγθέν, ἀνάγκη το Α τινὶ τῷ Γ υπάρχειν.
καὶ εἰ τὸ μὲν Α μηδεὶν τῷ Β υπάρχει τὸ δὲ Β τινὶ
tῶ Γ, ἀνάγκη το Α τινὶ τῷ Γ μὴ υπάρχειν ὄρισται
gὰρ καὶ τὸ κατὰ μηδενὸς πῶς λέγομεν ὅστε ἐσται
συλλογισμὸς τέλειος. ὁμοίως δὲ καὶ εἰ ἀδιορίστον
εἰ ῾τὸ ΒΓ κατηγορικὸν ὄν ὁ γὰρ αὐτὸς ἐσται συλ-
30 λογισμὸς ἀδιορίστου τε καὶ ἐν μέρει ληφθέντος.
’Εάν δὲ πρὸς τὸ ἐλαττὸν ἀκρον τὸ καθόλου τεθῃ
ἡ κατηγορικὸν ἡ στερητικὸν, οὐκ ἐσται συλλο-
gισμὸς, οὐτε καταφατικὸν οὐτε ἀποφατικὸν τοῦ
ἀδιορίστου ἡ κατὰ μέρος οντος, οὖν εἰ τὸ μὲν Α
τινὶ τῷ Β υπάρχει ἡ μὴ υπάρχει, τὸ δὲ Β παντὶ
35 τῷ Γ υπάρχει ὃροι τοῦ υπάρχειν ἀγαθὸν—ἐξὶς—
φρόνησις, τοῦ μὴ υπάρχειν ἀγαθὸν—ἐξὶς—ἀμαθία.
Πάλιν εἰ τὸ μὲν Β μηδεὶν τῷ Γ, τὸ δὲ Α τινὶ
tῶ Β υπάρχει ἡ μὴ υπάρχει ἡ μὴ παντὶ υπάρχει,
ουδ’ οὕτως ἐσται συλλογισμὸς. ὃροι λευκὸν—
τίπος—κύκνος, λευκὸν—τίπος—κόραξ. οἱ αὐτοῦ
de καὶ εἰ τὸ ΑΒ ἀδιορίστον.
26 b

Οὐδ’ ὅταν τὸ μὲν πρὸς τῷ μείζον ἀκρον καθόλου
gένηται ἡ κατηγορικὸν ἡ στερητικὸν, τὸ δὲ πρὸς
τῷ ἐλαττονι στερητικὸν κατὰ μέρος, οὐκ ἐσται συλ-

1 τοῦ f. Waitz: οὔτε.

* 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.

\[\text{\textsuperscript{b} 24 b 28.}\]

\[\text{\textsuperscript{c} 24 b 30.}\]
λογισμὸς ἀδιόριστον τε καὶ ἐν μέρει ληφθέντος, ὁλον εἰ τὸ μὲν Α παντὶ τῷ Β ὑπάρχει, τὸ δὲ Β τινὶ τῷ Γ μή, ἢ εἰ μὴ παντὶ ὑπάρχει· φῶς γὰρ ἕν τινι μὴ ὑπάρχη τὸ μέσον, τούτω καὶ παντὶ καὶ οὐδενὶ ἀκολουθήσει τὸ πρῶτον. ὑποκείσθωσαν γὰρ οἱ ὁροὶ ζῷον—ἀνθρωπός—λευκόν· ἐπτα καὶ ὑν μὴ κατηγορεῖται λευκῶν ὁ ἀνθρωπος εἰλήφθω κύκνως καὶ χιών· οὐκοῦν τὸ ζῷον τοῦ μὲν παντὸς κατηγορεῖται τοῦ δὲ οὐδένος, ὡστε οὐκ ἔσται συλλογισμὸς. πάλιν τὸ μὲν Α μηδενὶ τῷ Β ὑπαρχέτω, τὸ δὲ Β τινὶ τῷ Γ μή ὑπαρχέτω, καὶ οἱ ὁροὶ ἐστῶσαν ἄφυχον—ἄνθρωπος—λευκόν· ἐπτα εἰλήφθωσαν, ὃν μὴ κατηγορεῖται λευκῶν ὁ ἀνθρωπος, κύκνως καὶ χιών· τὸ γὰρ ἄφυχον τοῦ μὲν παντὸς κατηγορεῖται τοῦ δὲ οὐδένος.

"Εἰτε ἐπεὶ ἀδιόριστον το τινὶ τῷ Γ τὸ Β μὴ ὑπάρχειν, ἀληθεύεται δὲ καὶ εἰ μηδενὶ ὑπάρχει καὶ εἰ μὴ παντὶ ότι τινὶ οὐχ ὑπάρχει, ληφθέντων δὲ τοιούτων ὀρων ὡστε μηδενὶ ὑπάρχειν οὐ γίγνεται συλλογισμὸς (τούτῳ γὰρ εἰρηται πρώτον), φανερὸν οὖν ὅτι τῷ οὐτως ἔχειν τοὺς ὀροὺς οὐκ ἔσται συλλογισμὸς· ἦν γὰρ ἄν καὶ ἐπὶ τούτων. ὁμοίως δὲ δειχθήσεται καὶ εἰ τὸ καθόλου τεθείη στερητικόν.

Οὐδέ γ' ἔαν ἄμφω τὰ διαστήματα κατὰ μέρος ἡ κατηγορικῶς ἡ στερητικῶς, ἡ τὸ μὲν κατηγορικῶς τὸ δὲ στερητικῶς λέγηται, ἡ τὸ μὲν ἀδιόριστον τὸ δὲ διωρισμένον, ἡ ἄμφω ἀδιόριστα, οὐκ ἔσται συλλογισμὸς οὐδαμῶς. ὁροὶ δὲ κοινοὶ πάντων ζῷον—λευκόν—ἵππος, ζῷον—λευκόν—λίθος.

Φανερὸν οὖν ἐκ τῶν εἰρημένων ως ἔαν ἢ συλ-
minor premiss is indefinite or particular; e.g., if A 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 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): 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

* 26 a 2.
λογισμὸς ἐν τούτῳ τῷ σχήματι κατὰ μέρος, ὅτι ἀνάγκη τούς ὅρους οὕτως ἔχειν ἀλλάς γάρ ἐχούσων οὐδαμῶς γίγνεται. δήλων δὲ καὶ ὅτι πάντες οἱ ἐν αὐτῷ συλλογισμοὶ τέλειοι
30 εἰσи πάντες γάρ ἐπιτελοῦνται διὰ τῶν 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 το τοιοῦτον σχῆμα πρῶτον.

V. "Ὅταν δὲ τὸ αὐτὸ τῷ μὲν παντὶ τῷ δὲ μηδενὶ ὑπάρχῃ, ἡ ἐκατέρω παντὶ ἡ μηδενὶ, τὸ μὲν σχῆμα τὸ τοιοῦτον καλῶ δεύτερον, μέσον δὲ ἐν αὐτῷ λέγω τὸ κατηγοροῦμενον ἀμφοῖν, ἀκρα δὲ καθ’ ὅν λέγεται τοῦτο, μεῖζον δὲ ἀκρὸν τὸ πρῶς τῷ μέσῳ κείμενον, ἐλαττὸν δὲ τὸ πορρωτέρῳ τοῦ μέσου. τίθεται δὲ τὸ μέσον ἐξω μὲν τῶν ἀκρῶν, πρῶτον δὲ τῇ θέσει.

27 a Τέλειος μὲν οὖν οὐκ ἐσται συλλογισμὸς οὐδαμῶς ἐν τούτῳ τῷ σχῆματι, δυνατὸς δὲ ἐσται καὶ καθόλου καὶ μὴ καθόλου τῶν ὅρων οὕτως. καθόλου μὲν οὖν οὕτως ἐσται συλλογισμὸς ὅταν τὸ μέσον τῷ μὲν παντὶ τῷ δὲ μηδενὶ ὑπάρχῃ, ἀν πρὸς ὁποτερῳδέν ἢ τὸ στερετικὸν ἄλλως δ’ οὐδαμῶς ἐκατερώ, κατηγορείσθω γὰρ τὸ Μ τοῦ μὲν Ν μηδενὸς τοῦ δὲ Ξ παντός. ἐπεὶ οὖν ἄνιστρέφει τὸ στερετικόν, οὐδενὶ τῷ Μ ὑπάρξει τῷ Ν· τὸ δὲ γε Μ παντὶ τῷ Ξ ὑπέκειτο· ὅστε τὸ Ν οὐδενὶ τῷ Ξ· τοῦτο γὰρ δεδεικται πρότερον. πάλιν εἰ τὸ Μ τῷ μὲν Ν 10 παντὶ τῷ δὲ Ξ μηδενὶ, οὐδὲ τῷ Ξ τῷ Ν οὐδενὶ ὑπάρξει. εἰ γὰρ τὸ Μ οὐδενὶ τῷ Ξ, οὐδὲ τῷ Ξ

1 τοῦ Ξ τοῦ Ν Α, Philoponus (?), Waitz: τοῦ Ν τῷ Ξ μιου, Trendelenburg: τοῦ Ξ τῷ Ν BCdf.
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 \(^1\) 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 negatived; 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 N 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 δὲ γε Μ παίτι τῷ Ν ὑπῆρχεν· τὸ ἀρα Ξ οὐδενὶ τῷ Ν ὑπάρξει γεγένηται γαρ πάλιν τὸ πρώτον σχῆμα. ἐπεὶ δὲ ἀντιστρέφει τὸ στερητικὸν, οὐδεὶ τὸ Ν οὐδενὶ τῷ Ξ ὑπάρξει, ὥστε ἐσται ὁ αὐτὸς συλλογισμὸς. ἔστι δὲ δεικνύαι 

15 ταῦτα καὶ εἰς τὸ ἀδύνατον ἁγνοτας.

"Ὅτι μὲν οὖν γίγνεται συλλογισμὸς οὗτως ἑχόντως τῶν ὄρων, φανερόν, ἄλλ' οὐ τέλειος· οὔ γαρ μόνον εκ τῶν εξ ἀρχῆς ἄλλα καὶ εξ ἄλλων ἐπιτελεῖται τὸ ἀναγκαῖον.

'Εάν δὲ τὸ Μ παίτος τοῦ Ν καὶ τοῦ Ξ κατηγορήται, οὐκ ἐσται συλλογισμὸς. ὅροι τοῦ ὑπάρχειν οὐσία—ζώων—ἀνθρωπος, τοῦ μη ὑπάρχειν οὐσία—ζώων—ἀριθμός· μέσον οὐσία. οὐδ' ὅταν μήτε τοῦ Ν μήτε τοῦ Ξ μηδένος κατηγορήται τὸ Μ. ὅροι τοῦ ὑπάρχειν γραμμή—ζώων—ἀνθρωπος, τοῦ μη ὑπάρχειν γραμμή—ζώων—λίθος.

Φανερόν οὖν ὅτι ἂν ἡ συλλογισμὸς καθόλου τῶν ὄρων οὕτως, ἀνάγκη τοὺς ὅρους ἔχειν ὡς ἐν ἀρχῇ εἴπομεν· ἄλλως γαρ ἑχόντων οὐ γίγνεται τὸ ἀναγκαῖον.

'Εάν δὲ πρὸς τὸν ἑτερον ἡ καθόλου τὸ μέσον, ὅταν μὲν πρὸς τὸν μεῖζω γένηται καθόλου ἡ κατηγορικῶς ἡ στερητικῶς, πρὸς δὲ τὸν ἐλάττω κατὰ μέρος καὶ ἀντικειμένως τῷ καθόλου (λέγω δὲ τὸ 

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

b By assuming in each case the contradictory of the conclusion, viz., that Ν applies to some O, and combining this with the major premiss. The resulting syllogisms (in Ferio 218
to no O, O will apply to no M. But 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. It is also possible to prove these results by reduction *ad impossibile.*

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, 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 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; for if they are otherwise related no conclusion follows by logical necessity.

If on the other hand the middle term is universally related to 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.

* 27 a 3.
ARISTOTLE

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 Μ τῷ μὲν Ν μηδενὶ τῷ δὲ Ξ τινὶ ύπάρχει, ἀνάγκη τὸ Ν τινὶ τῷ Ξ μη ὑπάρχειν. ἔπει γὰρ ἀντιστρέφει τὸ στερητικὸν, οὐδενὶ τῷ Μ ύπάρξει τὸ Ν· τὸ δὲ γε Μ ύπέκειτο τινὶ τῷ Ξ ύπάρχειν· ὡστε τὸ Ν τινὶ τῷ Ξ οὐχ ύπάρξει· γίγνεται γὰρ συλλογισμὸς διὰ τοῦ πρῶτου σχήματος. πάλιν εἰ τὸ μὲν Ν παντὶ τῷ Μ τῷ δὲ Ξ τινὶ μη ύπάρχει, ἀνάγκη τὸ Ν τινὶ τῷ Ξ μη ύπάρχειν· εἰ γὰρ παντὶ ύπάρχει κατηγορεῖται δὲ καὶ τὸ Μ παντὸς τοῦ Ν, ἀνάγκη τὸ Μ παντὶ τῷ Ξ ύπάρχειν· ύπέκειτο δὲ τινὶ μη ύπάρχει. καὶ εἰ τὸ Μ τῷ μὲν Ν παντὶ ύπάρχει τῷ δὲ Ξ μη παντὶ, ἔσται συλλογισμὸς ότι οὐ παντὶ τῷ Ξ τοῦ Ν· ἀπόδειξις δ' ἡ αὐτή. εὰν δὲ τοῦ μὲν Ξ παντὸς τοῦ δὲ Ν μη παντὸς κατηγορῆται, οὐκ ἐσται συλλογισμὸς. ὁροὶ ζωον—οὕσια—κόραξ, ζωον—λευκόν—κόραξ. οὐδ' ὅταν τοῦ μὲν ξ μηδενὸς τοῦ δὲ Ν τινὸς. ὁροὶ του ύπάρχειν ζωον—οὕσια—μονάς, τοῦ μη ύπάρχειν ζωον—οὕσια—ἐπιστήμη.

"Ὅταν μὲν οὖν ἀντικειμένον ἢ τὸ καθόλου τῷ κατὰ μέρος, εἰρηται πὸτ' ἐσται καὶ πὸτ' οὐκ ἐσται συλλογισμὸς· ὅταν δὲ ὀμοιοσχήμονες ὡσιν αἱ προτάσεις, οἱ οὖν ἀμφότεραι στερητικαὶ ἡ καταφατικαὶ, οὐδαμῶς ἐσται συλλογισμὸς. ἑστωσαν γὰρ πρώτον στερητικαί, 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 Festino, 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 all O *oa*-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 premises 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.
άκρον, οἷον τὸ Μ τῷ μὲν Ν μηδενὶ τῷ δὲ Ξ τινὶ μὴ ὑπάρχετω, ἐνδέχεται δὴ καὶ παντὶ καὶ μηδενὶ τῷ Ξ τὸ Ν ὑπάρχειν. ὃροι τοῦ μὲν μὴ ὑπάρχειν μέλαν—χιών—ζῷον, τοῦ δὲ παντὶ ὑπάρχειν οὐκ ἔστι λαβεῖν, εἰ τὸ Μ τῷ Ξ τινὶ μὲν ὑπάρχει τινὶ δὲ μη. εἰ γὰρ παντὶ τῷ Ξ τὸ Ν τὸ δὲ Μ μηδενὶ τῷ Ν, τὸ Μ οὐδενὶ τῷ Ξ ὑπάρξει· ἀλλ' ὑπέκειτο τινὶ ὑπάρχειν. οὖτω μὲν οὖν οὐκ ἐγχωρεῖ λαβεῖν ὅρους, ἐκ δὲ τοῦ ἀδιορίστου δεικτέον εἰπεί γὰρ ἀληθεύεται τὸ τινὶ μὴ ὑπάρχειν τὸ Μ τῷ Ξ καὶ εἰ μηδενὶ ὑπάρχει, μηδενὶ δὲ ὑπάρχουτος οὐκ ἦν συλλογισμὸς, φανερῶν ὅτι οὐδὲ τὸν ἔσται.

Πάλιν ἐστωσαν κατηγορικά, καὶ τὸ καθόλου κείσθω ὁμοίως, οἷον τὸ Μ τῷ μὲν Ν παντὶ τῷ δὲ Ξ τινὶ ὑπάρχειν. ἐνδέχεται δὴ τὸ Ν τῷ Ξ καὶ παντὶ καὶ μηδενὶ ὑπάρχειν. ὃροι τοῦ μηδενὶ ὑπάρχειν λευκὸν—κύκνος—λίθος· τοῦ δὲ παντὶ οὐκ ἔσται λαβεῖν διὰ τὴν αὐτὴν αἰτίαν ἦπερ πρότερον, ἀλλ' ἐκ τοῦ ἀδιορίστου δεικτέον.

Εἰ δὲ τὸ καθόλου πρὸς τὸ ἐλαττὸν ἁκρόν ἔστι καὶ τὸ Μ τῷ μὲν Ξ μηδενὶ τῷ δὲ Ν τινὶ μὴ ὑπάρχει, ἐνδέχεται τὸ Ν τῷ Ξ καὶ παντὶ καὶ μηδενὶ ὑπάρχειν. ὃροι τοῦ ὑπάρχειν λευκὸν—ζῷον—κόραξ, τοῦ μὴ ὑπάρχειν λευκὸν—λίθος—κόραξ. εἰ δὲ κατηγορικά αἱ προτάσεις, ὃροι τοῦ μὴ ὑπάρχειν λευκὸν—ζῷον—χιών, τοῦ ὑπάρχειν λευκὸν—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 ὀμοιοσχήμονες ὄσοι ἀι προ-
τάσεις καὶ ἡ μὲν καθόλου ἡ δ’ ἐν μέρει, ὅτι οὐδαμῶς
γίγνεται συλλογισμός· ἀλλ’ οὐδ’ εἰ τινι ἐκατέρω
ὑπάρχει ἡ μὴ ὑπάρχει, ἡ τῷ μὲν τῷ δὲ μῆ, ἡ
μηδετέρων παντὶ, ἡ ἀδιορίστως. ὁ ροῖ δὲ κοινοὶ
πάντως λευκοῖ—ζωον—ἄνθρωπος, λευκὸν—ζωον—
ἀμυχον.

28 a  Φανερὸν οὖν ἐκ τῶν εἰρημένων ὅτι ἐὰν τε οὕτως
ἐξωσιν οἱ ὁ ροῖ πρὸς ἀλλήλους ὡς ἐλέξθη, γίγνεται
συλλογισμὸς ε’ ἀνάγκης, ἀν τ’ ἡ συλλογισμὸς,
ἀνάγκη τοὺς ὁροὺς οὕτως ἔχειν. δῆλον δε καὶ ὅτι
5 πάντες ἀτελεῖς εἰσὶν οἱ ἐν τούτῳ τῷ σχήματι συλ-
λογισμοί (πάντες γὰρ ἐπιτελοῦνται προσελμαβανο-
μένων τινῶν, ἡ ἐνυπάρχει τοῖς ὁροῖς ε’ ἀνάγκης
η τίθεται ὡς ὑποθέσεις, οἴον ὅταν διὰ τοῦ ἀδυ-
νάτου δεικνύμενον), καὶ ὅτι οὐ γίγνεται καταφατικὸς
συλλογισμὸς διὰ τούτου τοῦ σχήματος, ἀλλὰ πάντες
στερητικοί, καὶ οἱ καθόλου καὶ οἱ κατὰ μέρος.

10 VI. Ἐὰν δὲ τῷ αὐτῷ τὸ μὲν παντὶ τὸ δὲ µηδενὶ
ὑπάρχῃ, ἡ ἀμφω παντὶ ἡ µηδενὶ, τὸ μὲν σχῆμα
τὸ τοιοῦτον καλῷ τρίτων, μέσον δ’ ἐν αὐτῷ λέγω
καθ’ οὗ ἀμφω τὰ κατηγορούμενα, ἀκρα δὲ τὰ κατ-
ηγορούμενα, μεῖζον δ’ ἀκρὸν τὸ πορρότερον τοῦ
μέσου, ἔλαττον δὲ τὸ ἐγγύτερον τίθεται δέ τὸ
15 μέσον ἐξω μὲν τῶν ἀκρῶν ἐσχατον δὲ τῇ θέσει.
Τέλειος μὲν οὖν οὐ γίγνεται συλλογισμὸς οὐδ’
ἐν τούτῳ τῷ σχήματι, δυνατὸς δ’ ἔσται καὶ καθόλου

1 µηδ’ ἐτέρῳ, Waitz.

a 27 a 3-5, 26-32.
b Aristotle has in mind the formula which he uses in I. 18, 224.
PRIOR ANALYTICS, I. v–vi

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 predications; 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.b

Now we do not get a perfect syllogism in this figure either; but there will be a valid c syllogism whether where P stands for the major, R for the minor and S for the middle term.

(3) Other combinations of premisses, II–III

(1) Both premisses universal.

Third Figure Position of the terms.

Third Figure Position of the terms.

H 2

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c i.e. imperfect.
καὶ μὴ καθόλου τῶν ὄρων ὄντων πρὸς τὸ μέσον. 
καθόλου μὲν ὁν ̓ οὗν ὄντων, ὅταν καὶ τὸ Π καὶ τὸ Ρ 
pαντὶ τῷ Σ ὑπάρχῃ, ὅτι τινὶ τῷ Ρ τὸ Π ὑπάρξῃ 
ἐξ ἀνάγκης· ἐπεὶ γὰρ ἀντιστρέφει τὸ κατηγορικὸν, 
ὑπάρξῃ τὸ Σ τινὶ τῷ Ρ, ὡστ' ἐπεὶ τῷ μὲν Σ παντὶ 
tὸ Π τῷ δὲ Ρ τινὶ τῷ Σ, ἀνάγκη τὸ Π τινὶ τῷ Ρ 
ὑπάρχειν· γίγνεται γὰρ συλλογισμὸς διὰ τοῦ πρώ- 
tου σχήματος. ἐστι δὲ καὶ διὰ τοῦ ἄδυνάτου καὶ 
tῷ ἐκθέσθαι ποιεῖν τὴν ἀποδείξιν· εἰ γὰρ ἄμφω 
pαντὶ τῷ Σ ὑπάρχει, ἀν ληφθῇ τι τῶν Σ ὄλου τὸ 
Ν, τούτω καὶ τὸ Π καὶ τὸ Ρ ὑπάρξῃ, ὡστε τινὶ 
tῷ Ρ τὸ Π ὑπάρξῃ.

Καὶ ἂν τὸ μὲν Ρ παντὶ τῷ Σ τὸ δὲ Π μηδενὶ 
ὑπάρχῃ, ἐσται συλλογισμὸς ὅτι τὸ Π τινὶ τῷ Ρ 
οὐχ ὑπάρξει εξ ἀνάγκης· ἃ γὰρ αὐτὸς τρόπος τῆς 
ἀποδείξεως ἀντιστραφείσης τῆς ΡΣ προτάσεως.

deixhe̱i δ' ἂν καὶ διὰ τοῦ ἄδυνάτου, καθάπερ ἐπὶ 
tῶν προτέρων.

Εἰ δὲ τὸ μὲν Ρ μηδενὶ τὸ δὲ Π παντὶ ὑπάρξῃ 
tῷ Σ, οὐκ ἐσται συλλογισμὸς· ὥστε τὸν ὑπάρχειν 
ζῷον· ἵππος· ἄνθρωπος, τοῦ μὴ ὑπάρχειν ζῷον 
— ἄψυχον· ἄνθρωπος. οὐδ' ὅταν ἄμφω κατά μη- 
dενὸς τοῦ Σ λέγηται, οὐκ ἐσται συλλογισμὸς.

ὁ ροὶ τοῦ ὑπάρχειν ζῷον· ἵππος· ἄψυχον, τοῦ μὴ 
ὑπάρχειν ἄνθρωπος· ἵππος· ἄψυχον· μέσον ἄψυχον.

Φαῖνειν οὖν καὶ ἐν τούτῳ τῷ σχήματι πότ' 
ἐσται καὶ πότ' οὐκ ἐσται συλλογισμὸς καθόλου 
tῶν ὄρων ὄντων. ὅταν μὲν γὰρ ἀμφότεροι οἱ ροὶ ὅσι 
κατηγορικοί, ἐσται συλλογισμὸς ὅτι τινὶ ὑπάρχει

* In Darii, 26 a 23.
* This does not, of course, mean that the conclusion is 
apodeictic, but that it follows necessarily from the premisses. 226
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 $RS$ 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.'
ARISTOTLE

28 b τὸ ἀκρόν τῶν ἀκρῶν, ὅταν δὲ στερητικός, οὐκ ἔσται ὅταν δ' ὁ μὲν ἢ στερητικός ὁ δὲ καταφατικός, εάν μὲν ὁ μεῖζων γένηται στερητικός ἄτερος δὲ καταφατικός, ἔσται συλλογισμός ὅτι τινὶ οὐχ ὑπάρχει τὸ ἀκρόν τῶν ἀκρῶν, εάν δ' ἀνάπαλιν, οὐκ ἔσται.

6 'Εὰν δ' ὁ μὲν ἢ καθόλου πρὸς τὸ μέσον ὁ δ' ἐν μέρει, κατηγορικῶν μὲν ὄντων ἀμφοῖν ἀνάγκη γίγνεσθαι συλλογισμόν, ἂν ὀποτεροσοῦν ἢ καθόλου τῶν ὅρων. εἶ γὰρ τὸ μὲν Ρ παντὶ τῷ Σ τοῦ δὲ Π τινὶ, ἀνάγκη τὸ Π τινὶ τῷ Ρ ὑπάρχειν· εἶπε γὰρ ἀντιστρέφει τὸ καταφατικόν, ὑπάρξει τὸ Σ τινὶ τῶ Π, ὡστ' εἶπε τὸ μὲν Ρ παντὶ τῷ Σ τοῦ δὲ Σ τινὶ τῷ Π, καὶ τὸ Ρ τινὶ τῷ Π ὑπάρξει. ὡστ' τὸ Π τινὶ τῷ Ρ, πάλιν εἰ τὸ μὲν Ρ τινὶ τῷ Σ τοῦ δὲ Π παντὶ ὑπάρχει, ἀνάγκη τὸ Π τινὶ τῷ Π ὑπάρχειν· ὁ γὰρ αὐτὸς τρόπος τῆς ἀποδείξεως. ἔστι δ' ἀποδείξει καὶ διὰ τοῦ ἀδυνάτου καὶ τῇ ἐκθέσει, καθάπερ ἐπὶ τῶν προτέρων.

'Εὰν δ' ὁ μὲν ἢ κατηγορικός ὁ δὲ στερητικός, καθόλου δὲ ὁ κατηγορικός, ὅταν μὲν ὁ ἐλάττων ἢ κατηγορικός, ἔσται συλλογισμός· εἰ γὰρ τὸ Ρ παντὶ τῷ Σ τοῦ δὲ Π τινὶ μὴ ὑπάρχει, ἀνάγκη τὸ Π τινὶ τῷ Ρ μὴ ὑπάρχειν (εἰ γὰρ παντὶ, καὶ τὸ Ρ παντὶ τῷ Σ, καὶ τὸ Π παντὶ τῷ Σ ὑπάρξει· ἀλλ' οὐχ ὑπάρχει· δεῖκνυται δὲ καὶ ἀνεν τῆς ἀπαγωγῆς, εάν ληφθῇ τι τῶν Σ ὁ τοῦ Π μὴ ὑπάρχει).· ὅταν δ' ὁ μεῖζων ἢ κατηγορικός, οὐκ ἔσται συλλογισμός, οἷον εἰ τὸ μὲν Π παντὶ τῷ Σ τοῦ δὲ Ρ τινὶ τῷ Σ μὴ ὑπάρχει.· ὁροὶ τοῦ παντὶ ὑπάρχειν ἐμψυχοῦν—

* By Darii in the first figure.

* 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, 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.*
28 b

25 ἀνθρωπος—ζωὸν· τὸν δὲ μηδενὶ οὐκ ἔστι λαβεὶν ὅρους, εἰ τινὶ μὲν ὑπάρχει τῷ Σ τῷ Ρ τινὶ δὲ μὴ· εἰ γὰρ παντὶ τὸ Π τῷ Σ ὑπάρχει τὸ δὲ Ρ τινὶ τῷ Σ, καὶ τὸ Π τινὶ τῷ Ρ ὑπάρχει· ὑπέκειτο δὲ μηδενὶ ὑπάρχειν. ἀλλ' ὦσπερ ἐν τοῖς πρῶτοις ληπτέουν· ἀδιορίστοι γὰρ οὗτοι τοῦ τινὶ μὴ ὑπάρχειν καὶ τὸ μηδενὶ ὑπάρχον ἀληθῶς εἰπεῖν τινὶ μὴ ὑπάρχειν· μηδενὶ δὲ ὑπάρχοντος οὐκ ἐν συλλογισμός. φανερῶν οὖν ὦτι οὐκ ἔσται συλλογισμὸς.

Εἰς δ' ὁ στερητικὸς ἡ καθόλου τῶν ὅρων, ὅταν μὲν ὁ μείζων ᾗ στερητικὸς ὁ δὲ ἐλάττων κατηγορικὸς, ἔσται συλλογισμός· εἰ γὰρ τὸ Π μηδενὶ τῷ Σ τὸ δὲ Ρ τινὶ ὑπάρχει τῷ Σ, τὸ Π τινὶ τῷ Ρ οὖχ ὑπάρξει, πάλιν γὰρ ἔσται τὸ πρῶτον σχῆμα τῆς ΡΣ προτάσεως ἀντιστραφεῖσθαι· ὅταν δὲ ὁ ἐλάττων ᾗ στερητικὸς, οὐκ ἔσται συλλογισμός. ὁροὶ τοῦ ὑπάρχειν ζωὸν· ἀνθρωπος· ἄγριον, τοῦ μὴ ὑπάρχειν ζωὸν· ἐπιστῆμη· ἄγριον· μέσον εν᾽ ἀμφοῖν τὸ ἄγριον.

Οὐδ' ὣταν ἀμφότεροι στερητικοὶ τεθῶσιν, ἡ δ' ὁ μὲν καθόλου ὁ δ' ἐν μέρει. ὁροὶ ὣταν ὁ ἐλάττων ᾗ καθόλου πρὸς τὸ μέσον, ζωὸν· ἐπιστῆμη· ἄγριον, ζωὸν· ἀνθρωπος· ἄγριον· ὥστε δ' ὁ μείζων, τοῦ μὲν μὴ ὑπάρχειν κόραξ· χῦν· λευκὸν· τοῦ δ' ὑπάρχειν οὐκ ἔστι λαβεῖν, εἰ τὸ Ρ τινὶ μὲν ὑπάρχει στῷ Σ τινὶ δὲ μὴ ὑπάρχει (εἰ γὰρ τὸ Π παντὶ τῷ

1 εν om. Cm.

* i.e. on the assumption that the relation of the extremes is universal and negative.

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but we cannot find terms where the relation is
universal and negative, since $R$ applies to some $S$
al
although it also does not apply to some. For if $P$
al
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 $R$
Ferison.
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 $P$

\[27\ b\ 20, 28.\]

\[28\ a\ 30.\]

\[26\ a\ 25.\]
ARISTOTLE

29 a

Ρ τὸ δὲ Ρ τινὶ τῷ Σ, καὶ τὸ Π τινὶ τῷ Σ· ὑπέκειτο δὲ μηδενὶ, ἀλλ' ἐκ τοῦ ἀδιορίστου δεικτεόν.

Οὐδ' ἂν ἐκάτερος τινὶ τῷ μέσῳ ὑπάρχῃ ἢ μὴ ὑπάρχῃ, ἢ ὁ μὲν ὑπάρχῃ ὁ δὲ μὴ ὑπάρχῃ, ἢ ὁ μὲν τινὶ ὁ δὲ μὴ παντὶ, ἢ ἀδιορίστως, οὐκ ἐσται συλλογισμὸς οὐδαμῶς. ὅρωι δὲ κοινὸι πάντων ζωον—

10 ἀνθρωπος—λευκὸν, ζωον—ἅπυχον—λευκὸν.

Φανερὸν οὖν καὶ ἐν τούτῳ τῷ σχήματι πότ' ἐσται καὶ πότ' οὖκ ἐσται συλλογισμός, καὶ ὅτι ἔχοντων τε τῶν ὅρων ὡς ἐλέχθη γίγνεται συλλογισμὸς ἐξ ἀνάγκης, ἀν τ' ἢ συλλογισμὸς, ἀνάγκη τοὺς ὅρους οὕτως ἔχειν. φανερὸν δὲ καὶ ὅτι 15 πάντες ἀπελεῖς εἰσιν οἱ ἐν τούτῳ τῷ σχήματι συλλογισμοὶ (πάντες γὰρ τελειοῦται προσλαμβανομένων τινῶν) καὶ ὅτι συλλογισθαῖ τὸ καθὸλου διὰ τοῦτο τοῦ σχήματος οὐκ ἐσται οὕτε στερητικὸν οὕτε καταφατικὸν.

VII. Δήλον δὲ καὶ ὅτι ἐν ἀπασὶ τοῖς σχήμασιν, 20 ὅταν μὴ γίγνεται συλλογισμός, κατηγορικῶν μὲν ἢ στερητικῶν ἀμφοτέρων ὅπως τῶν ὅρων οὐδὲν ὀλος γίγνεται ἀναγκαῖον, κατηγορικοῦ δὲ καὶ στερητικοῦ, καθὸλου ληφθέντος τοῦ στερητικοῦ ἀεὶ γίγνεται συλλογισμὸς τοῦ ἐλάττωνος ἀκρον πρὸς τὸ μεῖζον, οἷον εἰ τὸ μὲν Α παντὶ τῷ Β ἢ 25 τινὶ, τὸ δὲ Β μηδενὶ τῷ Γ. ἀντιστρεφομένων γὰρ 232
PRIOR ANALYTICS, I. vi–vii

applies to all $R$, and $R$ to some $S$, $P$ also applies to some $S$; but *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

\[ a \text{ Cf. 27 b 20.} \]
\[ b \text{ 28 a 18, 26, 28 b 5, 15, 31.} \]
\[ c \text{ The minor being the predicate and the major the subject.} \]
\[ d \text{ Fapesmo in the first, Fesapo in the fourth figure.} \]
\[ e \text{ Frisesomorum in the first, Fresison in the fourth figure.} \]
τῶν προτάσεων ἀνάγκη τὸ Γ τινὶ τῷ Α μὴ ὑπάρχειν. ὀμοίως δὲ κατὶ τῶν ἐτέρων σχημάτων, ἀεὶ γὰρ γίγνεται διὰ τῆς ἀντιστροφῆς συλλογισμός. δὴ λοιπὸν δὲ καὶ ὅτι τὸ ἀδιόριστον ἀντὶ τοῦ κατηγορικοῦ τοῦ ἐν μέρει τιθέμενον τοῦ αὐτοῦ ποιήσει συλλογισμὸν ἐν ἀπάσι τοῖς σχήμασιν.

Φανερὸν δὲ καὶ ὅτι πάντες οἱ ἀτελεῖς συλλογισμοὶ τελειοῦνται διὰ τοῦ πρῶτου σχήματος. ἡ γὰρ δεικτικῶς η διὰ τοῦ ἀδιόριστου περαιώνται πάντες· ἀμφοτέρως δὲ γίγνεται τὸ πρῶτον σχῆμα, δεικτικῶς μὲν τελειομένων, ὅτι διὰ τῆς ἀντιστροφῆς ἐπεραιώντο πάντες, ἡ δ' ἀντιστροφὴ τὸ πρῶτον ἐστὶ σχῆμα, διὰ δὲ τοῦ ἀδιόριστου δεικτικῶν, ὅτι τεθέντος τοῦ ἄδεδειξος ὁ συλλογισμὸς γίγνεται διὰ τοῦ πρῶτου σχῆματος· οἷον ἐν τῷ τελευταῖῳ σχῆματι, εἰ τὸ Α καὶ τὸ Β παντὶ τῷ Γ ὑπάρχει, ὅτι τὸ Α τινὶ τῷ Β ὑπάρχει· εἰ γὰρ μηδενὶ, τὸ δὲ Β παντὶ τῷ Γ, οὐδὲν τῷ Γ τὸ Α· ἀλλ' ἢν παντὶ ὁμοίως δὲ καὶ ἐπὶ τῶν ἄλλων.

Ἔστι δὲ καὶ ἀναγαγεῖν πάντας τοὺς συλλογισμοὺς εἰς τοὺς ἐν τῷ πρῶτῳ σχῆματι καθόλου συλλογισμούς. οἳ μὲν γὰρ ἐν τῷ δευτέρῳ φανερὸν ὅτι δ' ἐκεῖνὼν τελειοῦνται, πλὴν οὐχ ὁμοίως πάντες, ἀλλ' οἳ μὲν καθόλου τοῦ στερητικοῦ ἀντιστραφέντος, τῶν δ' ἐν μέρει ἐκάτερος διὰ τῆς εἰς τὸ ἀδιόριστον ἀπαγωγῆς· οἳ δ' ἐν τῷ πρῶτῳ οἳ κατὰ μέρος ἐπιτελοῦνται μὲν καὶ δι' αὐτῶν, ἕστι 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 (Perio).

* In the second and third figures this is effected simply by

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the premises 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.
ARISTOTLE

29 b
tou deuterou schimaatos deiknvai eis adunaton ap-
agontas, oloun ei to A panti tw B to de B tini

to Gamma, sti to A tini to Gamma. ei gar mhtevi, tw de
B panti, ouvedi to Gamma to B uparxei touto gar
ismen dia tou deuterou schimaatos. omoiws de kai
epi tou sterrhikou estai h apodeveis. ei gar to
A mhtevi tw B to de B tini tw Gamma uparxei, to A
tini tw Gamma ouvch uparxei ei gar panti, tw de B
mhtevi uparxei, ouvedi to Gamma to B uparxei touto
di to meson schima. woste epeoi ois men en tw
mesw schima schullogismoi pantes anayontai eis
tous en tw prwtw katholou schullogismous, ois de
kata meros en tw prwtw eis tous en tw mesw,
fanerwn sti kai ois kata meros anaxhhsontai eis
tous en tw prwtw schima katholou schullogismous.

Ois di en tw tritw katholou men oitwv twon oron
evthis epiteloynai di eknevwn twon schullogismwn,
othan di en meres lefthwsi, dia twon en meres schul-
logismwv twon en tw prwtw schima tis oitw de
anxhhsan eis eknevwn, wsste kai ois en tw tritw
schima ois kata meros. fanerwn ouv sti pantes
anaxhhsontai eis tous en tw prwtw schima
katholou schullogismous.

Ois men ouv twon schullogismwv uparxein h meta
uparxein deiknvites eirnthai wos echousi, kai kath
autous oi ek tou autou schimaatos kai pros allhous
oi ek twon eteiron schimatos.

VIII. 'Epeoi di eterwn estin uparxein te kai eis

1 schimata om. d.

a 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

29 b

30 ἀνάγκης ὑπάρχειν καὶ ἐνδεχομένων ὑπάρχειν (πολλὰ γὰρ ὑπάρχει μὲν, οὐ μὲντοι ἐξ ἀνάγκης· τὰ δ' οὖτ' ἐξ ἀνάγκης οὐθ' ὑπάρχει ὅλως, ἐνδεχεται δ' ὑπάρχειν), δὴ λοιπὸν ὅτι καὶ συλλογισμὸς ἐκάστου τοῦτων ἑτέρος ἔσται, καὶ οὐχ ὁμοίως ἔχοντων τῶν ὁρων, ἀλλ' ο μὲν ἐξ ἀναγκαίων ὁ δ' ἐξ ὑπαρχόντων

35 ὁ δ' ἐξ ἐνδεχομένων.

'Επὶ μὲν οὖν τῶν ἀναγκαίων σχεδὸν ὁμοίως ἔχει καὶ ἔπι τῶν ὑπαρχόντων· ὑσαύτως γὰρ τιθεμένων τῶν ὁρων ἐν τε τῷ ὑπάρχειν καὶ τῷ ἐξ ἀνάγκης ὑπάρχειν ἤ μὴ ὑπάρχειν ἔσται τε καὶ οὐκ ἔσται συλλογισμὸς, πλὴν διοίσει τῷ προσκείσθαι τοῖς ὀροις τὸ ἐξ ἀνάγκης ὑπάρχειν ἤ μὴ ὑπάρχειν· τὸ τε γὰρ στερητικὸν ὑσαύτως ἀντιστρέφει, καὶ τὸ ἐν ὅλω εἶναι καὶ τὸ κατὰ παιτὸς ὁμοίως ἀποδώσομεν.

'Εν μὲν οὖν τοῖς ἀλλοις τῶν αὐτῶν τρόπων δει- σχῆσεται διὰ τῆς ἀντιστροφῆς τὸ συμπέρασμα ἀναγκαῖον ὑσαύτερ ἐπὶ τοῦ ὑπάρχειν· ἐν δὲ τῷ μέσῳ σχῆματι ὅταν ἢ τὸ καθόλου καταφατικὸν τὸ δ' ἐν μέρει στερητικόν, καὶ πάλιν ἐν τῷ τρίτῳ ὅταν τὸ μὲν καθόλου κατηγορικὸν τὸ δ' ἐν μέρει στερητικόν, οὐχ ὁμοίως ἔσται ἢ ἀποδείξεις, ἀλλ' ἀνάγκη ἐκθεμένους ὡς τινὶ ἐκάτερον μὴ ὑπάρχει, κατά τούτου ποιεῖν τὸν συλλογισμόν· ἔσται γὰρ ἀναγ-

* Cf. note on 25 a 2.
* Cf. 25 a 5.
+ 24 b 26.
* 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.a

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,b and we shall give the same explanation c 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.d 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 ἐκτεθέατος ἐστὶν ἀναγκαῖος, καὶ κατ’ ἐκείνου τινός: τὸ γὰρ ἐκτεθὲν ὀπερ ἐκεῖνο τί ἐστίν. γίγνεται δὲ τῶν συλλογισμῶν ἐκάτερος ἐν τῷ οἴκειῳ σχῆματι.

15 IX. Συμβαίνει δὲ ποτε καὶ τῆς ἐτέρας προτάσεως ἀναγκαίας οὕσης ἀναγκαίον γίγνεσθαι τὸν συλλογισμὸν, πλὴν οὐχ ὀποτέρας ἐτυχείν, άλλα τῆς πρὸς τὸ μεῖζον ἀκρον οἶον εἰ τὸ μὲν Α τῷ Β ἐξ ἀνάγκης εἰληπται ὑπάρχην (ἡ μὴ ὑπάρχην), τὸ δὲ Β τῷ Γ ὑπάρχῃν μονον οὕτως γὰρ εἰλημμενων τῶν προτάσεων εξ ἀνάγκης τὸ Α τῷ Γ ὑπάρχει (ἡ οὐχ ὑπάρχει). ἐπει γὰρ παντὶ τῷ Β ἐξ ἀνάγκης ὑπάρχει (ἡ οὐχ ὑπάρχει) τὸ Α, τὸ δὲ Γ τὶ τῶν Β ἐστὶ, φανερὸν ὅτι καὶ τῷ Γ ἐξ ἀνάγκης ἐσται βάτερον τούτων.

Εἰ δὲ τὸ μὲν ΑΒ μὴ ἐστιν ἀναγκαῖον τὸ δὲ ΒΓ ἀναγκαῖον, οὐκ ἐσται τὸ συμπέρασμα ἀναγκαῖον. εἰ γὰρ ἐστιν, συμβάειν τὸ Α τῳ Β ὑπάρχειν εξ ἀνάγκης διά της τοῦ πρώτου καὶ διά τοῦ τρίτου σχῆματος. τούτῳ δὲ ψεύδος: ενδεχεται γὰρ τοιουτον εἶναι τὸ Β οὐ ἐγχωρεῖ τὸ Α μηδεν ὑπάρχειν. ἐτι καὶ ἐκ τῶν ὄρων φανερὸν ὅτι οὐκ ἐσται τὸ συμπέρασμα ἀναγκαίον, οἰον εἰ τὸ μὲν Α εἰη κίνησις, τὸ δὲ Β ζωον, ἐφ’ ὦ δὲ τὸ Γ ἄνθρωπος· ζωον μὲν γὰρ ὁ ἄνθρωπος ἐς ἀνάγκης ἐστι, κωνεῖται δὲ τὸ ζωον οὐκ ἐς ἀνάγκης, οὐδ’ ὁ ἄνθρωπος.

1 τῷ ΑΒΓ : τῷ Β διιν.
2 ἐστὶν ΑΒδ : ἐσται Κβ.

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* e.g., we have in Baroco M necessarily applies to all N
  M necessarily does not apply to some O.
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.

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.

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.
ομοίως δὲ καὶ εἰ στερητικῶν εἰς τὸ ΑΒ· ἡ γὰρ αὐτὴ ἀπόδειξις.

Ἐπὶ δὲ τῶν ἐν μέρει συλλογισμῶν, εἰ μὲν τὸ καθόλου ἐστὶν ἀναγκαῖον, καὶ τὸ συμπέρασμα ἐσταὶ ἀναγκαῖον, εἰ δὲ τὸ κατὰ μέρος, οὐκ ἀναγκαῖον, οὔτε στερητικῆς οὔτε κατηγορικῆς οὐσίας τῆς καθόλου προτάσεως· ἐστὶν δὴ πρῶτον τὸ καθόλου ἀναγκαῖον, καὶ τὸ μὲν Α παντὶ τῷ Β ὑπάρχει τοῦ ἀνάγκης, τὸ δὲ Β τινὶ τῷ Γ ὑπάρχει τοῦ μόνου·

40 ἀνάγκη δὴ τῷ Α τινὶ τῷ Γ ὑπάρχει τοῦ ἀνάγκης· τὸ γὰρ Γ ὑπὸ τὸ Β ἑστὶ, τῷ δὲ Β παντὶ τῷ Α' ὑπήρχεν τοῦ ἀνάγκης. ομοίως δὲ καὶ εἰ στερητικῶς εἰς ὧν συλλογισμὸς· ἡ γὰρ αὐτὴ ἐσταὶ ἀπόδειξις. εἰ δὲ τὸ κατὰ μέρος ἐστὶν ἀναγκαῖον, οὐκ ἐσταὶ τὸ συμπέρασμα ἀναγκαῖον· οὔδεν γὰρ ἀδύνατον συμ-ππέτει, καθάπερ οὖν ἐν τοῖς καθόλου συλλογισμοῖς· ομοίως δὲ καὶ τῶν στερητικῶν. ὁρεί κύνησις—ξώον—λευκόν.

Χ. Ἐπὶ δὲ τοῦ δευτέρου σχήματος, εἰ μὲν ἡ στερητικὴ πρότασις ἐστὶν ἀναγκαῖα, καὶ τὸ συμ-πέρασμα ἐσταὶ ἀναγκαῖον, εἰ δὲ ἡ κατηγορικὴ, οὐκ 10 ἀναγκαῖον. ἐστὶν γὰρ πρῶτον ἡ στερητικὴ ἀναγ-καῖα, καὶ τὸ Α τῷ μὲν Β μηδὲν ἐνδεχέσθω, τῷ δὲ Γ ὑπάρχει τοῦ μόνου. ἐπεὶ οὖν ἀντιστρέφει τὸ στερητικὸν, οὔδε τῷ Β τῷ Α οὐδεὶ ἐνδεχεται· τῷ δὲ Α παντὶ τῷ Γ ὑπάρχει, ὡστ' οὐδεὶ τῷ Γ τῷ Β ἐνδεχεται· τῷ γὰρ Γ ὑπὸ τῷ Α ἑστὶν. ὡσαύτως δὲ καὶ εἰ πρὸς τῷ Γ τεθείη 2 τὸ στερητικὸν· εἰ γὰρ 15 τῷ Α μηδὲν τῷ Γ ἐνδεχεται, οὔδε τῷ Γ οὐδεὶ τῷ Α ἐγχωρεῖ· τῷ δὲ Α παντὶ τῷ Β ὑπάρχει, 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,\(^a\) and \textit{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.\(^b\) 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.\(^c\) 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

\(^a\) Cf. 26 a 22 note; and for the fallacy see note on 30 a 15-23.

\(^b\) \textit{i.e.} when one of the premisses is negative.

\(^c\) Cf. notes on 26 a 22, 30 a 15-23.
οὔδενι τῶν Β τὸ Π ἐνδέχεται· γίγνεται γὰρ τὸ πρῶτον σχῆμα πάλιν. οὐκ ἀρα οὔδε τὸ Β τῷ Γ· ἀντιστρέφει γὰρ ὁμοίως.

Εἰ δ' ἡ κατηγορικὴ πρὸτασίς ἐστὶν ἀναγκαῖα, οὐκ ἐσται τὸ συμπέρασμα ἀναγκαῖον. ὑπαρχέτω γὰρ τὸ Α παίτι τῷ Β ἐξ ἀνάγκης, τῷ δὲ Γ μηδενὶ ὑπαρχέτω μόνον. ἀντιστραφέντος οὖν τοῦ στερητικοῦ τὸ πρῶτον γίγνεται σχῆμα· δεδεικται δ’ ἐν τῷ πρῶτῳ ὅτι μὴ ἀναγκαίας οὐσης τῆς πρὸς τὸ μείζον στερητικῆς οὐδὲ τὸ συμπέρασμα ἔσται ἀναγκαῖοι, ὥστ’ οὐδ’ ἐπὶ τούτων ἐσται ἐξ ἀνάγκης.

"Εἰτε δ’ εἰ τὸ συμπέρασμα ἐστὶν ἀναγκαῖον, συμβαίνει τὸ Γ τινὶ τῷ Α μὴ ὑπάρχειν ἐξ ἀνάγκης: εἰ γὰρ τὸ Β τῷ Γ μηδενὶ ὑπάρχει ἐξ ἀνάγκης, οὐδὲ τὸ Γ τῷ Β οὔδεν ὑπάρχει ἐξ ἀνάγκης· τὸ δὲ γε Β τινὶ τῷ Α ἀνάγκη ὑπάρχειν, εἰπέρ καὶ τὸ Α παίτι τῷ Β ἐξ ἀνάγκης ὑπήρχειν, ὥστε τὸ Γ ἀνάγκητι τινὶ τῷ Α μὴ ὑπάρχειν. ἄλλ’ οὔδεν κωλύει τὸ Α τοιοῦτον ληφθῆναι ὁ παίτι τὸ Γ ἐνδέχεται ὑπάρχειν.

"Εἰτε κἂν ὅρους ἐκθέμενοι εἰη δείξαι ὅτι τὸ συμπέρασμα οὐκ ἐστὶν ἀναγκαίον ἀπλῶς, ἀλλὰ τούτων ὄντων ἀναγκαίον. οἰον ἐστω τὸ Α ζῶον, τὸ δὲ Β ἀνθρωπος, τὸ δὲ Γ λευκὸν, καί αἱ προτάσεις οἰμοίως εἰλήφθωσαν· ἐνδέχεται γὰρ τὸ ζώον μηδενὶ λευκῷ ὑπάρχειν. οὐχ ὑπάρχει δὴ οὐδ’ ὁ ἀνθρωπος οὔδεν λευκῷ, ἀλλ’ οὖκ εἰ ἀνάγκης· ἐνδέχεται γὰρ ἀνθρωπον γενέσθαι λευκον, οὐ μείνοι ἐως ἃν ζωον μηδενὶ λευκῳ ὑπάρχῃ. ὡστε τούτων μὲν ὄντων ἀναγκαίον ἐσται τὸ συμπέρασμα, ἀπλῶς δ’ οὖκ ἀναγκαίον.

"Ὀμοίως δ’ ἔξει καὶ ἐπὶ τῶν ἐν 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

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PRIOR ANALYTICS, I. x

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\[a\text{ 30 a 23 ff.}\]  \[b\text{ in 30 b 20.}\]
σμῶν. ὅταν μὲν γὰρ ἡ στερητικὴ πρώτασις καθόλου τ' ἢ καὶ ἀναγκαία, καὶ τὸ συμπέρασμα ἔσται ἀναγκαῖον: ὅταν δὲ ἡ κατηγορικὴ καθόλου ἢ δὲ στερητικὴ κατὰ μέρος, οὐκ ἔσται τὸ συμπέρασμα ἀναγκαῖον. ἔστω δὲ πρῶτον ἡ στερητικὴ καθόλου τε καὶ ἀναγκαία, καὶ τὸ Α τῷ μὲν Β μηδενὶ ἑν- ἐδεχέσθω ὑπάρχειν, τῷ δὲ Γ τινὶ ὑπαρχέτω: ἐπει ous ἀντίστρέφει τὸ στερητικὸν, οὐδὲ τὸ Β τῷ Α οὔδενι ἑνδέχοιτ' ἀν ὑπάρχειν τὸ δὲ γε Α τινὶ τῷ Γ ὑπάρχει: ὥστ' εἶ ἀνάγκης τινὶ τῶν Γ οὐχ ὑπάρξει τὸ Β. πάλιν ἔστω ἡ κατηγορικὴ καθόλου τε καὶ ἀναγκαία, καὶ κείσθω πρὸς τῷ Β τὸ κατηγορικὸν· εἰ δὴ τὸ Α παντὶ τῷ Β εἶ ἀνάγκης ὑπάρχει τῷ δὲ Γ τινὶ μη ὑπάρχει, ὅτι μὲν οὐχ ὑπάρξει τὸ Β τινὶ τῷ Γ, φανερὸν, ἀλλ' οὐκ εἶ ἀνάγκης· οἱ γὰρ αὐτοὶ ὀροὶ ἐσονται πρὸς τὴν ἀπόδειξιν οἴπερ ἐπὶ τῶν καθόλου συλλογισμῶν.

'Αλλ' οὐδ' εἰ τὸ στερητικὸν ἀναγκαῖον ἔστιν ἐν μέρει ληφθέν, οὐκ ἔσται τὸ συμπέρασμα ἀναγκαῖον· διὰ γὰρ τῶν αὐτῶν ὀρων ἡ ἀπόδειξις.

XI. 'Εν δὲ τῷ τελευταίῳ σχήματι καθόλου μὲν ὄντων τῶν ὀρων πρὸς τὸ μέσον καὶ κατηγορικῶν ἀμφότερων τῶν προτάσεων, εάν ὀποτερονοῦν ἦ ἀναγκαίον, καὶ τὸ συμπέρασμα ἔσται ἀναγκαῖον· εὰν δὲ τὸ μὲν ἡ στερητικὸν τὸ δὲ κατηγορικὸν, ὅταν μὲν τὸ στερητικὸν ἀναγκαίον ἦ, καὶ τὸ συμπέρασμα ἔσται ἀναγκαῖον, ὅταν δὲ τὸ κατηγορικὸν, οὐκ ἔσται ἀναγκαίον.

'Εστώσαν γὰρ ἀμφότεραι κατηγορικαὶ πρῶτον αἱ προτάσεις, καὶ τὸ Α καὶ τὸ Β παντὶ τῷ Γ ὑπαρχέτωι, ἀναγκαῖον δ' ἔστω τὸ ΑΓ. ἐπει ous τὸ Β παντὶ ὑπάρξει 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 τινὶ τῷ Β ὑπάρξει διὰ τὸ ἀντιστρέφειν τὸ καθόλου τῷ κατὰ μέρος· ὅστ' εἰ παντὶ τῷ Γ τὸ Α εἰς ἀνάγκης ὑπάρχει καὶ τὸ Γ
tῷ Β τινὶ, καὶ τῷ Β τινὶ ἀναγκαῖον ὑπάρχειν τὸ Α·
tὸ γὰρ Β ὑπὸ τὸ Γ ἔστων. γίγνεται οὖν τὸ πρῶτον
σχῆμα. ὁμοίως δὲ διεισθῆσαι καὶ εἰ τὸ ΒΓ
ἔστων ἀναγκαῖον· ἀντιστρέφει γὰρ τὸ Γ τῷ Α τινὶ,
生产总' εἰ παντὶ τῷ Γ τὸ Β εἰς ἀνάγκης ὑπάρχει, καὶ
tῷ Α τινὶ ὑπάρξει εἰς ἀνάγκης.

Ἡλίων ἐστω τὸ μὲν ΑΓ στερητικὸν, τὸ δὲ ΒΓ
καταφατικὸν, ἀναγκαῖον δὲ τὸ στερητικὸν. ἔπει
οὖν ἀντιστρέφει τινὶ τῷ Β τὸ Γ, τὸ δὲ Α οὐδενί
tῷ Γ εἰς ἀνάγκης, οὐδὲ τῷ Β τινὶ ὑπάρξει εἰς
ἀνάγκης τὸ Α· τὸ γὰρ Β ὑπὸ τὸ Γ ἔστων. εἰ δὲ τὸ
κατηγορικὸν ἀναγκαῖον, οὐκ ἔσται τὸ συμπέρασμα
ἀναγκαῖον. ἔστω γὰρ τὸ ΒΓ κατηγορικὸν καὶ
ἀναγκαῖον, τὸ δὲ ΑΓ στερητικὸν καὶ μὴ ἀναγκαῖον.
ἔπει οὖν ἀντιστρέφει τὸ καταφατικὸν, ὑπάρξει καὶ
tῷ Γ τινὶ τῷ Β εἰς ἀνάγκης,生产总' εἰ τὸ μὲν Α

μηδενὶ τῶν Γ τὸ δὲ Γ τινὶ τῶν Β, τὸ Α τινὶ τῶν Β
οὐχ ὑπάρξει· ἄλλον ἄλλον εἰς ἀνάγκης· δεδεκται γὰρ ἐν
tῷ πρῶτῳ σχῆματι οτι τῆς στερητικῆς προτάσεως
μὴ ἀναγκαίας οὕτως οὐδὲ τὸ συμπέρασμα ἔσται
ἀναγκαῖον.

"Ετε καὶ διὰ τῶν ὅρων εἰς φανερὸν. ἐστω γὰρ
τὸ μὲν Α ἄγαθον, τὸ δ' ἐφ' ὡς Β ζώον, τὸ δὲ Γ
ἵππος. τὸ μὲν οὖν ἄγαθον εἰδέχεται μηδενὶ ὕππω
ὑπάρχειν, τὸ δὲ ζώον ἀνάγκη παντὶ ὑπάρχειν· ἄλλο
οὐκ ἀνάγκη ζώον τι μὴ εἶναι ἄγαθον, εἰπὲν ἐν-
δεχεται πάν εἶναι ἄγαθον. ἢ εἰ μὴ τοῦτο δυνατὸν,
ἄλλα τὸ ἐγρηγοροῦν ἐκαθέυδειν ὅρον δετέον· ἀπαν
γὰρ ζώον δεκτικὸν τούτων.

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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.

a The reference is presumably to 30 a 32.
31 b  
Εἰ μὲν οὖν οἱ ὁροὶ καθόλου πρὸς τὸ μέσον εἰσίν, εἰρήται πότε ἔσται τὸ συμπέρασμα ἀναγκαῖον· εἰ δ' ὁ μὲν καθόλου ὁ θ' εὖ μέρει, κατηγορικῶν μὲν ὄντων ἀμφότερων, ὅταν τὸ καθόλου γενήται ἀναγ-
καῖον, καὶ τὸ συμπέρασμα ἔσται ἀναγκαῖον. ἀπό-
δείξει δ' ἡ αὐτὴ ἡ καὶ πρότερον ἀντιστρέφει γάρ καὶ τὸ εὖ μέρει κατηγορικῶν. εἰ οὖν ἀναγκῇ τὸ B 
pατὶ τῷ Γ υπάρχειν, τὸ δὲ A ὑπὸ τὸ Γ ἐστίν, ἀνάγκη τὸ B τινὶ τῷ A υπάρχειν· εἰ δὲ τὸ B τῷ A 
tινὶ, καὶ τὸ Α τῷ B τινὶ υπάρχειν ἀναγκαῖον. 
20 ἀντιστρέφει γάρ. ὁμοίως δὲ καὶ εἰ τὸ ΑΓ εἰη 
ἀναγκαῖον καθόλου οὖν τὸ γάρ B ὑπὸ τὸ Γ ἐστίν. 
Εἰ δὲ τὸ εὖ μέρει ἐστὶν ἀναγκαῖον, οὐκ ἔσται τὸ 
sυμπέρασμα ἀναγκαῖον. ἔστω γάρ τὸ ΒΓ εὖ 
mέρει τε καὶ ἀναγκαῖον, τὸ δὲ A πανί τῷ Γ 
ὑπάρχετω, μὴ μείνῃ εἷς ἀνάγκης· ἀντιστραφέντος 
οὖν τοῦ ΒΓ τὸ πρῶτον γίγνεται σχήμα, καὶ ἡ μὲν 
25 καθόλου πρότασις οὐκ ἀναγκαία, η δ' εὖ μέρει ἀναγκαία. ὥστε δ' οὖτως ἔχοιει αἱ προτάσεις, οὐκ 
ην τὸ συμπέρασμα ἀναγκαῖον ὅστ' οὖθ' ἐπὶ τού-
tων. ἔτι δὲ καὶ ἐκ τῶν ὅρων φανερὸν. ἔστω γάρ 
τὸ μὲν A ἐγρήγορος, τὸ δὲ B διποὺν, ἐφ' ὦ 
dὲ τὸ Γ ζωον· τὸ μὲν οὖν Β τινὶ τῷ Γ ἀνάγ-
80 κή υπάρχειν, τὸ δὲ A τῷ Γ εἰδέχεται, καὶ τὸ A 
tῷ Β οὐκ ἀναγκαῖον· οὐ γάρ ἀνάγκη διποὺν τι 
καθεύθειν ἡ ἐγρηγορέαν· ὁμοίως δὲ καὶ διὰ τῶν 
αὐτῶν ὅρων δειχθῆσεται καὶ εἰ τὸ ΑΓ εἰη ἐν μέρει 
tε καὶ ἀναγκαῖον.

Εἰ δ' ὁ μὲν κατηγορικὸς ὁ δὲ στερητικὸς τῶν

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* 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.'
PRIOR ANALYTICS, I. xi

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

\[c\] Cf. previous note.

\[d\] 30 a 35, b 1 ff.
31 δὲ ὁμοῦ, ὅταν μὲν ἢ τὸ καθόλου στερητικὸν τε καὶ
ἀναγκαίον, καὶ τὸ συμπέρασμα ἐσται ἀναγκαῖον:
εἰ γὰρ τὸ Ἀ τῷ Γ μηδενὶ ἐνδεχεται, τὸ δὲ Β τινὶ
τῷ Γ ὑπάρχει, τὸ Ἀ τινὶ τῷ Β ἀνάγκη μὴ ὑπάρχειν.
ὅταν δὲ τὸ καταφατικόν ἀναγκαίον τεθῇ, ἢ καθόλου
ὁμ. ἢ ἐν μέρει, ἢ τὸ στερητικὸν κατὰ μέρος, οὐκ
ἐσται τὸ συμπέρασμα ἀναγκαίον. τὰ μὲν γὰρ ἄλλα
ταυτά ἢ καὶ ἐπὶ τῶν πρωτέρων ἔρουμεν, ὅροι δὲ
ὅταν μὲν ἢ τὸ καθόλου κατηγορικὸν ἀναγκαίον,
ἐγρήγοροις—ζῷον—ἀνθρωπος, μέσον ἀνθρωπος,
ὅταν δὲ ἐν μέρει τὸ κατηγορικὸν ἀναγκαίον, ἐγρή-
γοροις—ζῷον—λευκὸν (ζῷον μὲν γὰρ ἀνάγκη τινὶ
λευκῷ ὑπάρχειν, ἐγρήγοροις δὲ ἐνδεχεται μηδενὶ,
καὶ οὐκ ἀνάγκη τινὶ ζῷῳ μὴ ὑπάρχειν ἐγρήγοροιν),
ὅταν δὲ τὸ στερητικὸν ἐν μέρει ὃν ἀναγκαίον ἢ,
δίπον—κινούμενον—ζῷον, ζῷον μέσον.1
ΧΙΙ. Φανερὸν οὖν ὅτι τοῦ μὲν ὑπάρχειν οὐκ ἐστὶ
συλλογισμὸς εάν μὴ ἀμφότεραι ὃσιν αἱ προτάσεις
ἐν τῷ ὑπάρχειν, τοῦ δὲ ἀναγκαίον ἐστὶ καὶ τῆς
ἐτέρας μόνον ἀναγκαίας οὕσης. ἐν ἀμφότεροις δὲ,
καὶ καταφατικῶν καὶ στερητικῶν ὄντων τῶν συλ-
λογισμῶν, ἀνάγκη τῆς εὐταραν προτάσιν ὁμοίων
eiναι τῷ συμπέρασματι (λέγω δὲ τὸ ὁμοίων, εἰ μὲν
ὑπάρχον, ὑπάρχουσαν, εἰ δὲ ἀναγκαίον, ἀναγκαίον):
ὡστε καὶ τούτῳ δῆλον, ὅτι οὐκ ἐσται τὸ συμ-
πέρασμα οὐτ' ἀναγκαίον οὐθ' ὑπάρχον εἰναι μὴ
ληφθείσης ἀναγκαίας ἡ ὑπαρχούσης προτάσεως.
15 Περὶ μὲν οὖν τοῦ ἀναγκαίου, πῶς γίγνεται καὶ

1 ζῷον μέσον d², Waitz, ita (sed ζῷον in litura) B: δίπον, μέσον ζῷον Ad¹: δίπον μέσον n: μέσον ζῷον C, Bekker: om. u.

* Cf. 31 a 37 ff., b 20 ff.
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.
tīna διαφορὰν ἔχει πρὸς τὸ ὑπάρχον, εἴρηται σχεδὸν ἰκανῶς. XIII. περὶ δὲ τοῦ εἰνδεχομένου μετὰ ταῦτα λέγομεν πότε καὶ πῶς καὶ διὰ τῶν ἐσται συλλογισμὸς. λέγω δ’ εἰνδέχεσθαι καὶ τὸ εἰνδεχόμενον, οὐ μὴ ὦτος ἀναγκαῖον τεθέντος δ’ ὑπάρχειν, οὐδὲν ἐσται διὰ τούτ’ ἀδύνατον (τὸ γὰρ ἀναγκαῖον ὁμωνύμως εἰνδέχεσθαι λέγομεν). ὅτι δὲ τούτ’ ἐστὶ τὸ εἰνδεχόμενον, φανερὸν ἐκ τῶν ἀποφάσεων καὶ τῶν καταφάσεων τῶν ἀντικειμένων τὸ γὰρ οὐκ εἰνδέχεται ὑπάρχειν καὶ ἀδύνατον ὑπάρχειν καὶ ἀνάγκη μὴ ὑπάρχειν ἦτοι ταῦτα ἐστίν ἡ ἀκολούθει ἀλλήλοις, ὡστε καὶ τὰ ἀντικειμένα τούτοις, τὸ εἰνδέχεται ὑπάρχειν καὶ οὐκ ἀδύνατον ὑπάρχειν καὶ οὐκ ἀνάγκη μὴ ὑπάρχειν, ἦτοι ταῦτα ἐστὶ ἡ ἀκολούθοιτα ἀλλήλοις· κατὰ παντὸς γὰρ ἡ φάσις ἡ ἡ ἀπόφασις ἐστιν. ἐσται ἀρα τὸ εἰνδεχόμενον οὐκ ἀναγκαῖον καὶ τὸ μὴ ἀναγκαῖον εἰνδεχόμενον.

Συμβαίνει δὲ πάσας τὰς κατὰ τὸ εἰνδεχόμενον προτάσεις ἀντιστρέφειν ἀλλήλαις. λέγω δὲ οὐ τὰς καταφατικὰς ταῖς ἀποφατικαῖς, ἀλλ’ ὅσαι καταφατικοὶ ἔχουσι τὸ σχῆμα κατὰ τὴν ἀντίθεσιν, οἷον τὸ εἰνδεχόμενον ὑπάρχειν τῷ εἰνδεχόμενῳ μὴ ὑπάρχειν, καὶ τὸ παντὶ εἰνδεχόμενον τῷ εἰνδεχόμενῳ μὴ ὑπάρχειν, καὶ μὴ παντὶ, καὶ τὸ τοῖς μὴ τινί· τὸν αὐτὸν δὲ τρόπον καὶ ἐπὶ τῶν ἄλλων. ἐπεὶ γὰρ τὸ εἰνδεχό-

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1 φάσις ΑΒ: κατάφασις.

* Cf. 25 a 37.

5 This is not proved by the preceding argument. It is indeed implied there that unless ἀναγκαῖον ὑπάρχει = οὐκ ἀναγκαῖον μὴ ὑπάρχει it cannot be equivalent to εἰνδεχόμενον ὑπάρχει. But one would expect explicit proof of so important a point, and I am therefore disposed to agree with Becker 254.
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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. (I say 'not being necessary') because we apply the term 'possible' equivocally to that which is necessary. 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.

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

\(A.T.M.\) 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  μενον οὐκ ἔστιν ἀναγκαῖον, τὸ δὲ μὴ ἀναγκαῖον ἐγχωρεῖ μὴ ὑπάρχειν, φανερὸν ὅτι εἰ ενδεχεται τὸ A τῷ B ὑπάρχειν, ἐνδεχεται καὶ μὴ ὑπάρχειν· καὶ εἰ παντὶ ἐνδεχεται ὑπάρχειν, καὶ παντὶ ἐνδεχεται
b μὴ ὑπάρχειν. ὀμοίως δὲ κατὶ τῶν ἐν μέρει καταφάσεων· ἡ γὰρ αὐτὴ ἀπόδειξις. εἰςὶ δ᾿ αἱ τοιαῦται προτάσεις κατηγορικαὶ καὶ ὑπὸ στερητικαί· τὸ γὰρ ἐνδεχεσθαι τῷ εἶναι ὀμοίως τάττεται, καθάπερ ἑλέχθη πρότερον.

6 Διωρισμένων δὲ τούτων πάλιν λέγομεν ὅτι τὸ ἐνδεχεσθαι κατὰ δύο λέγεται τρόποις, ἕνα μὲν τὸ ὡς ἐπὶ τὸ πολὺ γίγνεσθαι καὶ διαλείπειν τὸ ἀναγκαῖον, οἷον τὸ πολιοῦσθαι ἄνθρωπον ἡ τὸ αὐξάνεσθαι ἡ φθίνειν, ἡ δὲς τὸ πεφυκὸς ὑπάρχειν (τούτῳ γὰρ οὐ συνεχὴς μὲν ἔχει τὸ ἀναγκαῖον διὰ τὸ μὴ ἀεὶ εἶναι ἄνθρωπον, οὕτως μὲντοι ἄνθρωπον ἡ ἐξ ἀνάγκης ἡ ὡς ἐπὶ τὸ πολὺ ἔστιν), ἀλλὰ δὲ τὸ ἀόριστον, ὁ καὶ οὐτως καὶ μὴ οὕτως δυνατόν, οἷον τὸ βαδίζειν ζωὴν ἡ τὸ βαδίζοντος γενέσθαι σεισμὸν, ἡ δὲς τὸ ἀπὸ τῆς γεγονόμενον οὐδὲν γὰρ μᾶλλον οὕτως πέφυκεν ἡ ἐναιτίας. ἀντιστρέφει μὲν οὖν καὶ κατὰ τὰς ἀντικειμένας προτάσεις ἐκάτερον τῶν ἐνδεχομένων, οὐ μὴν τῶν αὐτῶν γε τρόπον, ἀλλὰ τὸ μὲν πεφυκὸς εἶναι δὲ μὴ ἐξ ἀνάγκης ὑπάρχειν (οὕτω γὰρ ἐνδεχεσθαι μὴ πολιοῦσθαι ἄνθρωπον), τὸ δ᾿ ἀόριστον τῷ μηδὲν μᾶλλον οὕτως ἐκεῖνως.

* 25 b 21.

b 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 premises 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.\(^b\)
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32 b

'Επιστήμη δὲ καὶ συλλογισμὸς ἀποδεικτικὸς τῶν μὲν ἀδικότων οὐκ ἦστι διὰ τὸ ἄτακτον εἶναι τὸ μέσον, τῶν δὲ περικότων ἦστι, καὶ σχέσεων οἱ λόγοι καὶ αἱ σκέψεις γίγνονται περὶ τῶν οὕτως ἐνδεχομένων· ἐκεῖνων δὲ ἐγχωρεῖ μὲν γενέσθαι συλλογισμὸν, οὐ μὴν εἰσθῇ γε ζητεῖσθαι.

Ταῦτα μὲν οὖν διορισθῆσαι μᾶλλον ἐν τοῖς ἐπομένοις· τῶν δὲ λέγομεν πότε καὶ τίς ἦσται συλλογισμὸς ἐκ τῶν ἐνδεχομένων προτάσεως.

'Επεὶ δὲ τὸ ἐνδεχόσθαι τόδε τῶδε ὑπάρχειν διχῶς ἦστιν ἐκλαβεῖν· η γὰρ ὑπάρχει τόδε Ἦ ἦ ἐνδέχεται αὐτὸ ὑπάρχειν (τὸ γὰρ καθ' οὐ τὸ Β τὸ Α ἐνδέχεσθαι τούτων σημαίνει θάτερον, ἦ καθ' οὐ λέγεται τὸ Β ἦ καθ' οὐ ἐνδέχεται λέγεσθαι, τὸ δὲ καθ' οὐ τὸ Β τὸ Α ἐνδέχεσθαι ἦ παντὶ τῷ Β τὸ Α ἐγχωρεῖν οὐδὲν διαφέρει). φανερὸν ὅτι διχῶς ἀν λέγοιτο τὸ Α τῷ Β παντὶ ἐνδέχεσθαι ὑπάρχειν. πρῶτον οὖν εἴπωμεν, εἰ καθ' οὐ τὸ Γ τὸ Β ἐνδέχεται, καὶ καθ' οὐ τὸ Β τὸ Α, τίς ἦσται καὶ ποῖος συλλογισμὸς· οὕτω γὰρ αἱ προτάσεις ἀμφότεραι λαμβάνονται κατὰ τὸ ἐνδεχόσθαι, ὅταν δὲ


b There is no obvious fulfilment of this promise. Jenkins 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 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' οὐ τὸ Β ὑπάρχει τὸ Ἀ ἐνδέχεται, ἣ μὲν ὑπάρχουσα ἢ δ' ἐνδεχομένη: ὥστ' ἀπὸ τῶν ὀμοιοσχημώνι ἀρκτέον, καθάπερ καὶ ἐν τοῖς ἄλλοις.

XIV. Ὑποθέσον τὰ παραπάνω. Ἐπειτα τῷ Α παντὶ τῷ Β ἐνδέχεται ὑπάρχειν τὸν Β καὶ τὸ Γ συνλογισμὸς ἐσται τέλειος ὅτι τὸ A παντὶ τῷ Γ ἐνδέχεται ὑπάρχειν. τούτῳ δὲ φανερὸν ἐκ τοῦ ὀρισμοῦ· τὸ γὰρ ἐνδέχεσθαι παντὶ ὑπάρχειν οὔτως ελέγομεν. ὀμοιοις δὲ καὶ εἰ τὸ μὲν Α ἐνδέχεται μηδενὶ τῷ Β τὸ δὲ Β παντὶ τῷ Γ, ὅτι τὸ Α ἐνδέχεται μηδενὶ τῷ Γ· τὸ γὰρ καθ' οὐ τὸ Β ἐνδέχεται τὸ Α μὴ ἐνδέχεσθαι τούτ' ἢν, τὸ μηδὲν ἀπολείπειν τῶν ὑπὸ τὸ Β ἐνδεχομένων.

"Ὅταν δὲ τὸ Α παντὶ τῷ Β ἐνδέχεται τὸ δὲ Β ἐνδέχεται μηδενὶ τῷ Γ, διὰ μὲν τῶν εἰλημμένων προτάσεων οὐδεὶς γίγνεται συνλογισμός, ἀντιστραφεῖσις δὲ τῆς ΒΙ' κατὰ τὸ ἐνδέχεσθαι γίγνεται ὁ αὐτὸς ὀσπερ πρότερον. ἐπεὶ γὰρ ἐνδέχεται τὸ Β μηδενὶ τῷ Γ ὑπάρχειν, ἐνδέχεται καὶ παντὶ ὑπάρχειν (τούτῳ δ' εἴρηται πρότερον), ὥστ' εἰ τὸ μὲν Β παντὶ τῷ Γ τὸ δ' Α παντὶ τῷ Β, πάλιν ὁ αὐτὸς γίγνεται συνλογισμός. ὀμοιοὶς δὲ καὶ εἰ πρὸς ἀμφοτέρας τὰς προτάσεις ἡ ἀπόφασις τεθείη μετὰ τοῦ ἐνδέχεσθαι· λέγω δ' οὖν εἰ τὸ Α ἐνδέχεται μηδενὶ τῶν Β καὶ τὸ Β μηδενὶ τῶν Γ· διὰ μὲν γὰρ τῶν εἰλημμένων προτάσεων οὐδεὶς γίγνεται συνλογισμός, ἀντιστρεφομένων δὲ πάλιν ὁ αὐτὸς ἐσται ὡς καὶ πρότερον. φανερὸν οὖν ὅτι τῆς ἀποφάσεως τιθεμένης πρὸς τὸ ἐλαττὸν ἄκρον ἡ πρὸς ἀμφοτέρας τὰς προτάσεις ἡ οὐ γίγνεται συνλογισμός ἡ γίγνεται μὲν ἄλλ' οὖ τέλειος· ἐκ γὰρ τῆς ἀντιστροφῆς γίγνεται τὸ ἀναγκαῖον.

1 ὀμοιοσχήμων 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.
'Εάν δ’ ἢ μὲν καθόλου τῶν προτάσεων ἢ δ’ ἐν 
μέρει ληφθῇ, πρὸς μὲν τὸ μείζων ἀκρον κειμένης 
τῆς καθόλου συλλογισμὸς ἔσται τέλειος. εἰ γὰρ 
tὸ Α παντὶ τῷ B ἐνδέχεται τὸ δὲ B τινὶ τῷ Γ, τὸ 
Α τινὶ τῷ Γ ἐνδέχεται: τούτῳ δὲ φανερὸν ἐκ τοῦ 

ὁρισμοῦ τοῦ ἐνδέχεσθαι παντὶ.1 πάλιν εἰ τὸ A 
ἐνδέχεται μηδενί τῷ B τὸ δὲ B τινὶ τῶν Γ ἐνδέχεται 
ὑπάρχειν, ἀνάγκη τὸ A ἐνδέχεσθαι τινὶ τῶν Γ μὴ 
ὑπάρχειν ἀπόδειξις δ’ ἢ αὐτῆ. εἰν δὲ στερητικῇ 
ληφθῇ ἢ ἐν μέρει πρότασις ἢ δὲ καθόλου κατα-
φατικῇ, τῇ δὲ θέσει ὁμοίως ἔχοσι—ολον τὸ μὲν 

Α παντὶ τῷ B ἐνδέχεται τὸ δὲ B τινὶ τῷ Γ 
ἐνδέχεται μὴ ὑπάρχειν—διὰ μὲν τῶν εἰλημμένων 

προτάσεων οὐ γίγνεται φανερὸς συλλογισμός, ἀντι-

στραφείσης δὲ τῆς ἐν μέρει καὶ τεθέντος τοῦ B 
tινὶ τῷ Γ ἐνδέχεσθαι ὑπάρχειν τὸ αὐτὸ ἐσται 

συμπέρασμα δ’ καὶ πρότερον, καθάπερ ἐν τοῖς ἐξ 

ἄρχης.

'Εάν δ’ ἢ πρὸς τὸ μείζων ἀκρον ἐν μέρει ληφθῇ 
ἡ δὲ πρὸς τὸ ἐλαττον καθόλου, ἐάν τ’ ἀμφότεραι 
καταφατικὰ τεθῶσιν ἐὰν τε στερητικά ἐὰν τε 

μὴ ὀμοιοσχήμονες ἕάν τ’ ἀμφότεραι ἀδιόριστοι ἢ 
κατὰ μέρος, οὐδαμῶς ἔσται συλλογισμὸς· οὐδὲν γὰρ 
κωλύει τὸ B ὑπερτείνειν τοῦ Α καὶ μὴ κατηγορεῖ-

σθαί ἐπ’ ίσων· ὦ δ’ ὑπερτείνει τὸ B τοῦ Α, εἰλήφθω 

τὸ Γ· τούτῳ γάρ οὔτε παντὶ οὔτε μηδενὶ οὔτε τινὶ 
οὔτε μὴ τινὶ ἐνδέχεται τὸ A ὑπάρχειν, εἰπερ ἀντι-

στρέφουσιν αἱ κατὰ τὸ ἐνδέχεσθαι προτάσεις καὶ 
tὸ B πλείον ἐνδέχεται ἢ τὸ A ὑπάρχειν. ἐτὶ δὲ 
καὶ ἐκ τῶν ὄρων φανερῶν οὔτω γὰρ ἔχουσιν

1 παντὶ (deleto, quod cet. omnes fere habent codd., abγ')
B: om. Bekker.

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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 no syllogism, 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

a 32 b 25 ff. b l. 24. c 32 b 5-17. 263
6 των προτάσεων τὸ πρῶτον τῷ ἐσχάτῳ καὶ οὐδὲν ἐνδέχεται καὶ παντὶ ὑπάρχειν ἀναγκαῖον. ὥροι δὲ κοινοὶ πάντων τοῦ μὲν ὑπάρχειν εἰς ἀνάγκης λευκοῦ—ἀνθρώπος, τοῦ δὲ μὴ ἐνδέχεσθαι λευκοῦ—ιμάτιον.

Φανερὸν οὖν τούτων τὸν τρόπον ἐχόντων τῶν ὅρων ὅτι οὐδεὶς γίγνεται συλλογισμός. ἦ γὰρ τοῦ ὑπάρχειν ἢ τοῦ εἰς ἀνάγκης ἢ τοῦ ἐνδέχεσθαι πᾶς ἐστὶ συλλογισμός. τοῦ μὲν οὖν ὑπάρχειν καὶ τοῦ ἀναγκαίου φανερὸν ὅτι οὐκ ἐστιν, ὡς γὰρ κατα- φατικὸς ἀναρέωτι τῶν στερητικῶν, ὁ δὲ στερητικὸς τῷ καταφατικῷ. λείπεται ὅτι τοῦ ἐνδέχεσθαι εἶναι· τούτῳ δὲ ἄδυνατον· δεδεκται γὰρ ὅτι οὕτως ἐχόντων τῶν ὅρων καὶ παντὶ τῷ ἐσχάτῳ τὸ πρῶτον ἀνάγκη καὶ οὐδὲν ἐνδέχεται ὑπάρχειν· ὥστ' οὐκ ἂν εἴη τοῦ ἐνδέχεσθαι συλλογισμός· τὸ γὰρ ἀναγκαίον οὐκ ἦν ἐνδεχόμενον.

Φανερὸν δὲ ὅτι καθόλου τῶν ὅρων οὕτων ἐν ταῖς ἐνδεχομέναις προτάσεσιν ἰσιώτερον γίγνεται συλλογισμὸς ἐν τῷ πρῶτῳ σχήματι, καὶ κατηγορικῶν καὶ στερητικῶν οὕτων, πλὴν κατηγορικῶν μὲν τέλεως, στερητικῶν δὲ ἀτελῆς.

Δεῖ δὲ τὸ ἐνδέχεσθαι λαμβάνειν μὴ ἐν τοῖς ἀναγκαίοις, ἀλλὰ κατὰ τὸν εἰρθμένον διορισμόν· ἐνίστε δὲ λανθάνει τὸ τοιοῦτον.

25 XV. Ἐὰν δ' ἡ μὲν ὑπάρχειν ἡ δ' ἐνδέχεσθαι λαμβάνηται τῶν προτάσεων, ὅταν μὲν ἡ πρὸς τὸ μείζον ἄκρον ἐνδέχεσθαι σημαίνη, τέλειοί τ' ἔσονται πάντες οἱ συλλογισμοὶ καὶ τοῦ ἐνδέχεσθαι κατὰ τὸν εἰρθμένον διορισμόν, ὅταν δ' ἡ πρὸς τὸ

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

\[ b \ 32 \ a \ 28. \quad c \ 32 \ a \ 18. \quad d \ 32 \ a \ 18. \]
33 b ἐλαττον, ἀτελεῖς τε πάντες, καὶ οἱ στερητικοὶ τῶν
30 συλλογισμῶν οὗ τοῦ κατὰ τὸν διορισμὸν ἐνδεχο-
μένου, ἀλλὰ τοῦ μηδενὶ ἢ μὴ παντὶ εἰς ἀνάγκης
ὑπάρχειν· εἰ γὰρ μηδενὶ ἢ μὴ παντὶ εἰς ἀνάγκης,
ἐνδεχεσθαί φαμεν καὶ μηδενὶ καὶ μὴ παντὶ ὑπάρχειν.
'Ενδεχέσθω γὰρ τὸ Α παντὶ τῷ Β, τὸ δὲ Β
παντὶ τῷ Γ κείσθω ὑπάρχειν· ἐπεὶ οὖν ὑπὸ τὸ Β
35 ἑστὶ τὸ Γ τῷ δὲ Β παντὶ ἐνδέχεται τὸ Α, φανερὸν
ὅτι καὶ τῷ Γ παντὶ ἐνδέχεται. γίγνεται δὴ τέλειος
συλλογισμός. ὀμοίως δὲ καὶ στερητικῆς οὐσις
τῆς ΑΒ προτάσεως τῆς δὲ ΒΓ καταφατικῆς,
καὶ τῆς μὲν ἐνδεχεσθαι τῆς δὲ ὑπάρχειν λαμ-
βανούσης, τέλειος συλλογισμός ὅτι τὸ Α ἐνδέχεται
40 μηδενὶ τῷ Γ ὑπάρχειν.
34 a Ὁτι μὲν οὖν τοῦ ὑπάρχειν τιθεμένου πρὸς τὸ
ἐλαττον ἀκρον τέλειοι γίγνονται συλλογισμοί,
φανερὸν· ὅτι δ' ἐναντίως ἔχοιτο χύσονται συλ-
λογισμοί διὰ τοῦ ἀδυνάτου δεικτέον· ἀμα δ' ἑσται
dήλων καὶ ὅτι ἀτελεῖς· ἢ γὰρ δεῖξεις οὐκ ἐκ τῶν
5 εἰλημμενῶν προτάσεων.
Πρῶτον δὲ λεκτέον ὅτι εἰ τοῦ Α όντος ἀνάγκη
tοῦ Β ἐλναι, καὶ δυνατοῦ όντος τοῦ Α δυνατὸν ἑσται
τὸ Β εἰς ἀνάγκης. ἑστω γὰρ οὖτως ἔχοιτων τὸ
μὲν ἐφ' ὁ τοῦ Α δυνατον, τὸ δ' ἐφ' ὁ τοῦ Β ἀδύ-
νατον. εἰ οὖν τὸ μὲν δυνατὸν, οτὲ δυνατὸν εἶλαι,
10 γένοιτ' ἄν, τὸ δ' ἀδύνατον, ὅτ' ἀδύνατον, οὐκ
ἄν γένοιτο, ἀμα δ' εἰ τοῦ Α δυνατον καὶ τοῦ Β ἀδύνατον,
ἐνδέχοιτ' ἄν τὸ Α γενέσθαι ἄνευ τοῦ Β, εἰ δὲ

* 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

\(^{c}\text{Cf. Metaphysics, IX. (Θ) 1047 b 14-30.}\)

\(^{d}\text{i.e. that A implies B.}\)
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geneštai, kai elnai: to vàr, gegovos, óte gégonev, éstw. deì de lambránenv, u hu mónon èn tì génése to adúnaton kai dynaton, alla kai èn tì álì-

15 thewéstai kai èn tì úparxèn, kai ósaxois ìllws légetai to dynaton: èn ápasi vàr ómôiws éxes. éti to óntos tou A to B elnai oux ñs ènós tinos óntos tou A to B ùstai deì upolabeîn ou vàr èstiv ouðèn ñs ánágykhs ènós tinos óntos, ìllà dvoí ìlaixístou, òion òtan ai protásies ountos èxwoun ñs èlexhì kата tòn sullogismôn: èi vàr
to Γ kata tou Δ to de Δ kata tou Z, kai to Γ kata tou Z ñs ánágykhs: kai ei dynaton ñ tì ekásteron, kai to suèperáisma dynaton. ósper oux ei tìs
theì to ìnè tìs protásies to de B to suè-
pérasma, ìmbráinou ìnv ou mònon ánagykaion tou
A óntos kai to B elnai ánagykaion, ìllà kai
dynaton dynaton.

25 Toûtoù de deughrêitos faîneron õti ìeúdoùs úpo-
tètheîtos kai ìh adúnaton kai to ìmbráinou dià
tìn úpòtheín ìeúdo eòstai kai ouk adúnaton.
ìou ai to A ìeúdoùs mèn ùstì ìh mèntoi adúnaton,
óntos de tou A to B èstì, kai to B èstai ìeúdoùs
mèn ou mèntoi adúnaton. èpex vàr deudiktai õti
ei tou A óntos tou B èstì, kai dynaton óntos tou
A èstai to B dynaton, úpòkeitaì de to A dynaton
elnai, kai to B èstai dynaton: ei vàr adúnaton,
áma dynaton èstai to autò kai adúnaton.

Dìwrismènov õî touûn úparxètov to A panti
tò B, to de B panti tò Γ èndexésdov: ánagykh

* 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.

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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 a 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 b 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

\[ B \]

For the sense of ‘false’ here see 34 a 37.
ARISTOTLE

οὗν τὸ Α παντὶ τῷ Γ ἐνδεχεσθαι ὑπάρχειν. μὴ γὰρ ἐνδεχέσθω, τὸ δὲ Β παντὶ τῷ Γ κείσθω ὡς ὑπάρχων. τούτῳ δὲ ψεῦδος μὲν οὐ μέντοι ἀδύνατον. εἰ οὗν τὸ μὲν Α μὴ ἐνδεχεται τῷ Γ τὸ δὲ B παντὶ ὑπάρχει τῷ Γ, τὸ A οὐ παντὶ τῷ B ἐνδεχεται. γίγνεται γὰρ συνλογισμὸς διὰ τοῦ τρίτου σχήματος. ἀλλ' ὑπέκειτο παντὶ ἐνδεχεσθαι ὑπάρχειν ἀνάγκη

34 b ἀρα τὸ Α παντὶ τῷ Γ ἐνδεχεσθαι. ψεῦδος γὰρ τεθέντος καὶ οὐκ ἀδύνατον τῷ συμβαίνον ἐστιν ἀδύνατον.

* i.e. it is not implied by the original premiss. Cf. Alexander 185. 16-20: Becker, A.T.M. 55 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, μὴ ἐνδεχεται 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 B. 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)

(b) must be incompatible with (a)]

. . . (c), the contrary of (b), 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 $G_1 \xi$ & $G_2 \xi$ unmöglich ist in bezug auf $F_\xi$,

$G_2 \xi$ dagegen möglich ist

$G_1 \xi$ 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 con-
clusion (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 in-
compatible 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.
'Εγχωρεί δὲ καὶ διὰ τοῦ πρώτου σχήματος
ποιήσαι τὸ ἀδύνατον θέται τὰ τῷ Γ τὸ Β υπάρχειν:
eι γὰρ τὸ Β παντὶ τῷ Γ υπάρχει τὸ δὲ Α παντὶ τῷ
Β ἐνδεχεται, κἂν τῷ Γ παντὶ εἰνδέχοιτο τὸ Α·
ἀλλ' ὑπέκειτο μὴ παντὶ ἐγχωρεῖν.

Δεῦ δὲ λαμβάνειν τὸ παντὶ ὑπάρχειν μή κατά
χρόνον ὁρίσαντας, οἷον νῦν ἡ ἐν τῶδε τῷ χρόνῳ,
ἀλλ' ἀπλῶς: διὰ τοιούτων γὰρ προτάσεων καὶ τῶν
συλλογισμῶν ποιούμεν, ἐπεὶ κατά γε τὸ νῦν
λαμβανομένης τῆς προτάσεως οὐκ ἔσται συλλο-
γισμὸς: οὐδὲν γὰρ ἰσως κωλύει ποτὲ καὶ παντὶ
κινούμενῳ ἀνθρωπον υπάρχειν, οἷον εἰ μὴδὲν ἀλλο
κινοῖτο: τὸ δὲ κινούμενον ἐνδεχεται παντί ἵππω·
ἀλλ' ἀνθρωπον οὐδενὶ ἵππῳ ἐνδεχεται. έτι ἐστω
τὸ μὲν πρῶτον ζῶον, τὸ δὲ μέσον κινούμενοι, τὸ
δ' ἐσχατον ἀνθρωπος: αἱ μὲν οὖν προτάσεις ὁμοίως
εξουσι, τὸ δὲ συμπέρασμα ἀναγκαῖον, οὐκ ἐνδεχό-

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a 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 (e) All graduates may be wise,
which is therefore compatible with (a) and (b). Hence (d),
the contradictory of (e), is incompatible with (a) and (b), and
therefore false. Therefore (e) is true.

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

b 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
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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.\(^a\)

We must understand the expression 'applying to all,' not as qualified in respect of time,\(^b\) 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: \(i.e.,\) 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

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 \(οὐδέν καλάλει,\) 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. \(Cf.\) Introd. p. 188.
μενον' ἐξ ἀνάγκης γὰρ ὁ ἀνθρωπος ζων. φανερὸν οὖν ὅτι τὸ καθόλου ληπτέον ἀπλώς, καὶ οὐ χρόνω διορίζοντας.

Πάλιν ἐστὶν στερητικὴ πρότασις καθόλου ἡ ΑΒ, καὶ εἰλήφθη τὸ μὲν Α μηδενί τῷ Β ὑπάρχειν, τὸ δὲ Β παντὶ ἐνδεχόμεθα ὑπάρχειν τῷ Γ. τούτων οὖν τεθέντων ἀνάγκη τὸ Α ενδεχόμεθα μηδενὶ τῷ Γ ὑπάρχειν. μὴ γὰρ ἐνδεχόμεθα, τὸ δὲ Β τῷ Γ κείσθω ὑπάρχον, καθάπερ πρότερον ἀνάγκη δὴ τὸ Α τινὶ τῷ Β ὑπάρχειν γίγνεται γὰρ συλλογισμὸς διὰ τοῦ τρίτου σχῆματος. τοῦτο δὲ ἀδύνατον οὗτ' ἐνδεχομέν' ἀν τὸ Α μηδενὶ τῷ Γ. ψεύδους γὰρ τεθέντος ἀδύνατον τὸ συμβαίνον. οὕτως οὖν ὁ συλλογισμὸς οὓς ἐστὶν τοῦ κατὰ τὸν διορισμὸν ἐνδεχομένου, ἀλλὰ τοῦ μηδενὶ ἐξ ἀνάγκης· αὕτη γὰρ ἐστιν ἡ ἀντίφασις τῆς γενομένης ὑποθέσεως, ἐτέθη γὰρ ἐξ ἀνάγκης τὸ Α τινὶ τῷ Γ ὑπάρχειν, ὁ δὲ διὰ τοῦ ἀδυνάτου συλλογισμὸς τῆς ἀντικειμενής ἐστιν ἀντιφάσεως.

'Ετι δὲ καὶ ἐκ τῶν ὁρών φανερὸν ὅτι οὐκ ἐσται τὸ συμπέρασμα ἐνδεχόμενον. ἐστὶν γὰρ τὸ μὲν Α κόραξ, τὸ δ' ἐφ' ὧν διανοοῦμεν, ἐφ' ὧν δὲ Γ. ἀνθρωπος· οὐδενὶ δὴ τῷ Β τὸ Α ὑπάρχει, οὐδὲν γὰρ διανοοῦμεν κόραξ· τὸ δὲ Β παντὶ ἐνδεχεται τῷ Γ, παντὶ γὰρ ἀνθρώπω τὸ διανοεῖσθαι· ἀλλὰ τὸ Α ἐξ ἀνάγκης οὔδενι τῷ Γ· οὐκ ἀρα τὸ συμπέρασμα ἐνδεχόμενον. ἀλλ' οὐδ' ἀναγκαίον ἀεὶ.

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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 ἀδύνατον, 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.

\(^f\) This excludes the possibility that A may apply to all C, which would be implicit in a truly problematic conclusion.

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34 b

ἐστώ γὰρ τὸ μὲν Α κινούμενον, τὸ δὲ Β ἐπιστῆμη, τὸ δ’ εὖ ὡς Γ ἀνθρώπος. τὸ μὲν οὖν Α οὐδεὶς τῷ

40 Β ὑπάρξει, τὸ δὲ Β παντὶ τῷ Γ ἐνδέχεται, καὶ

οὐκ ἐσται τὸ συμπέρασμα ἀναγκαῖον οὔ γὰρ

35 a

ἀνάγκη μηδένα κινεῖσθαι ἀνθρώπον, ἀλλ’ οὐκ ἀνάγκη τινὰ. δὴ λοιπὸν οὖν ὅτι τὸ συμπέρασμα ἐστὶ
tοῦ μηδενί ἐξ ἀνάγκης ὑπάρχειν. ληπτέον δὲ

βέλτιον τοὺς ὅρους.

'Εάν δὲ τὸ στερητικὸν τεθῇ πρὸς τὸ ἐλαττὸν ἀκρον ἐνδέχεσθαι σημαίνει, ἐξ αὐτῶν μὲν τῶν

5 εἰλημμένων προτάσεων οὐδεὶς ἐσται συλλογισμός,

ἀντιστραφεῖσθα τῆς κατὰ τὸ ἐνδέχεσθαι προ-
tάσεως ἐσται, καθάπερ ἐν τοῖς πρότεροι. ὑπ-

αρχέτω γὰρ τὸ Α παντὶ τῷ Β, τὸ δὲ Β ἐνδεχέσθων

μηδενὶ τῷ Γ. οὔτω μὲν οὖν ἐχόντων τῶν ὅρων

οὐδὲν ἐσται ἀναγκαῖον εὰν δ’ ἀντιστραφῇ τὸ ΒΓ

10 καὶ ληθῇ τὸ Β παντὶ τῷ Γ ἐνδέχεσθαι, γίγνεται

συλλογισμὸς ὡσπερ πρότερον ὁμοίως γαρ ἑξούσιοι

οὶ ὅροι τῇ θέσει. τον αὐτὸν δὲ τρόπον καὶ στερη-
tικῶν ὁντων ἀμφότερων τῶν διαστημάτων, εάν τὸ

μὲν ΑΒ μὴ ὑπάρχῃ, τὸ δὲ ΒΓ μηδενὶ ἐνδέχεσθαι

σημαίνει δ’ αὐτῶν μὲν γὰρ τῶν εἰλημμένων

15 οὐδαμῶς γίγνεται ἀναγκαῖον, ἀντιστραφεῖσθα

tῆς κατὰ τὸ ἐνδέχεσθαι προτάσεως ἐσται

συλλογισμός. εἰλθῇ γὰρ τὸ μὲν Α μηδενὶ τῷ

Β ὑπάρξῃ,1 τὸ δὲ Β ἐνδέχεσθαι μηδενὶ τῷ Γ · διὰ

μὲν οὖν τούτων οὐδὲν ἀναγκαῖον, εάν δὲ ληθῇ τὸ

Β παντὶ τῷ Γ ἐνδέχεσθαι, ὅπερ ἐστὶν αληθὲς, ἢ

20 δὲ ΑΒ πρότασις ὁμοίως ἑχῃ, πάλιν οὗ αὐτὸς ἐσται

1 ὑπάρξῃ n.
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-

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

b 33 a 7, 16. c 34 a 34.
ARISTOTLE

συλλογισμός. εάν δὲ μὴ ύπάρχειν τεθῇ τὸ Β παντὶ τῷ Γ καὶ μὴ ἐνδέχεσθαι μὴ ύπάρχειν, οὐκ ἔσται συλλογισμὸς οὐδαμῶς, οὔτε στερητικὴς οὕσης οὔτε καταφατικῆς τῆς ΑΒ προτάσεως. ὅροι δὲ κοινοὶ τοῦ μὲν εἰς ἀνάγκης ύπάρχειν λευκὸν —ζῷον—χιόν, τοῦ δὲ μὴ ἐνδέχεσθαι λευκὸν—ζῷον
—πίττα.

25 Φανερῶν οὖν ὅτι καθόλου τῶν ὅρων οὖν καὶ τῆς μὲν ὑπάρχειν τῆς δ' ἐνδέχεσθαι λαμβανομένης τῶν προτάσεων, ὅταν ἡ πρὸς τὸ ἐλαττον ἄκρον ἐνδέχεσθαι λαμβάνεσθαι προτάσις, ἀεὶ γίγνεται συλλογισμός, πλὴν ὅτε μὲν εἰς αὐτῶν ὅτε δ' ἀντιστραφεῖσθι τῆς προτάσεως: πότε δὲ τούτων ἑκάτερος καὶ διὰ τιν' αἰτίαν, εἰρήκαμεν.

Ἐάν δὲ τὸ μὲν καθόλου τὸ δ' ἐν μέρει λήφθη
tῶν διαστημάτων, ὅταν μὲν τὸ πρὸς τὸ μείζον ἄκρον καθόλου τεθῇ καὶ ἐνδεχόμενον, εἰτε ἀποφατικών εἰτε καταφατικῶν, τὸ δ' ἐν μέρει κατα-
φατικών καὶ ύπάρχουν, ἐσται συλλογισμὸς τέλειος,
30 καθάπερ καὶ καθόλου τῶν ὅρων οὖν. ἀπόδειξις
d' ἡ αὐτὴ ἢ καὶ πρότερον. ὅταν δὲ καθόλου μὲν ἢ
tὸ πρὸς τὸ μείζον ἄκρον, ύπάρχουν δὲ καὶ μὴ ἐνδεχόμενον, θάτερον δ' ἐν μέρει καὶ ἐνδεχόμενον,
εάν τ' ἀποφατικαί εάν τε καταφατικαὶ τεθῶσιν ἀμφότεραι εάν τε ἡ μὲν ἀποφατικὴ ἢ δὲ κατα-

35 ἐκάτερος ἐσται συλλογισμὸς ἀτέλης: πλὴν

οἱ μὲν διὰ τοῦ ἀδυνάτου δειχθῆσονται οἱ δὲ διὰ τῆς ἀντιστροφῆς τῆς τοῦ ἐνδέχεσθαι, καθάπερ ἐν
toῖς πρότερον.

"Εσται δὲ συλλογισμὸς διὰ τῆς ἀντιστροφῆς καὶ

ὅταν ἡ μὲν καθόλου πρὸς τὸ μείζον 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

\(^a\) Cf. 34 b 19. \(^b\) 33 b 33 ff.
σημαινὴ τὸ ὑπάρχειν ἡ μὴ ὑπάρχειν, ἡ δ' ἐν μέρει

υπερηπτικὴ οὐσα τὸ ἐνδέχεσθαι λαμβάνῃ, οἶον εἰ
tὸ μὲν Ἀ παντὶ τῷ Ὁ ὑπάρχει ἡ μὴ ὑπάρχει, τὸ
dὲ Β τοι τῷ Γ ἐνδέχεται μὴ ὑπάρχειν ἀντιστρα-
φέντος γὰρ τοῦ ΒΓ κατὰ τὸ ἐνδέχεσθαι γίγνεται
συλλογισμὸς. οὖταν δὲ τὸ μὴ ὑπάρχειν λαμβάνῃ
ἡ κατὰ μέρος τεθεῖσα, οὐκ ἐσται συλλογισμὸς.
10 ὅροι τοῦ μὲν ὑπάρχειν λευκὸν—ζωον—χιών, τοῦ
dὲ μὴ ὑπάρχειν λευκὸν—ζωον—πίττα. διὰ γὰρ τοῦ
ἀδιορίστου ληπτεὸν τὴν ἀπόδειξιν.

Εὰν δὲ τὸ καθόλου τεθῆ πρὸς τὸ ἐλαττὸν ἀκρὸν
tὸ δ' ἐν μέρει πρὸς τὸ μεῖζον, ἐὰν τε στερητικὸν
eὰ τε καταφατικὸν εὰν τ' ἐνδεχόμενον εὰν ἑρ
ὑπάρχον ὀποτερονοῦν, οὐδαμῶς ἐσται συλλογισμὸς.
15 οὐδ' ὅταν εὖ μέρει ἡ ἄδιοριστοι τεθῶσιν αἱ προ-
tάσεις, εἰτ' ἐνδέχεσθαι λαμβάνουσιν εἰθ' ὑπάρχειν
eἰτ' ἕναλλάξ, οὐδ' οὕτως ἐσται συλλογισμὸς ἀπό-
δειξις δ' ἡ αὐτὴ ἡ κατὶ τῶν πρῶτον. ὅροι δὲ
cοινοὶ τοῦ μὲν ὑπάρχειν εἰς ἀνάγκης ζωον—λευκὸν
—ἀνθρωπος, τοῦ δὲ μὴ ἐνδέχεσθαι ζωον—λευκὸν
—ἰμάτιον.

20 Φανερὸν οὖν ὅτι τοῦ μὲν πρὸς τὸ μεῖζον ἀκρὸν
cαθόλου τεθέντος αἰε γίγνεται συλλογισμός, τοῦ
dὲ πρὸς τὸ ἐλαττὸν οὐδέποτε οὐδαμῶς.

XVI. Ἡταν δ' ἡ μὲν εἰς ἀνάγκης ὑπάρχειν ἡ δ'
ἐνδέχεσθαι σημαινὴ τῶν προτάσεων, ὁ μὲν συλ-
25 λογισμὸς ἐσται τῶν αὐτῶν τρόπον ἐχόντων τῶν
ὁρων, καὶ τελείος ὅταν πρὸς τῷ ἐλαττον ἀκρῳ
τεθῆ 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.4

But if the universal premiss refers to the minor (3) major 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.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 c; and it will be perfect when the apodeictic premiss is attached to the minor term. If the terms

b 33 a 34 ff.  
c In ch. xv.
μὲν ὄντων τῶν ὁρων τοῦ ἐνδέχεσθαι καὶ οὐ τοῦ ὑπάρχειν ἐστι, καὶ καθόλου καὶ μὴ καθόλου τιθεμένων, εἰς δ' ἃ τὸ μὲν καταφατικὸν τὸ δὲ στερητικὸν, ὅταν μὲν ἃ τὸ καταφατικὸν ἀναγκαῖον, τοῦ ἐνδέχεσθαι καὶ οὐ τοῦ μὴ ὑπάρχειν, ὅταν δὲ τὸ στερητικὸν, καὶ τοῦ ἐνδέχεσθαι μὴ ὑπάρχειν καὶ τοῦ μὴ ὑπάρχειν καὶ μὴ καθόλου τῶν ὁρων ὄντων. τὸ δ' ἐνδέχεσθαι ἐν τῷ συμπεράσματι τὸν αὐτὸν τρόπον ληπτέον ὑπερ ἐν τοῖς πρότερον. τοῦ δ' ἐξ ἀνάγκης μὴ ὑπάρχειν οὐκ ἐσται συλλογισμός· ἐτερον γὰρ τὸ μὴ ἐξ ἀνάγκης ὑπάρχειν καὶ τὸ ἐξ ἀνάγκης μὴ ὑπάρχειν.

"Οτι μὲν οὖν καταφατικῶν ὄντων τῶν ὁρων οὐ γίγνεται τὸ συμπέρασμα ἀναγκαῖον, χανερὸν. ὑπαρχέτω γὰρ τὸ Α παντὶ τῷ Β ἐξ ἀνάγκης, τὸ δὲ Β ἐνδεχέσθω παντὶ τῷ Γ· ἐσται δὴ συλλογισμὸς ἀτελῆς ὅτι ἐνδέχεται τὸ Α παντὶ τῷ Γ ὑπάρχειν. ὅτι δ' ἀτελῆς ἐκ τῆς ἀποδείξεως δῆλον· τὸν αὐτὸν γὰρ τρόπον δειχθήσεται ὑπερ κατί τῶν πρότερον. πάλιν τὸ μὲν Α ἐνδεχέσθω παντὶ τῷ Β, τὸ δὲ Β παντὶ τῷ Γ ὑπαρχέτω εξ ἀνάγκης· ἐσται δὴ συλλογισμὸς ὅτι τὸ Α παντὶ τῷ Γ ἐνδεχεται ὑπάρχειν, ἀλλ' οὐχ ὅτι ὑπάρχει, καὶ τέλειος ἀλλ' οὐκ ἀτελῆς· εὐθὺς γὰρ ἐπιτελεῖται διὰ τῶν ἐξ ἀρχῆς προτάσεων.

Εἰ δὲ μὴ ὀμοιοσχήμονες αἱ προτάσεις, ἐστώ πρῶτον ἡ στερητικὴ ἀναγκαῖα, καὶ τὸ μὲν Α μηδενὶ ἐνδεχέσθω τῷ Β [ἐξ ἀνάγκης], τὸ δὲ Β παντὶ τῷ Γ ἐνδεχέσθω· ἀνάγκη δὴ τὸ Α μηδενὶ τῷ Γ ὑπάρχειν. κείσθω γὰρ ὑπάρχειν ἡ παντὶ ἡ τινὶ τῷ δὲ Β ὑπέκειτο μηδενὶ ἐνδεχεσθαι. ἐπεὶ οὖν

1 ἐσται δὴ Β, Waitz: ἐσται δὲ i: ἐσται A: ὑπάρχει C.
2 εξ ἀνάγκης om. Cn, Alexander: μηδενὶ ὑπάρχει εξ ἀνάγκης d.

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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.\(^a\) 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.\(^b\) 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

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\(^a\) Cf. 33 b 30, 34 b 27.  
\(^b\) 34 a 34 ff.
The proof fails because the validating syllogism gives not an apodeictic but an assertoric conclusion (cf. 80 a 15 ff.) which does not contradict the original minor premiss. 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 284
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.

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, 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; 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.

\(^{a}\) A.T.M. p. 44) argues plausibly that the expression represents the expansion of an originally indefinite premiss 'A applies to C.'

\(^{b}\) This being the contradictory of the conclusion (A applies to no C) which it is hoped to establish.

\(^{c}\) Cf. 35 a 14, b 1, 7. The resultant syllogism will be the same as in 35 b 38 ff.
Τον αυτὸν δὲ τρόπον ἔξει κατ' τῶν ἐν μέρει συλλογισμῶν· ὅταν γὰρ ἢ τὸ στερητικὸν ἀναγκαῖον, καὶ τὸ συμπέρασμα ἔσται τοῦ μὴ ὑπάρχειν. οἷον
ei to meν A μηδενὶ τῶν B ἐνδεχεται ὑπάρχειν τὸ
dὲ B τοι τῶν Γ ἐνδεχεται ὑπάρχειν, ἀνάγκη τὸ
A τοι τῶν Γ μὴ ὑπάρχειν. εἰ γὰρ παντὶ ὑπάρχει
tὸ δὲ B μηδενὶ ἐνδεχεται, οὐδὲ τὸ B οὐδενὶ τῷ A
ἐνδεχεται ὑπάρχειν. ὡστ' εἰ τὸ A παντὶ τῷ Γ
ὑπάρχει, οὐδενὶ τῶν Γ τὸ B ἐνδεχεται. ἀλλ' ὑπ-
ἐκεῖτο τοι ἐνδεχεσθαι.

"Ωσταν δὲ τὸ ἐν μέρει καταφατικὸν ἀναγκαῖον ἢ
tὸ ἐν τῷ στερητικῷ συλλογισμῷ, οἷον τὸ ΒΓ, ἢ
tὸ καθόλου ἐν τῷ κατηγορικῷ, οἷον τὸ ΑΒ, οὐκ
ἔσται τ.tagName(282,80,312) τὸν ὑπάρχειν συλλογισμὸς· ἀπὸδεξιός δ' ἢ
αὐτὴ ἢ καὶ ἐπὶ τῶν πρώτον. εὰν δὲ τὸ μὲν
cαθόλου τεθῇ πρὸς τὸ ἐλαττὸν ᾦκρον, ἢ κατα-
φατικὸν ἢ στερητικὸν, ἐνδεχόμενον, τὸ δ' ἐν μέρει
ἀναγκαῖον [πρὸς τῷ μείζον ᾦκρῳ], οὐκ ἔσται
συλλογισμὸς. ὁροὶ δὲ τοῦ μὲν ὑπάρχειν ἐς ἀνάγκης
ζωῶν—λευκῶν—ἄνθρωπως, τοῦ δὲ μὴ ἐνδεχεσθαι
ζωῶν—λευκῶν—ἰμάτιον. ὅταν δ' ἀναγκαῖον ἢ τὸ
cαθόλου τὸ δ' ἐν μέρει ἐνδεχόμενον, στερητικοῦ
μὲν ὅντος τοῦ καθόλου τοῦ μὲν ὑπάρχειν ὅρως ζωῶν
—λευκῶν—κόραξ, τοῦ δὲ μὴ ὑπάρχειν ζωῶν—
λευκῶν—πίττα, καταφατικοῦ δὲ τοῦ μὲν ὑπάρχειν
ζωῶν—λευκῶν—κύκνος, τοῦ δὲ μὴ ἐνδεχεσθαι ζωῶν
—λευκῶν—χιὼν.

Οὐδ' ὅταν ἀδιάριστοι ληφθῶσιν αἱ προτάσεις

1 τὸ ἐλαττὸν ᾦκρον 'ex optimis libris' Waits: τῷ έλαττον ᾦκρῳ ulolgo.
2 πρὸς ... ᾦκρῳ om. Adf, secl. Waits.
The same principle will apply to particular syllogisms.\(^a\) When the negative premiss is apodeictic, the conclusion will also be of the negative assertoric type. *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.\(^b\)

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.\(^c\) 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

\(^a\) Aristotle passes over the case of particular syllogisms with both premisses affirmative.

\(^b\) The proof fails as in the corresponding syllogism at 36 a 7 ff., because the validating syllogism does not give the required contradiction.

\(^c\) Cf. 36 a 19-25.
ἡ ἀμφότεραι κατὰ μέρος, οίδ' οὕτως ἔσται συλλογισμός. ὅροι δὲ κοινοὶ τοῦ μὲν ὑπάρχειν ζῷον—
15 λευκών—ἀνθρώπως, τοῦ δὲ μὴ ὑπάρχειν ζῷον—
λευκῶν—ἀψυχον. καὶ γὰρ τὸ ζῷον τινὶ λευκῷ καὶ
tὸ λευκὸν ἀψύχῳ τινὶ καὶ ἀναγκαῖον ὑπάρχειν καὶ
οὐκ ἐνδέχεται ὑπάρχειν. κατὶ τοῦ ἐνδέχεσθαι
όμοιως, ἢ ὅτε πρὸς ἄπαντα χρήσιμοι οἱ ὅροι.

Φανερὸν οὖν ἐκ τῶν εἰρημένων ὅτι οὕτως
20 ἐχόντων τῶν ὅρων ἐν τῇ ὑπάρχειν καὶ ἐν τοῖς
ἀναγκαῖοις γίγνεται τὲ καὶ οὐ γίγνεται συλλογισμός,
πλὴν κατὰ μὲν τὸ ὑπάρχειν τιθεμένης τῆς στερη-
tικῆς προτάσεως τοῦ ἐνδέχεσθαι ἡν ὁ συλλογισμός,
κατὰ δὲ τὸ ἀναγκαῖον τῆς στερητικῆς καὶ τοῦ
ἐνδέχεσθαι καὶ τοῦ μὴ ὑπάρχειν. [δὴ] οὖν δὲ καὶ
25 ὅτι πάντες ἀτελεῖς οἱ συλλογισμοὶ καὶ ὅτι τε-
λειοῦνται διὰ τῶν προειρημένων σχημάτων.

XVII. Ἐν δὲ τῷ δευτέρῳ σχήματι ὅταν μὲν
ἐνδέχεσθαι λαμβάνωσιν ἀμφότεραι αἱ προτάσεις,
οὐδὲις ἔσται συλλογισμός, οὔτε κατηγορικῶν οὔτε
στερητικῶν τιθεμένων οὔτε καθόλου οὔτε κατὰ
μέρος: ὅταν δὲ ἡ μὲν ὑπάρχειν ἡ δ' ἐνδέχεσθαι
30 σημαίνῃ, τῆς μὲν καταβατικῆς ὑπάρχειν σημα-

ηνοφορὸς οὐδέποτ' ἔσται, τῆς δὲ στερητικῆς τῆς
καθολοῦ ἀεὶ. τοῦ αὐτοῦ δὲ τρόπου καὶ ὅταν ἡ μὲν
ἐξ ἀνάγκης ἡ δ' ἐνδέχεσθαι λαμβάνηται τῶν
προτάσεων. δεῖ δὲ καὶ ἐν τούτοις λαμβάνειν τὸ
ἐν τοῖς συμπεράσμασιν ἐνδεχόμενον ὡσπερ ἐν τοῖς
πρότερον.

1 seel. 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.

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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.
The meaning of ἀντικείμενα is very doubtful, but 'contradictories' (Jenkinson) must surely be wrong; no proposition is convertible with its contradictory. 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 impossible, 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 o A, and since these 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.

32 a 28.

Sc. as an inference from the proposition 'A may apply to no B.'
unicode non-ASCII characters have been replaced with their closest ASCII equivalents. The text is a philosophical discussion by Aristotle.
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 32 a 18.
27 a γὰρ ὦτι οὐκ ἀντιστρέφει ἡ τουαύτη πρότασις. ἀλλ’ οὐδὲ διὰ τοῦ ἀδύνατου· τεθέντος γὰρ τοῦ B παντὶ τῷ Γ ἐνδέχεσθαι ὑπάρχειν οὐδὲν συμβαίνει ἵππος· ἐνδέχεσθαι γὰρ ἄν τῷ A τῷ Γ καὶ παντὶ καὶ μηδενὶ ὑπάρχειν. ὅλως δ’ εἶ ἐστὶ συλλογισμὸς, δῆλον ὦτι τοῦ ἐνδέχεσθαι ἄν εἴη (διὰ τὸ μηδετέραν τῶν προ-
8 τάσεων εἰλιθφθαί ἐν τῷ ὑπάρχειν), καὶ οὕτως ἢ
27 b καταφατικὸς ἡ στερητικὸς· οὐδετέρως δ’ ἐγχωρεῖ. καταφατικοῦ μὲν γὰρ τεθέντος δειξθῆσαι διὰ τῶν ὁρῶν ὦτι οὐκ ἐνδέχεται ὑπάρχειν, στερητικοῦ δὲ ὦτι τὸ συμπέρασμα οὐκ ἐνδεχόμενον ἀλλ’ ἀναγκαῖον ἐστίν. ἐστώ γὰρ τὸ μὲν A λευκὸν τὸ δὲ B ἄνθρωπος ἐφ’ ὃ δὲ Γ ἴππος· τὸ δὲ A, τὸ λευκὸν, ἐνδέχεσθαι τῷ μὲν παντὶ τῷ δὲ μηδενὶ ὑπάρχειν, ἀλλὰ τὸ B τῷ Γ οὔτε ὑπάρχειν ἐνδέχεται οὔτε μὴ ὑπάρχειν. ὦτι μὲν οὖν ὑπάρχειν οὐκ ἐγχωρεῖ φανερῶν, οὕτως γὰρ ἴππος ἄνθρωπος· ἀλλ’ οὐδ’ ἐνδέχεσθαι μὴ ὑπάρχειν, ἀνάγκη γὰρ μηδενα ἴππον ἄνθρωπον εἶναι, τὸ δ’ ἀναγκαῖον οὐκ ἦν ἐνδεχό-
10 μενον. οὐκ ἄρα γίγνεται συλλογισμὸς.

Ομοίως δὲ δειξθῆσαι καὶ ἂν ἀνάπαυν τεθῇ τὸ στερητικὸν, καὶ ἀμφότεραι καταφατικαὶ ληθ-
15 θῶσι η στερητικὰ· διὰ γὰρ τῶν αὐτῶν ὁρῶν ἐστὶν ἦ ἀπόδειξις. καὶ ὅταν ἦ μὲν καθόλου η δ’ ἐν μέρει, ἡ ἀμφότεραι κατὰ μέρος ἢ ἀδιόριστοι, η ὁσακῶς ἄλλως ἐνδέχεται μεταλαβεῖν τὰς προ-
1 παντὶ μὴ παντὶ Maier.
2 ὑπάρχειν] μὴ ὑπάρχειν 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 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, 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 mss. or commentators, and is at best a clumsy and unnatural form of expression.

\[ 32 \text{a} 28. \]
37 b

tάσεις: ἀεὶ γὰρ ἐσται διὰ τῶν αὐτῶν ὅρων ἡ ἀπόδειξις. φανερὸν οὖν ὅτι ἀμφότερον τῶν προ-
tάσεων κατὰ τὸ ἐνδέχεσθαι τιθεμένων οὐδεὶς γίγνεται συλλογισμός.

XVIII. Εἶ δ' ἡ μὲν υπάρχειν ἡ δ' ἐνδέχεσθαι 30 σημαίνει, τῆς μὲν κατηγορικῆς υπάρχειν τεθείσης τῆς δὲ στερητικῆς ἐνδέχεσθαι οὐδέποτε ἐσται συλ-
lογισμός, οὔτε καθόλου τῶν ὅρων οὔτ' ἐν μέρει λαμβανομένων ἀπόδειξις δ' ἡ αὐτὴ καὶ διὰ τῶν αὐτῶν ὅρων. ὅταν δ' ἡ μὲν καταφατικὴ ἐν-
dέχεσθαι ἡ δὲ στερητικὴ υπάρχειν, ἐσται συλλο-
gισμός. εἰλήφθω γὰρ τὸ Α τῷ μὲν Β μηδεὶ ὑπάρχειν τῷ δὲ Γ παντὶ ἐνδέχεσθαι. ἀντιστρα-
φέντος οὖν τοῦ στερητικοῦ τὸ Β τῷ Α οὐδεν ὑπάρξῃ: τὸ δὲ Α παντὶ τῷ Γ ἐνδέχεστο: γίγνεται 45 δὴ συλλογισμός ὅτι ἐνδέχεσται τὸ Β μηδενί τῷ Γ διὰ τοῦ πρώτου σχήματος. ὁμοίως δὲ καὶ εἰ πρὸς τῷ Γ τεθεὶ τὸ στερητικὸν.

'Ean δ' ἀμφότερα μὲν ὡσι στερητικαὶ, σημαίην 30 δ' ἡ μὲν μὴ υπάρχειν ἡ δ' ἐνδέχεσθαι μὴ υπ-
ἀρχειν, δι' αὐτῶν μὲν τῶν εἰλημμένων οὖδεν συμ-
βαίνει ἀναγκαίον, ἀντιστραφείς δὲ τῆς κατὰ τὸ ἐνδέχεσθαι προτάσεως γίγνεται συλλογισμός ὅτι τὸ Β τῷ Γ ἐνδέχεσται μηδενί υπάρχειν, καθάπερ εἰ 45 τοῖς πρότερον: ἐσται γὰρ πάλιν τὸ πρῶτον σχήμα. ἐὰν δ' ἀμφότεραι τεθώσι κατηγορικαὶ, οὐκ ἐσται συλλογισμός. ὅροι τοῦ μὲν υπάρχειν υγίεια—ξένων —ἀνθρωπώς, τοῦ δὲ μὴ υπάρχειν υγίεια—ίππος —ἀνθρώπος.

Τον αὐτὸν δὲ τρόπον ἔζει κατί τῶν ἐν μέρει 50 συλλογισμῶν. ὅταν μὲν γὰρ ἡ τὸ καταφατικὸν

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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, to the effect that B may apply to no C. Similarly too if the negative be attached to C.

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

a 34 b 19 ff.  

b 35 a 6 ff.  

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38 ὑπάρχον, εἰτε καθόλου εἰτ᾽ ἐν μέρει ληφθέν, οὐδεὶς ἐσται συλλογισμός (τούτῳ δ' ὀμοίως καὶ διὰ τῶν αὐτῶν ὅρων δεικνυται τοῖς πρότερον), ὅταν δὲ τὸ στερητικὸν, ἐσται διὰ τῆς ἀντιστροφῆς, καθάπερ ἐν τοῖς πρότερον. πάλιν εὰν ἀμφω μὲν τὰ δια-

6 στήματα στερητικὰ ληφθῇ, καθόλου δὲ τὸ μὴ ὑπάρχειν, ἐξ αὐτῶν μὲν τῶν προτάσεων οὐκ ἐσται τὸ ἀναγκαῖον, ἀντιστραφέντος δὲ τοῦ ἐνδέχεσθαι, καθάπερ ἐν τοῖς πρότερον, ἐσται συλλογισμός.

Ἐὰν δὲ ὑπάρχον μὲν ἢ τὸ στερητικὸν ἐν μέρει δὲ ληφθῇ, οὐκ ἐσται συλλογισμός οὕτε καταφατικὴς οὕτε στερητικῆς ὄσης τῆς ἑτέρας προτάσεως· οὐδ᾽ ὅταν ἀμφότεραι ληφθῶσιν ἀδιόριστοι, ἡ κατα-

10 φατικὴ ἡ ἀποφατικὰ, ἡ κατὰ μέρος. ἀπόδειξις δ' ἡ αὐτὴ καὶ διὰ τῶν αὐτῶν ὅρων.

XIX. Ἐὰν δ' ἡ μὲν ἐξ ἀνάγκης ἡ δ' ἐνδέχεσθαι σημαίνῃ τῶν προτάσεων, τῆς μὲν στερητικῆς ἀναγκαιὰς ὄσης ἐσται συλλογισμὸς οὐ μόνον ὅτι ἐνδέχεται μὴ ὑπάρχειν ἄλλα καὶ ὅτι οὐχ ὑπάρχειν 

15 τῆς δὲ καταφατικῆς οὐκ ἐσται. κείσθω γὰρ τὸ Ἀ τῷ μὲν Β ἐξ ἀνάγκης μηδενὶ ὑπάρχειν, τῷ δὲ Γ παντὶ ἐνδέχεσθαι. ἀντιστραφέσης οὖν τῆς στερητικῆς οὐδὲ τὸ Β τῷ Ἀ οὐδενὶ ὑπάρξει. τὸ 

20 δὲ Α παντὶ τῷ Γ ἐνδέχετο· γίγνεται δὴ πάλιν διὰ τοῦ πρῶτου σχήματος ὁ συλλογισμὸς ὁτι τὸ Β τῷ Γ ἐνδέχεται μηδενὶ ὑπάρχειν. ἀμα δὲ δὴλον ὅτι οὐδ᾽ ὑπάρξει τὸ Β οὐδενὶ τῶν Γ. κείσθω γὰρ ὑπάρχειν οὐκοῦν εἰ τὸ Α τῷ Β μηδενὶ ἐνδέχεται

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 in-
definite, 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 neces-
sarily 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,

\[ a \text{ Sc. universal.} \]
\[ b \text{ Cf. 36 a 15 ff.} \]
τὸ δὲ Β ὑπάρχει τινὶ τῶν Γ, τὸ Α τῶν Γ τινὶ οὐκ ἐνδέχεται· ἀλλὰ παντὶ ὕπεκειτο ἐνδέχεσθαι.
Τὸν αὐτὸν δὲ τρόπον δεικθῆσεται καὶ εἴ πρὸς τῷ Γ τεθείῃ τὸ στερητικὸν.
Πάλιν ἑστῶ τὸ κατηγορικὸν ἀναγκαῖον θάτερον δ’ ἐνδεχόμενον, καὶ τὸ Α τῷ μὲν Β ἐνδεχέσθω μηδενὶ τῷ δὲ Γ παντὶ ὑπάρχέτω εὖ ἀνάγκης. οὕτως οὖν ἔχοντων τῶν ὅρων οὐδεὶς ἔσται συλλογισμὸς· συμβαίνει γὰρ τὸ Β τῷ Γ εὖ ἀνάγκης μὴ ὑπάρχειν. ἐστώ γὰρ τὸ μὲν Α λευκὸν ἐφ’ ϕ’ δὲ τὸ Β ἀνθρώπος ἐφ’ ω’ δὲ τὸ Γ κύκνος· τὸ δὴ λευκὸν κύκνῳ μὲν εὖ ἀνάγκης ὑπάρχει ἀνθρώπῳ δ’ ἐνδέχεται μηδενὶ, καὶ ἀνθρώπος οὐδενὶ κύκνῳ εὖ ἀνάγκης. ὅτι μὲν οὖν τοῦ ἐνδέχεσθαι οὐκ ἔστι συλλογισμὸς φανερὸν· τὸ γὰρ εὖ ἀνάγκης οὐκ ἐνδεχόμενον.
Ἀλλὰ μὴν οὐδὲ τοῦ ἀναγκαίου· τὸ γὰρ ἀναγκαῖον ἢ εὖ ἀμφοτέρων ἀναγκαίων ἢ ἐκ τῆς στερητικῆς συνέβαινεν. ἔτι δὲ καὶ ἐγχώρει τούτων κειμένων τὸ Β τῷ Γ ὑπάρχειν· οὐδὲν γὰρ κωλύει τὸ μὲν Γ υπὸ τὸ Β εἶναι τὸ δὲ Α τῷ μὲν Β παντὶ ἐνδέχεσθαι τῷ δὲ Γ εὖ ἀνάγκης ὑπάρχειν, οἷον εἰ τὸ μὲν Γ εἰς ἐγρηγοροῦσα τὸ δὲ Β ζῷον τὸ δ’ ἐφ’ Ἄ κίνησις· τῷ μὲν γὰρ ἐγρηγοροτὶ εὖ ἀνάγκης κίνησις, ζῷῳ δὲ παντὶ ἐνδέχεται, καὶ πᾶν τὸ ἐγρηγοροῦσα ζῷον. φανερὸν οὖν ὅτι οὐδὲ τοῦ μὴ ὑπάρχειν, εἰπερ οὕτως ἔχοντων 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 that the necessary is not possible.

Nor again will there be an apodeictic syllogism; for we saw 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.

* 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' οὐδέσι εἶσται συλλογισμός.  

5 Ὅμοιως δὲ δειχθῆσαι καὶ ἀνάπαυν τεθείσης τῆς καταφατικῆς.

'Εάν δ' ὁμοιοσχήμονες ὲσαί αἱ προτάσεις, στερητικῶν μὲν οὐσῶν οἷς γίγνεται συλλογισμὸς ἀντιστραφεῖσθη τῆς κατα τὸ ἐνδεχόμεθα προτάσεως, καθάπερ ἐν τοῖς πρότεροι. εἰλήφθω γὰρ τὸ Α τῷ μὲν Β ἐξ ἀνάγκης μὴ ὑπάρχειν, τῷ δὲ Γ ἐνδεχόμεθα μὴ ὑπάρχειν ἀντιστράφεσῶν οὖν τῶν προτάσεων τὸ μὲν Β τῷ Α οὐδενὶ ὑπάρχει τὸ δὲ Α παντὶ τῷ Γ ἐνδεχόμεθα γίγνεται δὴ τὸ πρῶτον σχῆμα. κἂν εἰ πρὸς τῷ Γ τεθεί τὸ στερητικὸν ἱστάτως.

'Εάν δὲ κατηγορικαὶ τεθῶσιν, οὐκ ἔσται συλλογισμός. τοῦ μὲν γὰρ μὴ ὑπάρχειν ἢ τοῦ ἐξ ἀνάγκης μὴ ὑπάρχειν φανερὸν ὅτι οὐκ ἔσται διὰ τὸ μὴ εἰλήφθαι στερητικὴν προτάσιον μὴν ἐν τῷ ὑπάρχειν μὴν ἐν τῷ ἐξ ἀνάγκης ὑπάρχειν. ἀλλὰ μὴν οὐδὲ τοῦ ἐνδεχόμεθα μὴ ὑπάρχειν ἐξ ἀνάγκης γὰρ οὕτως ἔχομεν τὸ Β τῷ Γ οὐχ ὑπάρχει, οἵν ἐι τὸ μὲν Α τεθείτε λευκον ἐφ' ὧν δὲ τὸ Β κύκνος τὸ δὲ Γ ἄνθρωπος. οὐδὲ γε τῶν ἀντικειμένων καταφάσεων, ἐπεὶ δεδεκτὰ τὸ Β τῷ Γ ἐξ ἀνάγκης οὐχ ὑπάρχον. οὐκ ἄρα γίγνεται συλλογισμὸς ὀλος.

'Ὅμοιως δ' ἐξει κατὶ τῶν ἐν μέρει συλλογισμῶν.
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.

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 (see, because an affirmative conclusion can only be drawn from two affirmative premisses).

i.e., if the minor premiss is apodeictic. The problematic premiss is originally negative, but becomes affirmative by conversion.

By the examples just cited.
οταν μὲν γὰρ ἢ τὸ στερητικὸν καθόλου τε καὶ ἀναγκαῖον, ἀεὶ συλλογισμὸς ἔσται καὶ τοῦ ἐν- δέχεσθαι καὶ τοῦ μὴ ὑπάρχειν (ἀπόδειξις δὲ διὰ τῆς ἀντιστροφῆς), ὅταν δὲ τὸ καταφατικὸν, οὐδέ- ποτε τῶν αὐτῶν γὰρ τρόπον δειχθῆσαι δυν καὶ ἐν τοῖς καθόλου, καὶ διὰ τῶν αὐτῶν ὅρων.

Οὐδὲ ὅταν ἀμφότεραι ληφθῶσι καταφατικαὶ καὶ γὰρ τούτου ἡ αὐτὴ ἀπόδειξις ἡ καὶ πρῶτον.

Οταν δὲ ἀμφότεραι μὲν στερητικαὶ καθόλου δὲ καὶ ἀναγκαία ἡ τοῦ μὴ ὑπάρχειν σημαίνουσα, δὴ αὐτῶν μὲν τῶν εὐθυμημένων οὐκ ἔσται τὸ ἀναγκαῖον, ἀντιστραφεῖσας δὲ τῆς κατὰ τὸ ἐνδέχεσθαι προ- ωτάσεως ἔσται συλλογισμὸς, καθάπερ ἐν τοῖς πρῶτοι.

'Ειν δὲ ἀμφότεραι αδιόριστοι ἡ ἐν μέρει τεθῶσι, οὐκ ἔσται συλλογισμὸς· ἀπόδειξις δ' ἡ αὐτὴ καὶ διὰ τῶν αὐτῶν ὅρων.

Φανερὸν οὖν ἐκ τῶν εἰρημένων ὅτι τῆς μὲν στερητικῆς τῆς καθόλου τιθεμένης ἀναγκαίας ἀεὶ γίγνεται συλλογισμὸς, οὐ μόνον τοῦ ἐνδέχεσθαι μὴ ὑπάρχειν ἄλλα καὶ τοῦ μὴ ὑπάρχειν, τῆς δὲ καταφατικῆς οὐδέποτε: καὶ ὅτι τῶν αὐτῶν τρόπον εὐχοντων ἐν τε τοῖς ἀναγκαίοις καὶ ἐν τοῖς ὑπάρχουσι γίγνεται τε καὶ οὐ γίγνεται συλλογισμὸς. δήλον δὲ καὶ ὅτι πάντες ἀτελεῖς οἱ συλλογισμοὶ, καὶ ὅτι τελείωνται διὰ τῶν προειρημένων σχημάτων.

* A fallacy; cf. notes on 36 a 15, 38 a 24.
  b 38 a 26-b 4.
  c 38 b 13-23.
  d Cf. 36 b 12-18.
  e Cf. 36 a 15, 38 a 24, b 26.
  f 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 \(^a\) 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.\(^b\)

Nor will there be a syllogism when both premisses are taken as affirmative. The proof of this also is the same as before.\(^c\)

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.\(^d\)

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,\(^e\) 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 \(^f\) already mentioned.
ARISTOTLE

XX. 'Εν δὲ τῶ τελευταίω σχήματι καὶ ἀμφοτέρων ἐνδεχομένων καὶ τῆς ἐτέρας ἦσται συλλογισμὸς. ὅταν μὲν οὖν ἐνδεχόσθαι σημαίνωσιν αἱ προτάσεις, καὶ τὸ συμπέρασμα ἦσται ἐνδεχόμενον· καὶ ὅταν ἦ μὲν ἐνδεχόσθαι ἡ δ' ὑπάρχειν. ὅταν δ' ἡ ἐτέρα τεθῇ ἀναγκαία, ἦν μὲν ἡ καταφατική, οὐκ ἦσται τὸ συμπέρασμα οὔτε ἀναγ-καίον οὐθ' ὑπάρχον, ἦν δ' ἡ στερητική, τοῦ μῆς ὑπάρχειν ἦσται συλλογισμός, καθάπερ καὶ ἐν τοῖς πρότερον. ληπτέον δὲ καὶ ἐν τούτοις ὁμοίως τὸ ἐν τοῖς συμπεράσμασιν ἐνδεχόμενον.

'Εστωσαν δὴ πρῶτον ἐνδεχόμεναι, καὶ τὸ Α 18 καὶ τὸ Β παντὶ τῷ Γ ἐνδεχόσθω ὑπάρχειν. ἐπεὶ οὖν ἀντιστρέφει τὸ καταφατικὸν ἐπὶ μέρους τὸ δὲ Β παντὶ τῷ Γ ἐνδεχέται, καὶ τὸ Γ τινὶ τῷ Β ἐνδεχούτ' ἀν' ὥστ' εἰ τὸ μὲν Α παντὶ τῷ Γ ἐν-δεχέται τὸ δὲ Γ τινὶ τῶν Β, καὶ τὸ Α τινὶ τῶν Β ἐν-20 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 ἐνδεχοῦσθαι μή ὑπάρχειν ἦσται γὰρ πάλιν τὸ πρῶτον σχῆμα διὰ τῆς ἀντιστροφῆς. εἰ δ' ἀμφότεραι στερητικικαὶ τεθείσαι, ἐξ αὐτῶν μὲν τῶν εἰλημμένων οὐκ 25 ἦσται τὸ ἀναγκαῖον, ἀντιστραφεῖσιν δὲ τῶν προτάσεων ἦσται συλλογισμός, καθάπερ ἐν τοῖς πρότερον. εἰ γὰρ τὸ Α καὶ τὸ Β τῷ Γ ἐνδέχεται μὴ ὑπάρχειν, ἐὰν μεταληφθῇ τὸ ἐνδεχόσθαι μὴ ὑπάρχειν, πάλιν ἦσται τὸ πρῶτον σχῆμα διὰ τῆς ἀντιστροφῆς.

Εἰ δ' ὁ μὲν ἦστι καθόλου τῶν ὄρων ὁ δ' ἐν μέρει, 30 τὸν αὐτὸν τρόπον ἐχόμενον τῶν ὄρων ὄντερ ἐπὶ

1 μη n: 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. In these syllogisms also the sense of ‘possibility’ in the conclusions must be understood in the same way as before.

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

\[ a \quad Cf. \, 36\, a\, 15, \, 38\, a\, 24, \, b\, 26, \, 40. \]
\[ b \quad 33\, b\, 30, \, 34\, b\, 27, \, 35\, b\, 32, \, 36\, b\, 33. \]
39 a
tου υπάρχειν εσται τε και ούκ εσται συλλογισμός.
ειδεχέσθω γάρ το μὲν A παντί τῷ Γ το δὲ B τινί
tῷ Γ υπάρχειν εσται δὴ πάλιν τὸ πρῶτον σχῆμα
tῆς ἐν μέρει προτάσεως ἀντιστραφεῖσθαι εἰ γὰρ
tὸ A παντὶ τῷ Γ τὸ δὲ Γ τινὶ τῶν B, τὸ A τινὶ
e τῶν B ἐνδέχεται. καὶ εἰ πρὸς τῷ! BG τεθείη τὸ
καθὸλου, ὁσαύτως. ὀμοίως δὲ καὶ εἰ τὸ μὲν ΑΓ
στερητικοῦ εἰπ τὸ δὲ BG καταφατικοῦ ἐσται γὰρ
πάλιν τὸ πρῶτον σχῆμα διὰ τῆς ἀντιστροφῆς.
Εἰ δ’ ἀμφότεραι στερητικαὶ τεθείσαι, ἡ μὲν
καθὸλου ἡ δ’ ἐν μέρει, δὲ αὐτῶν μὲν τῶν εὐλημ-
μένων οὐκ εσται συλλογισμός, ἀντιστραφεῖσων δ’
ἐσται, καθάπερ ἐν τοῖς πρότεροι.

"Οταν δὲ ἀμφότεραι ἀδιόριστοι ἡ ἐν μέρει
ληφθῶσιν οὐκ εσται συλλογισμός καὶ γὰρ παντὶ
ἀνάγκη τὸ A τῷ B καὶ μὴδενι υπάρχειν. ὀροι
τοῦ υπάρχειν ζῷον—ἀνθρώπος—λευκόν, τοῦ μὴ
υπάρχειν ἐπος—ἀνθρώπος—λευκόν, μέσον λευκόν.

XXI. 'Εαν δὲ η μὲν υπάρχειν ἡ δ’ ἐνδέχεσθαι
σημαίνῃ τῶν προτάσεων, τὸ μὲν συμπέρασμα
ἐσται ὅτι ἐνδέχεται καὶ οὐχ ὅτι υπάρχει, συλ-
λογισμός δ’ ἐσται τῶν αὐτῶν τρόπων ἐχοντων τῶν
ὁρων ὅν καὶ εἰν τοῖς πρότεροι. ἐστώσαν γὰρ
πρῶτον κατηγορικοὶ καὶ τὸ μὲν A παντὶ τῷ Γ
ὑπαρχέτω τὸ δὲ B παντὶ ἐνδεχέσθω υπάρχειν.
ἀντιστραφέντος οὖν τοῦ BG τὸ πρῶτον ἐσται
σχῆμα, καὶ τὸ συμπέρασμα ὅτι ἐνδέχεται τὸ A
τινὶ τῶν B υπάρχειν· ὅτε γὰρ ἡ ἑτέρα τῶν προ-

1 τῷ] τὸ Colmn.
the same arrangement of terms as in assertoric syllogisms.\textsuperscript{a} 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 $B$.\textsuperscript{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.\textsuperscript{c} 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\textsuperscript{d}

\textsuperscript{b} \textit{i.e.} terms can be found (as in the examples which follow) to exhibit both these relations.

\textsuperscript{c} In ch. xx.

\textsuperscript{d} 33 b 25-40.
'Οσευν ἐν τῷ πρώτῳ σχήματι σημαίνει ἐνδέχεσθαι, καὶ τὸ συμπέρασμα ἢν ἐνδεχόμενον. ὡμοίως δὲ καὶ εἰ τὸ μὲν ΒΓ ύπάρχειν τὸ δὲ ΑΓ ἐνδέχεσθαι, καὶ εἰ τὸ μὲν ΑΓ στερητικὸν τὸ δὲ ΒΓ κατηγορικὸν, ύπάρχοι δ’ ὀποτερονοῦν, ἀμφοτέρως ἐνδεχόμενον ἔσται τὸ συμπέρασμα. γίγνεται γὰρ

πάλιν τὸ πρώτον σχήμα, δεδεικταὶ δ’ ὅτι τῆς ἐτέρας προτάσεως ἐνδέχεσθαι σημαίνοντο ἐν αὐτῷ καὶ τὸ συμπέρασμα ἔσται ἐνδεχόμενον. εἰ δὲ τὸ [ἐνδεχόμενον]1 στερητικὸν τεθείη πρὸς τὸ ἐλαττὸν ἀκρὸν ἡ καὶ ἀμφώ ληφθεὶς στερητικά, δι’ αὐτῶν μὲν τῶν κειμένων οὐκ ἔσται συλλογισμός,

ἀντιστράφεντων δ’ ἔσται, καθάπερ ἐν τοῖς πρότερον.

Εἰ δ’ ἡ μὲν καθόλου τῶν προτάσεων ἡ δ’ ἐν μέρει, κατηγορικῶν μὲν οὐσῶν ἀμφοτέρων ἡ τῆς μὲν καθόλου στερητικῆς τῆς δ’ ἐν μέρει καταφατικῆς, δ’ αὐτῶς τρόπος ἔσται τῶν συλλογισμῶν.

πάντες γὰρ περαινοῦνται διὰ τοῦ πρώτου σχήματος· ὠστε φανερὸν ὅτι τοῦ ἐνδεχομένου καὶ οὐ τοῦ ύπάρχειν ἔσται δ’ συλλογισμός. εἰ δ’ ἡ μὲν καταφατικὴ καθόλου ἡ δὲ στερητικὴ ἐν μέρει, διὰ τοῦ ἀδυνάτου ἔσται ἡ ἀπόδειξις. ύπάρχετω γὰρ τὸ μὲν Β παντὶ τῷ Γ, τὸ δὲ Α ἐνδεχόσθω τινὶ τῷ Γ μὴ ύπάρχειν· ἀνάγκη δὴ τὸ Α ἐνδεχομένῳ τινὶ τῷ Β μὴ ύπάρχειν. εἰ γὰρ παντὶ τῷ Β τὸ Α ύπάρχει εὖ ἀνάγκης τὸ δὲ Β παντὶ τῷ Γ κεῖται ύπάρχειν, τὸ Α παντὶ τῷ Γ εὖ ἀνάγκης ύπάρξει (τοῦτο γὰρ δεδεικταὶ πρότερον)· ἀλλʼ ύπέκειτο τινὶ ἐνδεχομένῳ μὴ ύπάρχειν.

᾿Ὅταν δ’ ἀδιόριστοι ἥ ἐν μέρει ληφθῶσιν ἀμφότεραι, οὐκ ἔσται συλλογισμός. ἀπόδειξις δ’ ἡ

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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

\[ a \text{ 30 a 15-23.} \]
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40 άυτή ἡ καὶ ἐν τοῖς καθόλου, καὶ διὰ τῶν αὐτῶν ὄρων.

XXII. Εἰ δ' ἐστὶν ἡ μὲν ἀναγκαία τῶν προτάτων σεων ἡ δ' ἐνδεχόμενη, κατηγορικῶν μὲν ὄντων τῶν ὄρων ἀεὶ τοῦ ἐνδεχόμενου ἐσται συλλογισμός, ὅταν δ' ἢ τὸ μὲν κατηγορικὸν τὸ δὲ στερητικὸν, εὰν μὲν ἢ τὸ καταφατικὸν ἀναγκαίον, τοῦ ἐνδεχόμενου μὴ ὑπάρχειν, εἰπὲ τὸ στερητικὸν, καὶ τοῦ ἐνδεχόμενου μὴ ὑπάρχειν καὶ τοῦ μὴ ὑπάρχειν τοῦ δ' εἰς ἀνάγκης μὴ ὑπάρχειν οὐκ ἐσται συλλογισμός, ὡσπερ οὐδ' ἐν τοῖς ἑτέροις σχήμασιν.

'Εστώσαν δὴ κατηγορικοὶ πρῶτοι οἱ ὄροι, καὶ τὸ μὲν Α παρίστατο τῷ Γ ὑπάρχειν ἐξ ἀνάγκης, τὸ δὲ Β [τῷ Γ], παρίστα ἐνδεχόμενω ὑπάρχειν. ἔτει οὕν τὸ μὲν Α παρίστα τῷ Γ ἀνάγκη, τὸ δὲ Γ των τῶν Β ἐνδεχόμενον, καὶ τὸ Α των τῷ Β ἐνδεχόμενον ἐσται καὶ οὐχ ὑπάρχον οὕτω γὰρ συνεπιτειν ἐπὶ τοῦ πρῶτου σχήματος, ὥμοιοὺς δὲ δειχθήσεται καὶ εἰ τὸ μὲν ΒΓ τεθεὶ ἀναγκαίον τὸ δὲ ΑΓ ἐνδεχόμενον.

Πάλιν ἐστώ τὸ μὲν κατηγορικὸν τὸ δὲ στερητικὸν, ἀναγκαίον δὲ τὸ κατηγορικὸν, καὶ τὸ μὲν

20 Α ἐνδεχόμενον μηδενί τῶν Γ ὑπάρχειν τὸ δὲ Β παρίστα ὑπάρχειν ἐξ ἀνάγκης. ἐσται δὴ πάλιν τὸ πρῶτον σχῆμα, καὶ [γάρ] ἡ στερητικὴ πρότασις ἐνδεχόμενων σχημάτων φανερὸν οὐν ὅτι τὸ συμπέρασμα ἐσται ἐνδεχόμενον· οὔτε γὰρ οὕτως ἔχοιν αἱ προτάσεις ἐν τῷ πρῶτῳ σχήματι, καὶ τὸ συμπέρασμα

25 ἢν ἐνδεχόμενον.

Εἰ δ' ἡ στερητικὴ πρότασις ἀναγκαῖα, τὸ συμ-

1 τῷ Γ om. BCdfus habent post parti nm.
2 τῶν] τῷ Cmu.
3 γάρ seclus.
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,

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*No such proof appears in the passage indicated (39 b 6-25), but the reference there (ll. 9-10) to the terms of the preceding chapter shows that Aristotle had in mind the section 39 b 2-6.

**Cf. 40 a 30-32 infra.

35 b 38—36 a 1.

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36 a 17-25.
πέρασμα ἔσται καὶ ὅτι ἐνδέχεται τινὶ μὴ ὑπάρχειν καὶ ὅτι οὐκ ὑπάρχει. κείσθω γὰρ τὸ Α τῷ Γ μὴ ὑπάρχειν ἢς ἀνάγκης, τὸ δὲ Β παντὶ ἐνδέχεσθαι. ἀντιστραφέντος οὖν τοῦ ΒΓ καταφατικοῦ τὸ πρῶτον ἐσται σχῆμα, καὶ ἀναγκαία ἡ στερητικὴ πρὸτασις. ὅτε δὲ οὕτως εἶχον αἱ προτάσεις, συνέβαινε τὸ Α τῷ Γ καὶ ἐνδέχεσθαι τινὶ μὴ ὑπάρχειν καὶ μὴ ὑπάρχειν, ὥστε καὶ τὸ Α τῷ Β ἀνάγκη τινὶ μὴ ὑπάρχειν. ὅταν δὲ τὸ στερητικὸν τεθῇ πρὸς τὸ ἑλαττὸν ἀκρον, ἐὰν μὲν ἐνδεχόμενον, ἔσται συλλογισμὸς μεταληθείσης τῆς προτάσεως, καθάπερ ἐν τοῖς πρότεροι, ἐὰν δὲ ἀναγκαῖον, οὐκ ἔσται· καὶ γὰρ παντὶ ἀνάγκη καὶ οὐδὲν ἐνδέχεται ὑπάρχειν. ὁροὶ τοῦ παντὶ ὑπάρχειν ὑπνοι—ἀπὸσ καθεύδων—ἀνθρώπων, τοῦ μηδενὶ ὑπνοι—ἀπὸσ ἐγρηγορῶς—ἀνθρώπως.

Ὅμως δὲ ἔξει καὶ εἰ ὁ μὲν καθόλου τῶν ὅρων ὁ δὲ ἐν μέρει πρὸς τὸ μέσον. κατηγορικῶν μὲν γὰρ ὅτι τῶν ἀμφοτέρων τοῦ ἐνδέχεσθαι καὶ οὐ τοῦ ὑπάρχειν ἔσται συλλογισμός, καὶ ὅταν τὸ μὲν στερητικὸν ληφθῇ τὸ δὲ καταφατικόν, ἀναγκαῖον δὲ τὸ καταφατικὸν. ὅταν δὲ τὸ στερητικὸν ἀναγκαῖον, καὶ τὸ συμπέρασμα ἔσται τοῦ μὴ ὑπάρχειν· τὸ γὰρ αὐτὸς πρότος ἔσται τῆς δειξεως καὶ καθόλου καὶ μὴ καθόλου τῶν ὅρων οὕτως ἀνάγκη γὰρ διὰ τοῦ πρῶτου σχῆματος τελειώθαι τοὺς συλλογισμοὺς, ὥστε καθάπερ ἐν ἑκεῖνοις, καὶ ἐπὶ τούτων ἀναγκαίοις συμπάπτειν. ὅταν δὲ τὸ στερητικὸν καθόλου ληφθὲν τεθῇ πρὸς τὸ ἑλαττὸν ἀκρον, ἐὰν

* 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 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 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, 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. When, however, the negative statement, taken as universal, refers to the

\[ i.e. \text{the corresponding affirmative premiss.}\]

\[ \text{Cf.} \ 40 \ a \ 25. \]
ΑΡΙΣΤΟΤΛΗ

10 μὲν ἐνδεχόμενον, ἐσται συλλογισμὸς διὰ τῆς ἀντιστροφῆς, ἐὰν δ’ ἀναγκαῖον, οὐκ ἐσται. δειχθεῖται δὲ τὸν αὐτὸν τρόπον ὁν καὶ ἐν τοῖς καθόλου, καὶ διὰ τῶν αὐτῶν ὅρων.

Φανερῶν οὖν καὶ ἐν τούτῳ τῷ σχῆματι πότε καὶ πῶς ἐσται συλλογισμὸς, καὶ πότε τοῦ ἐνδέχεσθαι καὶ πότε τοῦ ὑπάρχειν. δὴ λοι ὑπ’ ὃ ὑπάρχει ἑκ τῶν πάντων ἀτελείς, καὶ ὅτι τελείοταν διὰ τοῦ πρώτου σχῆματος.

XXIII. Ὅτι μὲν οὖν οἱ ἐν τοῖς πάντοις σχῆμασι συλλογισμοὶ τελείοταν διὰ τῶν ἐν τῷ πρώτῳ σχῆματι καθόλου συλλογισμῶν καὶ εἰς τούτους ἀνάγονται, δὴ λοι ἐκ τῶν εἰρημένων ὅτι δ’ ἀπλῶς πᾶς συλλογισμὸς οὕτως ἔξει, νῦν ἐστὶν φανερῶν, ὅταν δεικθῇ πᾶς γιγνόμενος διὰ τούτων τῶν σχῆματων.

Ἀνάγκη δὴ πάσαν ἀπόδειξιν καὶ πάντα συλλογισμὸν ἡ ὑπάρχον τι ἡ μὴ ὑπάρχον δεικνύει, καὶ τούτῳ ἡ καθόλου ἡ κατὰ μέρος, ἐτὶ ἡ δεικτικῶς ἡ ἐξ ὑποθέσεως τοῦ δ’ ἐξ ὑποθέσεως μέρος τοῦ διὰ τοῦ ἀδυνάτου. πρώτων οὖν εἰπωμεν περὶ τῶν δεικτικῶν τούτων γὰρ δειχθέντων φανερῶν ἐσται καὶ ἐπὶ τῶν εἰς τὸ ἀδύνατον καὶ ὅλως τῶν ἐξ ὑποθέσεως.

20 Εἰ δὴ δέοι τὸ Α κατὰ τοῦ Β συλλογίσασθαι ἡ ὑπάρχον ἡ μὴ ὑπάρχον, ἀνάγκη λαβεῖν τι κατά τινος. εἰ μὲν οὖν τὸ Α κατὰ τοῦ Β ληφθείη, το ἐξ ἀρχῆς ἐσται 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, μηδὲ ἄλλο κατ' ἑκείνου, μηδὲ
κατὰ τοῦ Α ἔτερον, οὐδεὶς ἐστι συλλογισμός· τῷ
γὰρ ἐν καθ' ἐνὸς ληφθήναι οὐδὲν συμβαίνει ἐξ ἀνάγκης· ὥστε προσληπτεύον καὶ ἐτέραν πρότασιν.
'Εάν μὲν οὖν ληφθῇ τὸ Α κατ' ἄλλον ἡ ἄλλο
κατὰ τοῦ Α, ἡ κατὰ τοῦ Γ ἔτερον, εἰναι μὲν συλ-
λογισμῷ οὐδὲν κωλύει, πρὸς μὲντοι τὸ Β οὐκ
ἐσται διὰ τῶν εἰλημμένων. οὐδ' ὅταν τὸ Γ ἔτέρῳ,
κάκεινο ἄλλω, καὶ τούτο ἔτέρῳ, μὴ συνάπτῃ δὲ
πρὸς τὸ Β, οὐδ' οὕτως ἐσται πρὸς τὸ Β συλλογι-
σμός.1 ὅλως γὰρ εἰπομεν ὅτι οὐδεὶς οὐδέποτε
ἐσται συλλογισμὸς ἄλλου κατ' ἄλλου μὴ ληφθέντος
τινὸς μέσου, ὁ πρὸς ἐκάτερον έχει πως ταῖς κατ-
ηγορίαις· ὁ μὲν γὰρ συλλογισμὸς ἄπλως ἐκ προ-
τάσεων ἐστιν, ὁ δὲ πρὸς τὸδε συλλογισμὸς ἐκ τῶν
πρὸς τὸδε προτάσεων, ὁ δὲ τούδε πρὸς τὸδε διὰ τῶν
τούδε πρὸς τὸδε προτάσεων. ἀδύνατον δὲ πρὸς
tὸ Β λαβεῖν πρότασιν μηδὲν μὴτε κατηγοροῦντας
αὐτοῦ μὴτ' ἀπαρνουμένους, ἡ πάλιν τοῦ Α πρὸς τὸ
Β μηδὲν κοινὸν λαμβάνοντας ἄλλ' ἐκατέρου ὅδια
ἄττα κατηγοροῦντας ἡ ἀπαρνουμένους· ὥστε λησ-
τέον τι μέσον ἁμφοῖν, δ' συνάψει τὰς κατηγορίας,
eἰπερ ἐσται τούδε πρὸς τὸδε συλλογισμός.

1 συλλογισμός] συλλογισμός τοῦ Α Bfr.
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 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 ἄμφω κοινῶν, τούτο δὲ εὐδεχεται τριχώς (ἡ γὰρ τὸ Α τοῦ Γ καὶ τὸ Γ τοῦ Β κατηγορήσαντας, ἡ τὸ Γ κατ’ ἄμφων, ἡ ἄμφω κατὰ τοῦ Γ), ταύτα δ’ ἐστὶ τὰ εἰρημένα σχῆματα, φανερὸν ὅτι πάντα συλλογισμὸν ἀνάγκη γίγνεσθαι διὰ τοῦτων τινὸς τῶν σχημάτων. ὁ γὰρ αὐτὸς λόγος καὶ εἰ διὰ πλειόνων συνάπτοι πρὸς τὸ Β· ταύτο γὰρ ἐσται σχῆμα καὶ ἐπὶ τῶν πολλῶν.

Ὅτι μὲν οὖν οἱ δεικτικοὶ πάντες περαίνονται διὰ τῶν προειρημένων σχημάτων, φανερὸν ὅτι δὲ καὶ οἱ εἰς τὸ ἀδύνατον, δήλου ἐσται διὰ τούτων. πάντες γὰρ οἱ διὰ τοῦ ἀδύνατον περαίνοντες τὸ μὲν ψεύδος συλλογιζόνται, τὸ δ’ εὐθὺς εἰς ὑποθέσεως δεικτικόν οὖν, ὅταν ἀδύνατον τι συμβαίνῃ τῆς ἀντιφάσεως τεθείσης, οἷον ὅτι ἀσύμμετρος ἢ διάμετρος διὰ τὸ γίγνεσθαι τὰ περὶ τὰ ὁτις ἀρτίοις συμμετρον τεθείσης. τὸ μὲν οὖν ἵσα γίγνεσθαι τὰ περὶ τὰ ὁτις ἀρτίοις συλλογιζόνται, τὸ δ’ ἀσύμμετρον εἶναι τὴν διάμετρον ἐξ ὑποθέσεως δεικτικόν οὖν, ἐπεὶ ψεύδος συμβαίνει διὰ τὴν ἀντίφασιν. τούτο γὰρ ἢ τὸ διὰ τοῦ ἀδύνατον συλλογίσασθαι, τὸ δειξά τι ἀδύνατον διὰ τὴν ἕξ ἀρχῆς ὑποθέσεις, ὡστε ἐπεὶ τοῦ ψεύδους γίγνεται συλλογισμὸς δεικτικός ἐν τοῖς εἰς τὸ ἀδύνατον ἀπαγομένοις, τὸ δ’ ἕξ ἀρχῆς ἐξ ὑποθέσεως δεικτικοῦ, τοὺς δὲ δεικτικοὺς πρότερον εἴπομεν ὅτι διὰ τοῦτων περαίνονται τῶν σχημάτων, φανερὸν ὅτι καὶ οἱ διὰ τοῦ

* For the proof see Euclid, *Elements*, x. app. 27 (Heiberg and Menge).

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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

\[ \text{i.e. to show that the contradictory of the required conclusion is incompatible with one of the original premises.} \]
ARISTOTLE.

41. αὐδυνάτου συλλογισμοὶ διὰ τούτων ἔσονται τῶν σχήματων. ὑσαύτως δὲ καὶ οἱ ἄλλοι πάντες οἱ ἐξ ὑποθέσεως ἐν ἀπασι γὰρ ὁ μὲν συλλογισμὸς γίνεται πρὸς τὸ μεταλαμβανόμενον, τὸ δὲ ἀρχής περαινεῖται δι' ὀμολογίας ἢ τινος ἄλλης ὑποθέσεως. εἰ δὲ τούτ' ἄλλης, πᾶσαι ἀπόδειξιν καὶ πάντα συλλογισμὸν ἀνάγκη γίγνεσθαι διὰ τριῶν τῶν προειρημένων σχήματων. τούτου δὲ δειχθέντος δῆλον ὡς ἄπασ τε συλλογισμὸς ἐπιτελεῖται διὰ τοῦ πρώτου σχήματος καὶ ἀνάγεται εἰς τοὺς ἐν τούτῳ καθόλου συλλογισμοὺς.

XXIV. Ἐπὶ τε ἐν ἀπαντὶ δεὶ κατηγορικὸν τινὰ τῶν ὅρων εἶναι καὶ τὸ καθόλου ὑπάρχειν ἀνευ γὰρ τοῦ καθόλου ἢ οὐκ ἔσται συλλογισμὸς ἢ οὐ πρὸς τὸ κείμενον, ἢ τὸ ἀρχής αἰτήσεται. κείσθω γὰρ τὴν μουσικὴν ἡδονὴν εἶναι ὑποδαίαν. εἰ μὲν οὖν αξιώσειν ἡδονὴν εἶναι ὑποδαίαν, μὴ προσθέσῃ τὸ πάσαν, οὐκ ἔσται συλλογισμὸς. εἰ δὲ τινὰ ἡδονὴν, εἰ μὲν ἄλλην, οὐδὲν πρὸς τὸ κείμενον, εἰ δ' αὐτὴν ταύτην, τὸ ἀρχής λαμβάνει.

Μάλλον δὲ γίγνεται φανερὸν ἐν τοῖς διαγράμμασιν, οἷον ὅτι τοῦ ἰσοσκελοῦς ἢσαί αἱ πρὸς τῇ βάσει. ἔστωσαν εἰς τὸ κέντρον ἡγμέναι αἱ 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 a 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, b 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

a 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.

b 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 premises 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 $\tau\alpha\sigma$ 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.

\textit{i.e.} any other form of predication which appears in the conclusion must also appear in at least one premiss.
ἐσται συλλογισμός, καὶ πότε δυνατὸς καὶ πότε τέλειος, καὶ ὅτι συλλογισμὸν ὄντος ἀναγκαῖον ἔχειν ως τοὺς ὅρους κατὰ τινα τῶν εἰρημένων τρόπων.

XXV. Δῆλον δὲ καὶ ὅτι πᾶσα ἀπόδειξις ἔσται διὰ τριῶν ὅρων καὶ οὐ πλείονος, εὰν μὴ δι' ἄλλων καὶ ἄλλων τὸ αὐτὸ συμπέρασμα γίγνηται, ὅλον τὸ Ε διὰ τῶν ΑΒ καὶ διὰ τῶν ΓΔ, ἡ διὰ τῶν ΑΒ καὶ

40 ΑΓ', καὶ ΒΓ' (πλείω γὰρ μέσα τῶν αὐτῶν οὐδὲν εἶναι κωλύει), τούτων δ' ὄντων οὐχ εἰς ἄλλα πλείους εἰσὶν οἱ συλλογισμοὶ ἡ πάλιν ὅταν ἐκάτερον τῶν ΑΒ διὰ συλλογισμοῦ ληθή (οἷον τῷ Α διὰ τῶν ΔΕ καὶ πάλιν τῷ Β διὰ τῶν ΖΘ), ἡ τὸ μὲν ἐπαγγεῖον, τὸ δὲ συλλογισμῶ. ἄλλα καὶ οὕτως πλείοις οἱ συλλογισμοὶ πλείω γὰρ τὰ συμπεράσματα ἔστιν, οἷον τῷ Α καὶ τῷ Β καὶ τῷ Γ. εἰ δ' οὖν μὴ πλείους ἄλλ' εἰς, οὕτω μὲν εἰδέχεται γενέσθαι διὰ πλείονον τὸ αὐτὸ συμπέρασμα, ὡς δὲ τῷ Γ διὰ τῶν ΑΒ ἀδύνατον. ἔστω γὰρ τῷ Ε συμπερασμένον ἐκ τῶν ΑΒΓΔ. οὐκοῦν ἀνάγκη τι αὐτῶν ἀλλ' πρὸς ἀλλ' εἰλήθηται, τὸ μὲν ὡς ὅλον τὸ δ' ὡς μέρος: τοῦτο γὰρ δεδεικται πρὸτερον, ὅτι ὄντος συλλογισμοῦ ἀναγκαίον οὕτως τινὰς ἔχειν τῶν ὅρων. ἔχετω οὖν τῷ Α οὕτως πρὸς τῷ Β. ἔστω ἄρα τι εἵ αὐτῶν συμπεράσμα. οὐκοῦν ἦτοι τῷ Ε ἡ τῶν ΓΔ θάτερον ἡ ἀλλο τι παρὰ ταῦτα. καὶ εἰ 15 μὲν τῷ Ε, ἐκ τῶν ΑΒ μόνον ἂν εἰη ὁ συλλογισμὸς.

1 καὶ ΑΓ supra lineam add. Bu: om. Α.

* Cf. 28 a 16, note.
* i.e. as an immediate conclusion from two simple premises.
* 40 b 30.
will and when there will not be a syllogism, and when the syllogism will be valid\(^a\) 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 \(B\).\(^b\) 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 \(c\) that where there is a syllogism certain of the terms must be so related.\(^d\) 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

\(^a\) \text{Sc.} \ and \ therefore \ the \ premisses \ must \ exhibit \ a \ similar \ relation.\text{Three terms only are required for demonstration.}
tά δέ ΓΔ ει μεν ἔχει οὖτως ὅστ' εἶναι τὸ μὲν ως ὀλον τὸ δ' ως μέρος, ἐσται τι καὶ εξ ἐκείνων, καὶ ἦτοι τὸ Ε η τῶν AB θάτερον η ἄλλο τι παρὰ ταῦτα. καὶ ει μεν τὸ Ε η τῶν AB θάτερον, η πλείους ἐσονται οἱ συλλογισμοί, η ως ἐνεδέχετο ταῦτο διὰ πλείων ὅρων περαινεσθαι συμβαινει· ει δ' ἄλλο τι παρὰ ταῦτα, πλείους ἐσονται καὶ ἀσύναπτοι οἱ συλλογισμοί πρὸς ἀλλήλους. ει δε μη οὖτως ἔχοι τὸ Γ πρὸς τὸ Δ ωστε ποιειν συλλογισμον, μάτην ἐσται εἰλημμένα, ει μη ἐπαγωγης η κρύψεως η τινος ἄλλου τῶν τοιούτων χάρων.

Ει δ' εκ τῶν AB μη τὸ Ε ἄλλ' ἄλλο τι γίγνεται συμπέρασμα, εκ δε τῶν ΓΔ η τούτων θάτερον η ἄλλο παρὰ ταῦτα, πλείους τε οἱ συλλογισμοί γίγνονται καὶ οὐ τοῦ ὑποκειμένου ὑπέκειτο γαρ εἶναι τοῦ Ε τῶν συλλογισμῶν. ει δε μη γίγνεται εκ τῶν ΓΔ μηδὲν συμπέρασμα, μάτην τε εἰληφθαι αὐτά συμβαίνει καὶ μη τοῦ εξ ἀρχῆς εἶναι τὸν συλλογισμὸν· ὅστε φανερῶν οτι πάσα ἀπόδειξις καὶ πᾶς συλλογισμὸς ἐσται διὰ τριῶν ὅρων μόνω.

Τούτου δ' οὖτος φανερῶ, δήλον ως καὶ εκ δύο προτάσεων καὶ οὐ πλείων (οι γαρ τρεῖς ὅροι δύο προτάσεις), ει μη προσλαμβάνοιτο, καθάπερ ἐν τοῖς εξ ἀρχῆς εἶλεκθη, πρὸς τὴν τελείωσιν τῶν συλλογισμῶν. φανερῶν οὖν ως εν η λόγω συλλογισμον.

* 42 a 6.  
* i.e. by conversion; 24 b 23.
PRIOR ANALYTICS, I. xxv

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 a 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. b Thus it is evident that if in any syllogistic argument

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στικῷ μὴ ἄρτιαί εἰσιν αἱ προτάσεις δι’ ὅν γίγνεται τὸ συμπέρασμα τὸ κύριον (ἐνια γὰρ τῶν ἁνωθεν συμπερασμάτων ἀναγκαῖον εἰναι προτάσεις), οὔτος οὖσιν ὁ λόγος ὁ ὑπὸ συμπεράσματι ἡ πλεῖον τῶν ἀναγκαίων ἡρώτηκε πρὸς τὴν θέσιν.

Κατὰ μὲν οὖν τὰς κυρίας προτάσεις λαμβανομένων τῶν συλλογισμῶν, ἀπασ ἔσται συλλογισμὸς ἐκ προτάσεων μὲν ἄρτιων εὲ ὅρων δὲ περιττῶν ἐνια γάρ πλείους οἱ ὅροι τῶν προτάσεων. ἔσται δὲ καὶ τὰ συμπεράσματα ἡμῖσι τῶν προτάσεων. όταν δὲ διὰ προσυλλογισμὸν περιαίρεται ἡ διὰ πλείων μέσων μὴ' συνεχῶν (οἷον τὸ ΑΒ διὰ τῶν ΓΔ), τὸ μὲν πλῆθος τῶν ὅρων ὡσίμως ἐν ὑπερέξει ταῖς προτάσεις (ἡ γὰρ ἐξώθη ἡ εἰς τὸ μέσον τεθήκη οὶ παρεμπίπτων ὅρος, ἀμφότεροι δὲ συμβαίνει ἐνι ἐλάττω εἰνα τὰ διαστήματα τῶν ὅρων, αἱ δὲ προτάσεις ἑσαὺ τοῖς διαστήμασι), οὐ μέντοι δὲ αἱ μὲν ἄρτιαι ἔσονται οἱ δὲ περιττοὶ, ἀλλ’ ἐναλλάξ, όταν μὲν αἱ προτάσεις ἄρτιαι, περιττοὶ οἱ ὅροι, όταν δ’ οἱ ὅροι ἄρτιοι, περιτταί αἱ προτάσεις (ἀρὰ γὰρ τῷ ὅρῳ μία προστίθεται προτάσεις, ἀν ὁποθενοῦν προστέθη ὁ ὅρος), ὥστε ἐπεὶ αἱ μὲν ἄρτιαι οἱ δὲ περιττοὶ ἃσαν, ἀνάγκη παραλλάττειν τῆς αὐτῆς προσθέσεως γνωμομένης. τὰ δὲ συμπεράσματα οὐκέτι τὴν αὐτὴν ἐξει τάξιν οὔτε πρὸς τοὺς ὅρους οὔτε πρὸς τὰς προτάσεις. ἐνὸς γὰρ ὅρου προστιθεμένου συμπεράσματα προστεθήκη ἐνὶ ἐλάττῳ τῶν προϋπαρχόντων ὅρων πρὸς μόνον γαρ τὸν

1 μὴ om. n. secl. Waitz.

* As in sorites.
* Sc. in the simple syllogism.
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-

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Prosylogisms and sorites.
έσχατον οὐ ποιεῖ συμπέρασμα, πρὸς δὲ τοὺς ἄλλους πάντας, οἶον εἰ τῷ ΑΒΓ πρόσκειται τὸ Δ, εὐθὺς καὶ συμπεράσματα δύο πρόσκειται, τὸ τε πρὸς τὸ Α καὶ τὸ πρὸς τὸ Β. ὡμοίως δὲ καὶ τῶν ἄλλων.

καὶ εἰς τὸ μέσον δὲ παρεμπίπτη, τὸν αὐτὸν τρόπον.

23 πρὸς ἕνα γὰρ μόνον οὐ ποιήσει συλλογισμόν. ἃςτε πολὺ πλείω τὰ συμπεράσματα καὶ τῶν ὅρων ἔσται καὶ τῶν προτάσεων.

XXVI. Ἐπεὶ δ’ ἔχομεν περὶ ὧν οἱ συλλογισμοί, καὶ ποιον ἐν ἕκαστῳ σχῆματι καὶ ποσαχῶς δεικνύει, φανερὸν ἦμιν ἐστὶ καὶ ποιον πρόβλημα.

χαλεπόν καὶ ποιον ἐνεπιχείρησον τὸ μὲν γὰρ ἐν πλείοσι σχῆμασι καὶ διὰ πλείονων πτώσεων περαιώμενον ῥάνιον, τὸ δ’ ἐν ἐλάττωσι καὶ δ’ ἐλαττώνων δυσεπιχειρητότερον.

Τὸ μὲν οὖν καταφατικόν τὸ καθόλου διὰ τοῦ πρώτου σχῆματος δεικνυμαι μόνου, καὶ διὰ τοῦτοι μοναχῶς τὸ δὲ στερητικόν διὰ τοῦ πρώτου καὶ διὰ τοῦ μέσου, καὶ διὰ μὲν τοῦ πρώτου μοναχῶς, διὰ δὲ τοῦ μέσου διχῶς τὸ δ’ ἐν μέρει καταφατικόν διὰ τοῦ πρώτου καὶ διὰ τοῦ ἐσχάτου, μοναχῶς μὲν διὰ τοῦ πρώτου, τριχῶς δὲ διὰ τοῦ ἐσχάτου. τὸ δὲ στερητικόν τὸ κατὰ μέρος ἐν ἀπασί τοῖς σχῆμασι δεικνυται, πλὴν ἐν μὲν τῶν πρώτων ἀπαξ, ἐν δὲ τῶ μέσω καὶ τῷ ἐσχάτῳ ἐν τῷ μὲν διχῶς ἐν τῷ δὲ τριχῶς.

43 Φανερὸν οὖν ὦτι τὸ καθόλου κατηγορικὸν κατασκευάσαι μὲν χαλεπῶτατον, ἀνασκευάσαι δὲ ράστον. ὅλως δ’ ἐστὶν ἀναρροῦντι 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 mood only; but the nega-
tive is proved both by the first and by the middle
figure: by the first in one and by the middle in
two moods. The particular affirmative is proved
by the first and the last figures: by the first in one
and by the last in three 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 and in three 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
43 a

ἐν μέρει τάς καὶ γὰρ ἣν μηδενὶ καὶ ἣν τινι μὴ ὑπάρξῃ ἀντίρρηται τούτων δὲ τὸ μὲν τινὶ μὴ ἐν 5 ἄπασι τοῖς σχήμασι δείκνυται, τὸ δὲ μηδενὶ ἐν τοῖς δυσὶν. τὸν αὐτὸν δὲ τρόπον κατὶ τῶν στερητικῶν. καὶ γὰρ εἰ παντὶ καὶ εἰ τινι, ἀντίρρηται τὸ εξ ἀρχῆς· τούτο δ' ἦν ἐν δύο σχήμασιν. ἐπὶ δὲ τῶν ἐν μέρει μοναχῶς, ἡ παντὶ ἡ μηδενὶ δειξαντα ὑπάρχειν. 10 κατασκευάζοντι δὲ ράω τὰ ἐν μέρει καὶ γὰρ ἐν πλείσοι σχήμασι καὶ διὰ πλείόνων τρόπων.

"Ολὼς τε ὅτι λανθάνειν ὅτι ἀνασκευάζαι μὲν δὲ ἄλληλων ἔστι καὶ τὰ καθόλου διὰ τῶν ἐν μέρει καὶ ταῦτα διὰ τῶν καθόλου, κατασκευάζαι δ' οὐκ ἔστι διὰ τῶν κατὰ μέρος τὰ καθόλου, δ' ἐκείνων δὲ 15 ταῦτ' ἔστιν. ἀμα δὲ δήλον ὅτι καὶ τὸ ἀνασκευάζειν ἐστὶ τοῦ κατασκευάζειν ράων.

Πῶς μὲν οὖν γίγνεται πάς συλλογισμός καὶ διὰ πόσων ὅρων καὶ προτάσεων, καὶ πῶς ἔχουσών πρὸς ἄλληλας, ἐτι δὲ ποιὸν πρόβλημα ἐν ἐκάστῳ σχήματι καὶ ποιὸν ἐν πλείοσι καὶ ποιὸν ἐν ἐλάττωσι δεῖ- κνυται, δήλον ὅτι τῶν εἰρημένων.

20 XXVII. Πῶς δὲ εὐπορήσουμεν αὐτοὶ πρὸς τὸ τιθέμενον ἀεὶ συλλογισμῶν, καὶ διὰ ποίας ὁδοὺ ληφόμεθα τὰς περὶ ἐκαστὸν ἀρχὰς, τὸν θὰ δέ λεκτέον.

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*a 42 b 35.  b 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
ού γὰρ μόνον ἵσως δεῖ τὴν γένεσιν θεωρεῖν τῶν συλλογισμῶν, ἀλλὰ καὶ τὴν δύναμιν ἔχειν τοῦ ποιεῖν.

Απάντων δὴ τῶν ὄντων τὰ μὲν ἐστὶ τοιαῦτα ὡστε κατὰ μηδενὸς ἄλλου κατηγορεῖσθαι ἀληθῶς καθόλου (ὁδὸν Κλέων καὶ Καλλίας καὶ τὸ καθ' ἐκαστὸν καὶ αἰσθητὸν), κατὰ δὲ τούτων ἄλλα (καὶ γὰρ ἄνθρωπος καὶ ἥμον ἐκάτερος τούτων ἐστὶ) τὰ δ' αὐτὰ μὲν κατ' ἄλλων κατηγορεῖται, κατὰ δὲ τούτων ἄλλα πρότερον οὔτω κατηγορεῖται τὰ δὲ καὶ αὐτὰ ἄλλων καὶ αὐτῶν ἑτερα, οἷον ἄνθρωπος Καλλίου καὶ ἄνθρωπον ἥμον. ὁτι μὲν οὖν ἐνα τῶν ὄντων κατ' οὐδενός πέφυκε λέγεσθαι δήλου τῶν γὰρ αἰσθητῶν σχεδὸν ἐκαστὸν ἑστὶ τοιούτων ὡστε μὴ κατηγορεῖσθαι κατὰ μηδενὸς, πλὴν ὡς κατὰ συμβεβηκός. φαμέν γὰρ ποτὲ τὸ λευκὸν ἐκεῖνο Σωκράτην εἶναι καὶ τὸ προσιόν Καλλίαν. ὅτι δὲ καὶ ἐπὶ τὸ ἄνω πορευομένοις ἵσταται ποτὲ, πάλιν ἐροῦμεν· νῦν δ' ἐστώ τούτῳ κεῖμενον. κατὰ μὲν οὖν τούτων οὐκ ἐστιν ἀποδείξαι κατηγοροῦμενον ἑτερον, πλὴν εἰ μὴ κατὰ δόξαν, ἀλλὰ ταύτα κατ' ἄλλων· οὐδὲ τὰ καθ' ἐκαστὰ κατ' ἄλλων ἄλλ' ἑτερα κατ' ἐκεῖνων. τὰ δὲ μεταξὺ δήλου ὡς ἀμφοτέρως ἐν- δέχεται καὶ γὰρ αὐτὰ κατ' ἄλλων καὶ ἄλλα κατὰ τούτων λειτήσεται, 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.
ΑΡΙΣΤΟΤΕΛΗΣ

43 b Δεῖ δὴ τὰς προτάσεις περὶ ἐκαστὸν οὖτως ἐκ-

λαμβάνειν, ὑποθέμενον αὐτὸ πρῶτον καὶ τοὺς ὀρισμοὺς τε καὶ ὅσα ἰδια τοὺ πράγματός ἐστιν, εἶτα μετὰ τούτο ὅσα ἐπεται τῷ πράγματι, καὶ πάλιν οἷς τὸ πράγμα ἀκολουθεῖ, καὶ ὅσα μὴ εἰσέχεται αὐτῷ ὑπάρχειν οἷς δ' αὐτὸ μὴ εἰσέχεται οὐκ ἐκλήστεον, διὰ τὸ ἀντιστρέφειν τὸ στερητικὸν. διαιρετέον δὲ καὶ τῶν ἐπομένων ὅσα τε ἐν τῷ τί ἐστι καὶ ὅσα ὡς ἰδια καὶ ὅσα ὡς συμβεβηκότα κατηγορεῖται, καὶ τούτων ποῖα δοξαστικῶς καὶ ποῖα κατ' ἀλήθειαν.

10 ὅσω μὲν γὰρ ἀν πλειόνων τοιούτων εὐπορῆ τις, θάττον ἐπιεῖξεται συμπεράσματι, ὅσῳ δ' ἂν ἀλη-

θεστέρων, μᾶλλον ἀποδείξει.

Δεῖ δ' ἐκλέγειν μὴ τὰ ἐπομένα τινὶ, ἀλλ' ὅσα ὅλω τῷ πράγματι ἐπεται, οἰον μὴ τί τινι ἀνθρώπῳ ἀλλ' τί παντὶ ἀνθρώπῳ ἐπεται, διὰ γὰρ τῶν καθ-

όλου προτάσεων ὁ συνλογισμός. ἀδιορίστον μὲν οὖν 15 ὁιτος ἁθήλου εἰ καθόλου ἡ πρότασις, διωρισμένου δὲ φανερὸν. ὁμοίως δ' ἐκλεκτέον καὶ οἷς αὐτὸ ἐπεται ὅλος, διὰ τὴν εἰρημένην αἰτίαν. αὐτὸ δὲ τὸ ἐπομένον ὑ ληπτέον ὅλον ἐπεσθαί, λέγω δ' οἰον ἀνθρώπῳ πάν ζῷον ἡ μουσικὴ πάσαν ἐπιστήμην, ἀλλὰ μόνον ἀπλῶς ἀκολουθεῖν, καθάπερ καὶ προ-

20 πεινόμεθα· καὶ γὰρ ἄρχηστον θάτερον καὶ ἀδύνατον, οἰον πάντα ἀνθρώπον εἶναι πάν ζῷον ἡ δικαιοσύνην 338
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 ἀγαθὸν ἄλλ’ ὃ ἐπεταί, ἐπ’ ἐκεῖνον τὸ παντὶ λέγεται.

"Ωστάν δ’ ὑπὸ τινος περιέχεται τὸ ὑποκείμενον ὃ τὰ ἐπόμενα δεῖ λαβεῖν, τὰ μὲν τῷ καθόλου ἐπόμενα ἡ μὴ ἐπόμενα οὐκ ἐκλεκτέον ἐν τούτοις (εἰληπται γὰρ ἐν ἐκεῖνοις· ὅσα γὰρ ζῷω καὶ ἄνθρωπω ἐπεταί, καὶ ὅσα μὴ ὑπάρχει ὁπαντῶς), τὰ δὲ περὶ ἔκαστον ἕδια ληπτέον· ἔστι γὰρ ἀττά τῷ εἰδεί ὧδα παρὰ τὸ γένος· ἀνάγκη γὰρ τοῖς ἔτεροισ εἶδεσιν ὑδα ἄττα ὑπάρχειν.

Οὐδὲ δὴ τῷ καθόλου ἐκλεκτέον οἷς ἐπεται τὸ περιεχόμενον, οἰον ζῷου οἷς ἐπεται ἄνθρωπος· ἀνάγκη γὰρ, εἰ ἄνθρωπος ἀκολουθεῖ τὸ ζῷον, καὶ τούτοις ἀπασιν ἀκολουθεῖν. οἰκείότερα δὲ ταῦτα τῆς τοῦ ἄνθρωπον ἐκλογῆς.

Lambda de καὶ τὰ ὡς ἐπὶ τὸ πολὺ ἐπόμενα καὶ οἷς ἐπεται· τῶν γὰρ ὡς ἐπὶ τὸ πολὺ προβληματῶν καὶ οὐ συλλογισμὸς ἐκ τῶν ὡς ἐπί τὸ πολὺ προτάσεως, ἡ πασῶν ἡ τινῶν· ομοίου γὰρ ἐκάστου τὸ συμπέρασμα ταῖς ἀρχαι.

"Ετι τὰ πάσιν ἐπόμενα οὐκ ἐκλεκτέον· οὐ γὰρ ἐσται συλλογισμὸς έξ αὐτῶν· δι’ ἂν δ’ αἰτιαν ἐν τοῖς ἐπομένοις ἐσται ὁμολογεῖν.

XXVIII. Κατασκευάζειν μὲν οὐν βουλομένους

* That it is useless (for purposes of argument) is probably true; but it is recognized as possible in modern logic.
* Literally ‘starting-points.’
* i.e. of both major and minor terms. This would give a syllogism in the second figure with two affirmative premisses, from which no conclusion follows.

44 b 20.
PRIOR ANALYTICS, I. xxvii–xxviii

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
κατὰ τινος ὅλου τοῦ μὲν κατασκευαζομένου βλεπτέον εἰς τὰ ὑποκείμενα, καθ" ὁν αὐτὸ τυγχάνει λεγόμενον, οὐ δὲ δει κατηγορεῖσθαι, ὁσα τούτω ἐπεται· ἂν γὰρ τι τούτων ἁ ταύτων, ἀνάγκη θάτερον βατέρῳ ὑπάρχειν. ἧν δὲ μὴ ὅτι παντὶ ἀλλ’ ὅτι τινί, οἷς ἐπεται ἐκάτερον· εἰ γὰρ τι τούτων ταύτων, ἀνάγκη τινὶ ὑπάρχειν. ὅταν δὲ μηδενὶ δέῃ ὑπάρχειν, οὐ μὲν οὐ δεῖ ὑπάρχειν, εἰς τὰ ἐπόμενα, ὃ δὲ δὲι μὴ ὑπάρχειν, εἰς μὴ ενδέχεται αὐτῷ παρεῖναι· ἡ ἀνάπαλιν, ὃ μὲν δεῖ μὴ ὑπάρχειν, εἰς ὃ μὴ ενδέχεται αὐτῷ παρεῖναι, δὲ μὴ ὑπάρχειν, εἰς τὰ ἐπόμενα. τούτων γὰρ οὗτων τῶν αὐτῶν ὀποτερωματι υπάρχειν γίγνεται γὰρ ὅτε μὲν ὁ ἐν τῷ πρώτῳ σχηματὶ συλλογισμὸς, ὅτε δ’ ὁ ἐν τῷ μέσῳ. εάν δὲ τινὶ μὴ ὑπάρχειν, ὃ μὲν δεῖ μὴ ὑπάρχειν, οἷς ἐπεται, ὃ δὲ μὴ ὑπάρχειν, ἂ μὴ δυνατὸν αὐτῷ ὑπάρχειν εἰ γὰρ τι τούτων εἰς ταύτων, ἀνάγκη τινὶ μὴ ὑπάρχειν.

Μάλλον δ’ ἴσως ἐδ’ ἐσται τῶν λεγομένων ἐκατὸν φανερῶν. ἐστὶ γὰρ τὰ μὲν ἐπόμενα τῷ Α ἐφ’ ὅν Β, οἷς δ’ αὐτὸ ἐπεται ἐφ’ ὅν Γ, ὃ δὲ μὴ ενδέχεται αὐτῷ ὑπάρχειν ἐφ’ ὅν Δ. πάλιν δὲ τῷ Ε τὰ μὲν ὑπάρχοντα ἐφ’ οἷς Z, οἷς δ’ αὐτὸ ἐπεται ἐφ’ οἷς Η, ὃ δὲ μὴ ενδέχεται αὐτῷ ὑπάρχειν ἐφ’ οἷς Θ. εἰ μὲν οὐν ταύτῳ τι ἐσται τῶν Γ τινὶ τῶν Z, ἀνάγκη τὸ A

1 ὡ] ὃ m, Wtitz.
2 εἰς τὰ ἐπόμενα, ὃ δὲ δει μὴ ὑπάρχειν om. Wtitz, habent codd., sed ὃ δὲ pro ὃ δὲ A1.
3 εἰς om. AB1Cdu.

* Barbara.  b Darapti.  c Cesare.  d Camestres.
* By converting the major premiss in Cesare or the minor in Camestres.  e Pelapton.
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 conse-
quences 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. If we are trying to establish that it applies
not to all but to some, we must consider the ante-
cedents of both terms; for if anything is common
to both classes, then one term must apply to some
of the other. When it is required that one term
shall apply to none of the other, we must consider the conse-
quences of the subject, and the attributes
which cannot belong to the predicate, or conversely
we must consider the attributes which cannot belong
to the subject and the consequents of the predicate;
for if any term is the same in both series, the pre-
dicate term cannot apply to any of the subject; for a
syllogism results sometimes in the first and some-
times 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 attri-
butes 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.

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 ἔπαρχειν: τὸ μὲν γὰρ Ζ παντὶ τῷ Ε, τὸ δὲ Γ παντὶ τῷ Α, ὥστε παντὶ τῷ Ε τὸ Α. εἰ

20 δὲ τὸ Γ καὶ τὸ Η ταυτόν, ἀνάγκη τινὶ τῶν Ε τὸ Α ὑπάρχειν τῷ μὲν γὰρ Γ τὸ Α, τῷ δὲ Η τὸ Ε παντὶ ἀκολουθεῖ. εἰ δὲ τὸ Ζ καὶ τὸ Δ ταυτόν, οὐδεὶ τῶν Ε τὸ Α ὑπάρξει ἐκ προσυλλογισμοῦ ἐπεὶ γὰρ ἀντιστρέφει τὸ στερητικὸν καὶ τὸ Ζ τῷ Δ ταυτόν, οὐδεὶ τῶν Ζ ὑπάρξει τὸ Α, τὸ δὲ Ζ παντὶ τῷ Ε.

25 πάλιν εἰ τὸ Β καὶ τὸ Θ ταυτόν, οὐδεὶ τῶν Ε τὸ Α ὑπάρξει: τὸ γὰρ Β τῷ μὲν Α παντὶ, τῷ δ' ἐφ' ὁ τὸ Ε οὐδεὶ ὑπάρξει: ταυτὸ γὰρ ἢν τῷ Θ, τὸ δὲ Θ οὐδεὶ τῶν Ε ὑπήρχεν. εἰ δὲ τὸ Δ καὶ τὸ Η ταυτόν, τὸ Α τινὶ τῶν Ε οὐχ ὑπάρξει: τῷ γὰρ Η οὐχ ὑπάρξει, ὥστε τινὶ τῶν Ε οὐχ ὑπάρξει. εἰ δὲ τῷ Η τὸ Β ταυτόν, ἀντιστραμμένος ἐσται συλλογισμὸς: τὸ μὲν γὰρ Ε' τῷ Α ὑπάρξει παντὶ—τὸ γὰρ Β τῷ Α, τὸ δὲ Ε τῷ B (tauτό γὰρ ἢν τῷ Η). τὸ δὲ Α τῷ Ε παντὶ μὲν οὐκ ἀνάγκη ὑπάρχειν, τινὶ δ' ἀνάγκη διὰ τὸ

25 ἀντιστρέφειν ἥν καθόλου κατηγορία τὴν κατὰ μέρος.

Φανερὸν οὖν ὅτι εἰς τὰ προειρημένα βλεπτέον ἐκατέρου καθ' ἐκαστὸν πρόβλημα: διὰ τούτων γὰρ ἄπαντες οἱ συλλογισμοὶ. δεὶ δὲ καὶ τῶν ἐπομένων, καὶ οἰς ἐπεται ἐκαστὸν, εἰς τὰ πρῶτα καὶ τὰ καθό-

40 λοι μάλιστα βλέπειν, οἷον τοῦ μὲν Ε μᾶλλον εἰς τὸ ΚΖ ἢ εἰς τὸ Ζ μόνον, τοῦ δὲ Α εἰς τὸ ΚΓ ἢ εἰς τὸ Γ μόνον. εἰ μὲν γὰρ τῷ ΚΖ ὑπάρχει τὸ Α, καὶ τῷ Ζ καὶ τῷ Ε ὑπάρχει· εἰ δὲ τούτῳ μὴ ἐπεται,
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 applies 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. 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.

KF and KC are universals which include F and C respectively.
εγχωρεί τῷ Ζ ἐπεσθαί. ὁμοίως δὲ καὶ ἐφ᾽ ὦν αὐτὸ ἀκολουθεῖ σκεπτέον· εἰ μὲν γὰρ τοῖς πρῶτοις, καὶ τοῖς ὑπ᾽ ἐκείνα ἐπεται, εἰ δὲ μὴ τούτοις, ἀλλὰ τοῖς ὑπὸ ταῦτα ἐγχωρεῖ.

Δὴλον δὲ καὶ ὅτι διὰ τῶν τριῶν ὀρων καὶ τῶν δύο προτάσεων ἡ σκέψις, καὶ διὰ τῶν προειρημένων σχημάτων οἱ συλλογισμοὶ πάντες. δεικνυται γὰρ ὑπάρχειν μὲν παντὶ τῷ Ε τὸ Α, ὅταν τῶν Γ καὶ Ζ ταὐτόν τι ληφθῇ. τούτο δ᾽ ἐσται μέσον, ἀκρα δὲ τὸ Α καὶ Ε· γίγνεται οὖν τὸ πρῶτον σχῆμα. τινὶ δὲ, ὅταν τὸ Γ καὶ τὸ Η ληφθῇ ταὐτόν, τούτῳ δὲ τὸ ἔσχατον σχῆμα, μέσον γὰρ τὸ Η γίγνεται. μηδενὶ δὲ, ὅταν τὸ Δ καὶ τὸ Ζ ταὐτόν. οὕτω δὲ καὶ τὸ πρῶτον σχῆμα καὶ τὸ μέσον, τὸ μὲν πρῶτον ὁτι οὐδενὶ τῷ Ζ ὑπάρχει τὸ Α, εἰπερ ἀντιστρέφει τὸ στερητικὸν, τὸ δὲ Ζ παντὶ τῷ Ε, τὸ δὲ μέσον ὅτι τὸ Δ τῷ μὲν Α οὐδενὶ τῷ δὲ Ε παντὶ ὑπάρχει. τινὶ δὲ μὴ ὑπάρχειν, ὅταν τὸ Δ καὶ τὸ Η ταὐτὸν ἥ. τούτῳ δὲ τὸ ἔσχατον σχῆμα· τὸ μὲν γὰρ Α οὐδενὶ τῷ Η ὑπάρχει, τὸ δὲ Ε παντὶ τῷ Η.

Φαινον οὖν ὅτι διὰ τῶν προειρημένων σχημάτων οἱ συλλογισμοὶ πάντες, καὶ ὅτι οὐκ ἐκλεκτέον ὅσα πᾶσιν ἐπεται, διὰ τὸ μηδένα γίγνεσθαι συλλογισμὸν ἐξ αὐτῶν. κατασκευάζειν μὲν γὰρ ὅλως οὐκ ἢν ἐκ τῶν ἐπομένων, ἀποστειριεῖν δ᾽ οὐκ ἐνδέχεται διὰ τοῦ πᾶσιν ἐπομένου· δεῖ γὰρ τῷ μὲν ὑπάρχειν τῷ δὲ μὴ ὑπάρχειν.

* Cf. 43 b 36.  
* 27 a 18, b 23.  
* i.e. from two affirmative premisses which state the middle.
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). The method of selection proceeds by the usual rules of syllogism.

Consequent alone are useless for proving a syllogism.
Φανερὸν δὲ καὶ ὅτι αἱ άλλαι σκέψεις τῶν κατὰ τὰς ἐκλογὰς ἀχρείου πρὸς τὸ ποιεῖν συλλογισμὸν, οἷον εἶ τὰ ἐπόμενα ἐκατέρω ταύτα ἐστιν, ἡ εἰ οἷς ἐπεται τὸ Α καὶ ἂ μὴ ἐνδέχεται τῷ Ε, ἡ δὲ σα πάλιν μὴ ἐγχωρεῖ ἐκατέρω υπάρχειν 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 δὲ οἷς ἐπεται τὸ Α καὶ ἂ μὴ ἐνδέχεται τῷ Ε, οἷον τὸ Γ καὶ τὸ Θ, τὸ πρῶτον σχῆμα στερητικὴν ἔχον τὴν πρὸς τὸ ἔλαττον ἀκρον πρότασιν. εἰ δὲ σα μὴ ἐνδέχεται ἐκατέρω, οἷον τὸ Δ καὶ τὸ Θ, στερητικὴν ἀμφότεραι αἱ προτάσεις, ἡ ἐν τῷ πρῶτῳ ἡ ἐν τῷ μέσῳ σχῆματι: οὕτως δ' οὔδαμῶς ἔσται συλλογισμὸς.

Δὴλον δὲ καὶ ὅτι ὅποια ταύτα ληπτέον τὰ κατὰ τὴν ἐπίσκεψιν, καὶ οὐχ ὅποια ἔτερα ἡ ἐναντία, πρῶτον μὲν ὅτι τοῦ μέσου χάριν ἡ ἐπίβλεψις, τὸ δὲ μέσον οὐχ ἔτερον ἀλλὰ ταύτον δεῖ λαβεῖν. εἰτα ἐν ὅσοι καὶ συμβαίνει γίγνεσθαι συλλογισμὸν τῷ ληφθῆναι ἐναντία η μὴ ἐνδεχόμενα τῷ αὐτῷ υπάρχειν, εἰς τοὺς προερημένους ἀπαντα ἀναχθῆσηται τρόπους, οἷον εἰ τὸ Β καὶ τὸ Ζ ἐναντία ἡ μὴ ἐνδέχεται τῷ αὐτῷ υπάρχειν: ἐσται μὲν γὰρ τούτων ληφθέντων συλλογισμὸς ὅτι οὔδεν τῶν Ε τὸ Α υπάρχει ἀλλ' οὐκ εὖ αὐτῶν ἀλλ' ἐκ τοῦ προερημένου τρόπου: τὸ γὰρ Β τῷ μὲν Α παντὶ τῷ δὲ Ε

* 44 α 11 ff.
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
οὐδὲν ὑπάρξει, ὥστ' ἀνάγκη ταὐτὸ εἶναι τὸ Β τινὶ
tὸν Θ. πάλιν εἰ τὸ Β καὶ Η μὴ ἐγχωρεῖ τῷ αὐτῷ
παρεῖναι, ὅτι τινὶ τῶν Ε ὑπάρξει τὸ Α· καὶ γὰρ
οὕτως τὸ μέσον ἔσται σχῆμα· τὸ γὰρ Β τῷ μὲν Α
παντὶ τῷ δὲ Ε' οὐ τινὶ ὑπάρξει, ὥστ' ἀνάγκη τὸ
Β ταὐτὸν τινὶ εἶναι τῶν Θ. τὸ γὰρ μὴ ἐιδέχεσθαι
tὸ Β καὶ τὸ Η τῷ αὐτῷ ὑπάρχειν οὐδὲν διαφέρει ἦ
τὸ Β τῶν Θ τινὶ ταὐτὸν εἶναι· πάντα γὰρ εἰληφται
tὰ μὴ ἐνδεχόμενα τῷ Ε ὑπάρχειν.

Φανερὸν μὲν οὖν ὦτι εἰς αὐτῶν μὲν τούτων τῶν
ἐπιβλέψεων οὐδεὶς γίγνεται συλλογισμός, ἀνάγκη
d', εἰ τὸ Β καὶ τὸ Ζ ἐναντία, ταὐτὸν τινὶ εἶναι τὸ
Β τῶν Θ καὶ τὸν συλλογισμὸν γίγνεσθαι διὰ τούτων.

αὐτῶν. συμβαίνει δὴ τοῖς οὕτως ἐπισκοποῦσι προσεπι-

βλέψειν ἀλλ' ὁδὸν τῆς ἀναγκαίας διὰ τὸ λανθάνειν
tῆς ταὐτότητα τῶν Β καὶ τῶν Θ.

XXIX. Τὸν αὐτὸν δὲ τρόπον ἔχουσι καὶ οἱ εἰς τὸ
ἀδύνατον ἀγονίς συλλογισμὸι τοῖς δεικτικοῖς· καὶ

γὰρ οὕτω γίγνονται διὰ τῶν ἐπομένων καὶ οἷς
ἐπεται ἐκάτερον. καὶ ἡ αὐτῇ ἐπιβλέψεις ἐν ἁμφοῖς·

ὁ γὰρ δεικνυται δεικτικῶς καὶ διὰ τοῦ ἀδυνάτου
ἔστι συλλογισασθαι διὰ τῶν αὐτῶν ὅρων, καὶ διὰ
tοῦ ἀδυνάτου καὶ δεικτικῶς· οἷον ὃτι τὸ Α οὐδενὶ
tῶν Ε ὑπάρχει. κείσθω γὰρ τινὶ ὑπάρχειν οὐκοῦν

ἐπεὶ τὸ Β παντὶ τῷ Α τὸ δὲ Α τινὶ τῶν Ε, τὸ Β τινὶ
tῶν Ε ὑπάρξει· ἀλλ' οὐδενὶ ὑπήρχεν. πάλιν ὃτι
tινὶ ὑπάρχει· εἰ γὰρ μηδενὶ τῶν Ε τὸ Α τὸ δὲ Ε

1 ἘΒ'α1: Η uolgo.
2 οὐ τινὶ Waitz: οὐδενὶ codd.
3 ἀνάγκη δ', εἰ Bnu, Waitz: εἳρ ὃ 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\(^a\) 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.\(^b\) 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

\(^a\) The relations of these terms are still as assumed in ch. xxviii.
παντὶ τῷ Ἑ, οὐδενὶ τῶν Ἑ υπάρξει τὸ Ἄ. ἀλλὰ παντὶ υπήρξεν. ὁμοίως δὲ καὶ ἔπι τῶν ἀλλῶν
προβλημάτων· αἱ γὰρ ἢσταὶ καὶ ἐν ἀπασίν ἡ διὰ
tοῦ ἀδυνάτου δεῖξις ἐκ τῶν ἐπομένων καὶ οἷς
ἐπεταὶ ἐκάτερον.
Καὶ καθ’ ἐκαστὸν πρόβλημα ἡ αὐτῇ σκέψις
dεικτικῶς τε βουλομένῳ συλλογίσασθαι καὶ εἰς τὸ
ἀδυνάτον ἁγαγεῖν· ἐκ γὰρ τῶν αὐτῶν ὀρων ἀμφό-
tεραί αἱ ἀποδείξεις· οἷον εἰ δεδεικται μὴ δεῖ ὑπάρ-
χειν τῷ Ἐ τῷ Ἄ, ὅτι συμβαινεῖ καὶ τῷ Ἄ τινι τῶν
Ἑ υπάρχειν, ὅπερ ἀδυνατὸν· ἐάν ληφθῇ τῷ μὲν Ἑ
μὴ δεῖν τῷ δὲ Ἑ παντὶ υπάρχειν τῷ Ἄ, πανεὶ εἰ δεικτικῶς
συλλελόγισται τὸ Ἄ τῷ Ἑ μὴ δεῖν υπάρχειν, ὑπο-
θεμένοις υπάρχειν τινὶ διὰ τοῦ ἀδυνάτου δεικθή-
σεται οὐδενὶ υπάρχον. ὁμοίως δὲ κατὶ τῶν ἀλλων
ἐν ἀπασί γὰρ ἀνάγκη κοινὸν τινα λαβεῖν ὀρων ἀλλον
tῶν ὑποκειμένων, πρός ὅν ἢσται τὸν ψευδοὺς ὁ
συλλογισμός, ὥστ’ ἀντισταθείσης ταύτης τῆς
προτάσεως τῆς δ’ ἐτέρας ὁμοίως ἐχούσης, δεικ-
tικὸς ἢσται ὁ συλλογισμὸς διὰ τῶν αὐτῶν ὀρων.
dιαφέρει γὰρ ὁ δεικτικός τοῦ εἰς τὸ ἀδυνάτον ὅτι ἐν
10 μὲν τῷ δεικτικῷ κατ’ ἀλήθειαν ἀμφότεραι τιθεναι
αἱ προτάσεις, ἐν δὲ τῷ εἰς τὸ ἀδυνάτον ψευδῶς
ἡ μία.
Ταῦτα μὲν οἷν ἢσται μᾶλλον φανερὰ διὰ τῶν
ἐπομένων, ὅταν περὶ τοῦ ἀδυνάτου λέγωμεν νῦν δὲ
τοσοῦτον ἡμῖν ἢστω ὅρην, ὅτι εἰς ταῦτ’ ἑβλέπων
15 δεικτικῶς τε βουλομένῳ συλλογίζεσθαι καὶ εἰς τὸ

1 taúta corr. C: taúta codd.
* i.e. is replaced by its contradictory.
† II. xiv.
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 (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*. 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*. In
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άδύνατον ἀγαγεῖν. ἐν δὲ τοῖς ἄλλοις συλλογισμοῖς τοῖς ἐξ ὑποθέσεως, οἷον ὅσοι κατὰ μετάληψιν ἢ κατὰ ποιότητα, ἐν τοῖς ὑποκειμένοις οὐκ ἐν τοῖς ἐξ ἀρχῆς ἄλλ' ἐν τοῖς μεταλαμβανομένοις ἐσται ἡ σκέψις, ο ὃ τρόπος ὁ αὐτὸς τῆς ἐπιβλέψεως.

20 ἐπισκέψασθαι δὲ δεῖ καὶ διελείν ποσαχῶς οἱ ἐξ ὑποθέσεως.

Δεικνύται μὲν οὖν ἕκαστον τῶν προβλημάτων οὔτως, ἐστι δὲ καὶ ἄλλον τρόπον ἐνια συλλογισμάθασθαι τούτων, οἷον τὰ καθολὸν διὰ τῆς κατὰ μέρος ἐπιβλέψεως ἐξ ὑποθέσεως. εἰ γάρ τά Γ καὶ τά Η 25 ταῦτα εἰς, μονοὶ δὲ ληφθεῖν τοὺς Η τὸ Ε ύπάρχειν, παντὶ ἀν τῷ Ε τὸ Λ ύπάρχοι καὶ πάλιν εἰ τὰ Δ καὶ Η ταῦτα, μονοὶ δὲ τῶν Η τὸ Ε κατηγοροῖτο, οτι οὐδενὶ τῶν Ε τὸ Λ ύπάρξει. φανερὸν οὖν ὅτι καὶ οὔτως ἐπιβλέπτειν.

Τὸν αὐτὸν δὲ τρόπον καὶ ἐπὶ τῶν ἀναγκαῖων καὶ 30 τῶν ἐνδεχόμενων ἢ γάρ αὐτὴ σκέψις καὶ διὰ τῶν αὐτῶν ὀργῇ ἐσται τῇ τάξει τοῦ τ΄ ἐνδεχόσθαι καὶ τοῦ ὑπάρχειν ὁ συλλογισμός. ληπτέον δ᾽ ἐπὶ τῶν ἐνδεχόμενων καὶ τὰ μὴ ὑπάρχοντα δυνατὰ δ᾽ ὑπάρχειν δεδεικται γάρ ὅτι καὶ διὰ τούτων γίγνεται ὁ τοῦ ἐνδεχόσθαι συλλογισμός. ὁμοίως δ᾽ 35 ἐξει καὶ ἐπὶ τῶν ἀλλῶν κατηγοριῶν.

Φανερὸν οὖν ἐκ τῶν εἰρημένων οὐ μόνον ὅτι ἐγχωρεῖ διὰ ταύτης τῆς ὁδοῦ γίγνεσθαι πάντας τοὺς συλλογισμοὺς, ἀλλὰ καὶ ὅτι δι᾽ ἄλλης ἀδύνατον.

* 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 ff.
* 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
άπας μὲν γὰρ συλλογισμὸς δεδειγματίζεται διὰ τῶν τῶν
προειρήμενων σχημάτων γιγνόμενος, ταύτα δ' οὐκ
ἐγχωρεῖ δι' ἄλλων συνσταθῆναι πλὴν διὰ τῶν ἐπο-
μένων καὶ οἷς ἐπεταί ἐκαστὸν ἐκ τούτων γὰρ αἱ
προτάσεις καὶ ἡ τοῦ μέσου λήπης, ὦτ' οὕδε συλ-
λογισμὸν ἐγχωρεῖ γίγνεσθαι δι' ἄλλων.

XXX. Ἡ μὲν οὖν ὁδὸς κατὰ πάντων ἡ αὐτή καὶ
peri φιλοσοφίαν καὶ peri τέχνην ὁποιανεῦν καὶ
μάθημα: δεὶ γὰρ τὰ ὑπάρχοντα καὶ οἷς ὑπάρχει
peri ἐκατέρων ἄθρειν, καὶ τούτων ως πλείστων
εὔπορειν, καὶ ταύτα διὰ τῶν τριῶν ὅρων σκοπεῖν,
ἀνασκευάζοντα μὲν ὡδί, κατασκευάζοντα δὲ ὡδί,
κατὰ μὲν ἁλθειαν ἐκ τῶν κατ' ἁλθειαν δια-
γεγραμμένων ὑπάρχειν, εἰς δὲ τοὺς διαλεκτικοὺς
συλλογισμοὺς ἐκ τῶν κατὰ δόξαν προτάσεων.

Αἱ δ' ἄρχαι τῶν συλλογισμῶν καθόλου μὲν
εἴρηται, διὸ τρόπον τ' ἔχοντα καὶ διὸ τρόπον δεὶ
θηρεύειν αὐτὰς, ὅπως μὴ βλέπωμεν εἰς ἀπαντα τὰ
λεγόμενα, μηδ' εἰς ταυτὰ κατασκευάζοντες καὶ
ἀνασκευάζοντες, μηδὲ κατασκευάζοντες τε κατὰ
πάντως ἡ τινὸς καὶ ἀνασκευάζοντες ἀπὸ πάντων ἡ
tinōn, ἀλλ' εἰς ἐλάττω τὸ ὑρισμένα, καθ' ἐκαστὸν
dὲ ἐκλέγειν τῶν ὀντῶν, οἶον περὶ ἀγαθοῦ ἡ ἐπι-
στήμης.

"Ιδιαί' δὲ καθ' ἐκαστὴν εἰσὶν αἱ πλεῖσται. διὸ
τὰς μὲν ἄρχας τὰς περὶ ἐκαστὸν ἐμπειρίας ἐστὶ
παραδοῦναι. λέγω δ' οἶον τὴν ἀστρολογικὴν μὲν

1 ἐκαστὸν mut, Bekker.
2 Ἴδια Alexander, Waitz: Ἴδια codd.

* i.e. the premisses.
other. For it has been proved that every syllogism is
effected by means of one of the figures already de-
scribed, 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 premises 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 de-
scribed in general terms, both how they are consti-
tuted 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 con-
ected 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

The same method holds for all branches of know-
ledge.

The general rules have now been stated,

but in every science knowledge of the facts must pre-
cede demonstration.
20 ἐμπειρίαν τῆς ἀστρολογικῆς ἐπιστήμης· ληφθέντων γὰρ ἰκανῶς τῶν φαινομένων οὕτως εὐρέθησαν αἱ ἀστρολογικαὶ ἀποδείξεις. ὡμοίως δὲ καὶ περὶ ἀλλήν ὁποιανοῦ ἔχει τέχνην τε καὶ ἐπιστήμην. ὅστ' εάν ληφθῇ τὰ ύπάρχοντα περὶ ἕκαστον, ἠμέτρου ἦδη τὰς ἀποδείξεις ἑτοίμως ἐμφανίζειν.

25 εἰ γὰρ μηδὲν κατὰ τὴν ἱστορίαν παραλειφθείν τῶν ἀληθῶς ύπαρχόντων τοὺς πράγμασιν, ἐξομεν περὶ ἀπαντος οὐ μὲν ἐστιν ἀποδειξις, ταύτην εὑρεῖν καὶ ἀποδεικνύω, οὐ δὲ μὴ πέφυκεν ἀποδειξις, τοῦτο ποιεῖν φανερόν.

Καθόλου μὲν οὖν, ὃν δεῖ τρόπον τὰς προτάσεις ἐκλέγειν, εἰρηται σχεδον· δι' ἀκριβείας δὲ δι'-

30 εληλύθαμεν εν τῇ πραγματείᾳ τῇ περὶ τὴν διαλεκτικὴν.

XXXI. Ὅτι δὲ ἡ διὰ τῶν γενῶν διαίρεσις μικρῶν τι μόριων ἐστὶ τῆς εἰρημένης μεθόδου, ῥάδιον ἰδεῖν· ἐστι γὰρ ἡ διαίρεσις οἷον ἀσθενῆς συλλογισμός· οὐ μὲν γὰρ δεῖ δεῖξαι αἰτεῖται, συλλογίζεται δὲ ἁεὶ τὶ τῶν ἄνωθεν. πρῶτον δ' αὐτὸ τούτο ἑλελήθη τοὺς χρωμένους αὐτῇ πάντας, καὶ πείθειν ἐπεχείρουν ὡς οὕτως δυνατοῦ περὶ οὐσίας ἀποδειξις γίγνεσθαι καὶ τοῦ τί ἐστιν· ὡστ' οὔτε ὅ τι ἐνδέχεται συλλογίσασθαι διαπομένους ἐξιστάμενοι, οὔτε ὅτι οὕτως ἐνδέχετο ὡσπερ εἰρήκαμεν. ἐν μὲν οὖν ταῖς ἀπο-

35 δείξεσιν, ὅταν δὲν τὶ συλλογίσασθαι ύπάρχειν, δεὶ

40 τὸ μέσον, δι' οὗ γίγνεται ὁ συλλογισμός, καὶ ἕττον ἕττον

1 διαπομένους ὑμ., Alexander, Wiltz: διαπομένου.

* Topics, I. xiv.

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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

Δεί εἶναι καὶ μὴ καθόλου τοῦ πρώτου τῶν ἀκρῶν,
η δὲ διαίρεσις τούναντίον βουλεταί· τὸ γὰρ καθόλου
λαμβάνει μέσον.

'Εστώ γὰρ ζῷον μὲν ἐφ' οὗ Α, τὸ δὲ θυτῆτον ἐφ'
οὐ Β, καὶ ἀδάνατον ἐφ' οὗ Γ, ὁ δὲ ἀνθρωπὸς, οὗ τὸν
ὀρὸν δεῖ λαβεῖν, ἐφ' οὐ τὸ Δ. ἀπαν δὴ ζῷον λαμ-
βάνει ἡ θυτὴν ἡ ἀδάνατον· τούτο δ' ἐστὶν, ὃ ἂν ἂ
Α, ἀπαν εἶναι ἡ Β ἡ Γ. πάλιν τὸν ἀνθρωπὸν ἀἱ
dιαιρούμενος τίθεται ζῷον εἶναι, ὡστε κατὰ τοῦ
Δ τὸ Α λαμβάνει ὑπάρχειν. ὃ μὲν οὖν συλλογισμὸς
10 ἐστιν ὅτι τὸ Δ ἡ Β ἡ Γ ἀπαν ἐσταί, ὡστε τὸν
ἀνθρωπὸν ἡ θυτὴν μὲν ἡ ἀδάνατον ἀναγκαῖον
εἶναι, ζῷον θυτὴν δὲ οὐκ ἀναγκαῖον, ἀλλ' αἰτεῖται·
tοῦτο δ' ἢν ὃ ἐδει συλλογίσασθαι. καὶ πάλιν
θέμενος τὸ μὲν Α ζῷον θυτῆτον, ἐφ' οὐ δὲ τὸ Β
ὑπόπουν, ἐφ' οὐ δὲ τὸ Γ ἀπον, τὸν δ' ἀνθρωπὸν τὸ
15 Δ, ὡσαύτως λαμβάνει τὸ μὲν Α ἦτοι ἐν τῷ Β ἡ ἐν
tῷ Γ εἶναι (ἀπαν γὰρ ζῷον θυτῆτον ἡ ὑπόπουν ἡ
ἀπον ἐστὶ), κατὰ δὲ τοῦ Δ τὸ Α (τὸν γὰρ ἀνθρωπὸν
ζῷον θυτῆτον εἶναι ἔλαβεν). ὅστ' ὑπόπουν μὲν ἡ
ἀπον εἶναι ζῷον ἀνάγκη τὸν ἀνθρωπὸν, ὑπόπουν
δ' οὐκ ἀνάγκη ἀλλὰ λαμβάνει· τοῦτο δ' ἢν ὃ ἐδει
20 πάλιν δεῖξαι. καὶ τούτων δὴ τὸν τρόπον ἀἱ
dιαιρούμενοι τὸ μὲν καθόλου συμβαίνει αὐτοῖς μέσον
λαμβάνειν, καθ' οὐ δ' ἐδει δεῖξαι καὶ τὰς διαφοράς
ἀκρα. τέλος δὲ ὅτι τούτ' ἐστιν ἀνθρωπὸς ἡ ὁ τι
ποτ' ἢ τὸ ζητούμενον οὐδὲν λέγουσι σαφὲς, ὡστ'
ἀναγκαῖον εἶναι· καὶ γὰρ τὴν ἅλλην ὀδὸν ποιοῦνται
25 πᾶσαν, οὐδὲ τὰς εἴδεχομένας 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.
ARISTOTLE

Φανερὸν δ' ὁτι οὔτ' ἀνασκευάσαι ταύτῃ τῇ με-θόδῳ ἔστι, οὔτε περὶ συμβεβηκότος ἡ ἱδίου συλ-λογίσασθαι, οὔτε περὶ γένους, οὔτ' ἐν οἷς ἀγνοεῖται τὸ πότερον ὥδε ἡ ὥδε ἔχει, οἷον ἄρ' ἡ διάμετρος ἀσύμμετρος. ἕν γὰρ λάβῃ ὁτι ἀπαν μῆκος ἡ σύμ-μετρον ἡ ἀσύμμετρον, ἡ δὲ διάμετρος μῆκος, συλλε-λογίσται ὁτι ἀσύμμετρος ἡ σύμμετρος ἡ διάμετρος. εἰ δὲ λήμματι ἀσύμμετρον, δ' ἐδει συλλογίσασθαι λήμματι. οὐκ ἀρα ἔστι δειξαι ἡ μὲν γὰρ ὁδὸς αὐτῇ, διὰ ταύτης δ' οὐκ ἔστιν. τὸ ἀσύμμετρον ἡ σύμμετρον ἐφ' οὖν Α, μῆκος Β, διάμετρος Γ.

Φανερὸν οὖν ὁτι οὔτε πρὸς πᾶσαν σκέψιν ἀρμόζει τῆς ἡτήσεως ὁ τρόπος, οὔτ' ἐν οἷς μάλιστα δοκεῖ πρέπειν, ἐν τούτοις ἔστι χρήσιμος.
'Εκ τίνων μὲν οὖν αἰ ἀποδείξεις γίγνονται καὶ πῶς, καὶ εἰς ποια βλέπετον καθ' ἐκαστὸν πρό-βλημα, φανερὸν εκ τῶν εἰρημένων.

XXXII. Πῶς δ' ἀνάξομεν τοὺς συλλογισμοὺς εἰς τὰ προειρημένα σχῆματα, λεκτεύων ἂν εἰπ' μετὰ ταύτα· λοιπὸν γὰρ ἐτι τοῦτο τῆς σκέψεως. εἰ γὰρ τῆς τε γένεσιν τῶν συλλογισμῶν θεωροῖμεν καὶ τοῦ εὐρίσκειν ἐχομεν δύναμιν, ἐτι δὲ τοὺς γεγενημένους ἁναλύομεν εἰς τὰ προειρημένα σχῆματα, τέλος ἂν ἔχοι ἡ ἔχω ἀρχής πρόθεσις. συμβῆσται δ' ἀμα καὶ τὰ πρότερον εἰρημένα ἐπιβεβαιοῦσθαι καὶ φανερώτερα εἶναι ὅτι οὕτως ἔχει διὰ τῶν νῦν λεχ-

* Apparently the word is here used to mean inferential processes in general.

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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 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


47 θησομένων: δει γάρ πάν τὸ ἀληθὲς αὐτὸ ἐαυτῷ ὁμολογοῦμεν εἶναι πάντη.
10 Πρῶτον μὲν οὖν δεὶ πειράζθαι τὰς δύο προτάσεις ἐκλαμβάνειν τοῦ συλλογισμοῦ (ῥαὶ γάρ εἰς τὰ μεῖζον διελεῖν ἢ τὰ ἐλάττων, μεῖζον δὲ τὰ συγκεῖμενα ἢ ἐξ ὧν), εἰτα σκοπεῖν ποτέρα ἐν ὁλῷ καὶ ποτέρα ἐν μέρει, καὶ εἰ μὴ ἄμφω εἰλημμέναι εἶναι, αὐτὸν 15 τιθέντα τὴν ἐτέραν. εἰνότε γάρ τὴν καθόλου προτείναντες τὴν ἐν ταύτῃ οὐ λαμβάνουσιν, οὔτε γράφοντες οὔτ' ἐρωτῶντες· ἢ ταύτας μὲν προ- 20 τείνουσιν, δὲ ὦν δ' αὐταί περαίνονται παραλει- 25 ποσιν, ἄλλα δὲ μάτην ἐρωτώσι. σκεπτέον οὖν εἰ 30 τι περίεργον εἰληπταί καὶ τι τῶν ἀναγκαίων παρα- 35 λέειται, καὶ τὸ μὲν βετέον τὸ δ' ἀφαιρετέον ἐως ἄν ἐλθῇ τις εἰς τὰς δύο προτάσεις· ἀνευ γάρ τούτων οὐκ ἐστὶν ἀναγψειν τοὺς οὔτως ἐρωτημένους λόγους. εἰνότε μὲν οὖν Ράδιον ἵδειν τὸ ἐνδείσ, ἐναὶ δὲ λανθάνουσι καὶ δοκοῦσι συλλογίζεσθαι διὰ τὸ ἀναγκαῖον τι συμβαίνειν εἰκ τῶν κειμένων, οἷον εἰ 40 ληφθεὶν μὴ οὐσίας ἀναιρομένης μὴ ἀναιρεῖσθαι οὐσίαν, ἐς ὦν δ' ἐστὶν ἀναιρομένων καὶ τὸ ἐκ τούτων φθείρεσθαι· τούτων γὰρ τεθέντων ἀναγκαίων μὲν τὸ οὐσίας μέρος εἰναι οὐσίαν· οὐ μὴν συλλελο- 45 γισται διὰ τῶν εἰλημμένων, ἀλλ' ἐλλειποῦσι προ- τάσεις. πάλιν εἰ ἀνθρώποις ὑποσ ἀνάγκη ζῷον εἰναι

1 ἀγαγεῖν Αδνυ.

* In this case the terms.  
* Cf. Topics, VIII. i.

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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 ζῷου οὐσίαν, ἀνθρώπου ὅντος ἀνάγκη οὐσίαν εἶναι. ἀλλ’ οὕτω συλλελογίσται: οὐ γὰρ ἔχουσιν αἱ προτάσεις ὡς εἴπομεν.

Ἀπατώμεθα δ’ εἰν τοῖς τοιούτοις διὰ τὸ ἀναγκαῖον τι συμβαίνειν ἐκ τῶν κειμένων, οτι καὶ ὁ συλλογισμὸς ἀναγκαῖον ἐστίν. εἰπί πλέον δὲ τὸ ἀναγκαῖον ἢ ὁ συλλογισμὸς: ὁ μὲν γὰρ συλλογισμὸς ὑπὸ ἀναγκαίον, τὸ δ’ ἀναγκαῖον ὑπὸ πάν συλλογισμὸς. ὥστ’ οὐκ εἰ τι συμβαίνει τεθέντων τινῶν πειρατέων ἀνάγειν εὑρίσκοι, ἀλλὰ πρῶτον ληπτέον τὰς δύο προτάσεις, εἰπ’ οὕτω διαμετέον εἰς τούς ὅρους, μέσον δὲ θετέον τῶν ὅρων τὸν ἐν ἀμφότεραις ταῖς προτάσεις λεγόμενον ἀνάγκη γὰρ τὸ μέσον ἐν ἀμφότεραις ὑπάρχειν ἐν ἀπασί τοῖς σχήμασιν. ἐὰν μὲν οὖν κατηγορῇ καὶ κατηγορηταί τὸ μέσον, ἡ αὐτὸ μὲν κατηγορῇ ἄλλο δ’ ἐκεῖνον ἀπαριθμηταί, τὸ πρῶτον ἐσται σχῆμα: εἰὰν δὲ καὶ κατηγορῇ καὶ ἀπαριθμηταί ἀπὸ τίνος, τὸ μέσον τε εἰὰν δ’ ἄλλα ἐκεῖνον κατηγορηταί, ἡ τὸ μὲν ἀπαριθμηταί τὸ δ’ κατηγορηταί, τὸ ἐσχατὸν οὕτω γὰρ ἔχειν ἐν ἐκάστῳ σχῆματι τὸ μέσον. ὀμοίως δὲ καὶ εἰὰν μὴ καθόλου ὅσιν αἱ προτάσεις: ὁ γὰρ αὐτὸς διωρισμὸς τοῦ μέσου. φανερὸν οὖν ὡς ἐν ὦ λόγῳ μὴ λέγεται ταύτῳ πλεονάκησι, οτι οὐ γίγνεται συλλογισμός: οὐ 10 γὰρ εἰληπται μέσον. ἐπεὶ δ’ ἔχουμεν ποιῶν ἐν ἐκάστῳ σχήματι περαίνεται τῶν προβλημάτων, καὶ ἐν τίνι τὸ καθόλου καὶ ἐν ποῖῳ τὸ ἐν μέρει, φανερὸν

* 25 b 35, 26 b 36, 25 a 12.
PRIOR ANALYTICS, I. xxxii

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 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.
ΑΡΙΣΤΟΤΕΛΟΣ

16 ΧΧΧΓ. Πολλάκις μὲν οὖν ἀπατάσθαι συμβαίνει
περὶ τοὺς συλλογισμοὺς διὰ τὸ ἀναγκαῖον, ὡσπερ
εἰρηταὶ πρότερον, εἰνότε δὲ παρὰ τὴν ὁμοιότητα
tῆς τῶν ὅρων θέσεως· ὁπερ οὐ χρῆ λαυθάνειν ἡμᾶς.
οὖν εἰ τὸ Α κατὰ τὸν Β λέγεται καὶ τὸ Β κατὰ τὸν
Γ· δῦξει γὰρ ἀν οὕτως ἐχόντων τῶν ὅρων ἐλεῖν
20 συλλογισμός, οὐ γίγνεται δ’ οὗτ’ ἀναγκαῖον οὐδὲν
οὕτε συλλογισμός. ἐστιν γὰρ ἐφ’ ὁ Α τὸ ἂει ἐλεῖν,
ἐφ’ ὃς ὁ Β διανοητὸς Ἀριστομένης, τὸ δ’ ἐφ’ ὁ Γ
Ἀριστομένης. ἀλλὰς δὴ τὸ Α τῷ Β ὑπάρχειν· ἂει
γὰρ ἔστι διανοητὸς Ἀριστομένης. ἀλλὰ καὶ τὸ Β
25 τῷ Γ· ὁ γὰρ Ἀριστομένης ἐστὶ διανοητὸς Ἀρισ-
τομένης. τὸ δ’ Α τῷ Γ οὐχ ὑπάρχει· φθαρτὸς γὰρ
ἐστὶν ὁ Ἀριστομένης. οὐ γὰρ’ εἰγίγνετο συλλο-
γισμὸς οὕτως ἐχόντων τῶν ὅρων, ἀλλ’ ἑδει καθόλου
τὴν ΑΒ ληφθῆναι πρότασιν. τοῦτο δὲ ψεύδος, τὸ
αξιόν πάντα τὸν διανοητὸν Ἀριστομένην ἂει ἐλεῖν,
φθαρτοῦ ὄντος Ἀριστομένους.
30 Πάλιν ἐστὶ τὸ μὲν ἐφ’ ὁ Γ Μίκκαλος, τὸ δ’ ἐφ’
ὁ Β μουσικὸς Μίκκαλος, ἐφ’ ὃς τὸ Α τὸ φθείρε-
σθαι αὐριον. ἀλλὰς δὴ τὸ Β τοῦ Γ κατηγορεῖν·
ὁ γὰρ Μίκκαλος ἐστὶ μουσικὸς Μίκκαλος· ἀλλὰ καὶ
τὸ Α τοῦ Β· φθείροιτο γὰρ ἀν αὐριον μουσικὸς Μίκ-

1 οὐ γάρ] οὐκ ἄρα 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

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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.
ARISTOTLE

47 Kalos· to de ge A tou 

48 to proteron· ou gar althees katholou Mik

49 kalos mounikos oti theiretai avrion tou
tou de mu

50 theventos ouk onylollogismos.

Aupti mev ouv h apate gignetai en to par

51 mikron· wvs gar oudev diapheron eiphein tode tode

52 uparchei h tode tode panti uparchei synhroumen.

XXXIV. Pollakis de diafevdeosethai sumpesei
tai para to mu kalow ekthethai tous kata tin

53 protasian orous, olon e1 to mev A e1
gyieia, to

54 de elph B voseos, elph de G andraovos.

55 althees gar eiphein oti to A oudevi
to B endexetai uparchein

56 (oudeiag gar vosew gyieia uparchei), kal palin

57 oti to B panti to G uparchei (pas gar

58 andraovos dektikos voseo). doxeian an ouv

59 symbaivev moudei andraov i endexosei

60 gyieiai uparcheiv. touto de

61 aitioi to mu kalow ekkeisei tovs orous kata tin

62 lexei, epe1 meta

63 metafheventon toin kata tais exes ouk

64 estai sulllogismos, olon anti mev

65 tin gyieias e1
tedein to

66 vynaioun, antide

67 tin voseo to voseou.

ou gar althees eiphein ouk endexetai

68 to

69 voseiun to

70 vynaioun

71 uparchei. touto
demei

72 andraov

73 ouk adunavon

74 endexetai gar

75 oudevi andraov

76 uparchein

77 gyiein.

Pali

78 ou
ti

79 mu

80 simein

81 omoiow estai to

82 vynosei

83 vosew mev

84 andraov

dei

85 endexetai

86 uparcheiv, wos

87 oudevi

88 andraovn

* 26 a 30.
* This should strictly be a problematical premiss.
* The reading voseo implies an apodeictic conclusion:

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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 νόσος.
νόσον. ἐν δὲ τῷ τρίτῳ σχήματι κατὰ τὸ ἐνδέχεσθαι συμβαίνει τὸ ψεύδος. καὶ γὰρ υγίειαν καὶ νόσον, καὶ ἐστὶ οὕτω, καὶ ἑγούμενοι, καὶ ὅλως τὰ ἑναντία τῶν αὐτῶν ἐνδέχεται ὑπάρχειν, ἀλλήλους δ' ἀδύνατον. τούτῳ δ' ἀνομολογούμενον τοῖς προειρημένοις· ὅτε γὰρ τῷ αὐτῷ πλείω ἐνδέχετο ὑπάρχειν, ἐνδέχετο καὶ ἀλλήλοις.

Φανερών οὖν ὅτι ἐν ἀπασι τούτως ἡ ἀπάτη γίγνεται παρὰ τὴν τῶν ὅρων ἐκθέσεως· ἐνεργεῖ δ' ἐν τῷ κατά τὰς ἑξεις οὐδὲν γίγνεται ψεύδος. δῆλον οὖν ὅτι κατὰ τὰς τουαύτας προτάσεις ἀεὶ τὸ κατὰ τὴν ἑξιν αὐτή τῆς ἑξιως μεταληττέον καὶ θετέον ὅρων.

XXXV. Οὐ δεὶ δὲ τοὺς ὅρους ἀεὶ ζητεῖν ὅπως ματι ἐκτίθεσθαι· πολλάκις γὰρ ἐσονταί λόγοι οἷς οὖ ἄκαιτα ὀνόμα. διὸ χαλεποὶ ἄναγει τοὺς τοιοῦτους συλλογισμοὺς. ἐνίοτε δὲ καὶ ἀπατάσθαι συμβῆσεται διὰ τὴν τουαύτην ζήτησιν, οἷον ὅτι τῶν ἁμέσων ἐστὶ συλλογισμός. ἐστιν τῷ Α δύο ὀρθαλ, τῷ ἕφ' ὦ Β τρίγωνον, ἕφ' ὦν κ' ἐς Δ ἴσοσκελές τῷ μὲν οὖν Γ υπάρχει τῷ Α διὰ τῷ Β, τῷ δὲ Β οὐκέτι δ' ἄλλο· καθ' αὐτῷ γὰρ τὸ τρίγωνον ἔχει δύο ὀρθάς, ὅστε οὖν ἐστιν μέσου τοῦ ΑΒ ἀποδεικτοῦ ὅντος· φανερῶν γὰρ ὅτι τὸ μέσον οὐχ οὕτως ἀεὶ ληπτέον ὡς τόδε τι, ἀλλ' ἐνίοτε λόγον, ὅπερ συμβαίνει κατὶ τοῦ λεχθέντος.

XXXVI. Τὸ δὲ υπάρχειν τῷ πρῶτῳ τῷ μέσῳ

1 an ρόσος?

* Cf. 39 a 14-19.

* i.e. represent them by single words.

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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, 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, 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
καὶ τὸ τῶν ἄκρων οὐ δεῖ λαμβάνειν ὡς ἄει κατ’
ηγορθησομένων ἀλλήλων ἡ ὁμοίως τὸ τε πρῶτον
τοῦ μέσου καὶ τοῦ τοῦ ἐσχάτου (καὶ ἐπὶ τοῦ
μὴ ὑπάρχειν δ’ ὦσαύτως). ἀλλ’ ὀσακῶς τὸ εἶναι
λέγεται καὶ τὸ ἀληθὲς εἰπεῖν αὐτὸ τοῦτο, τοσαυ-
ταχῶς οἴεσθαι χρὴ σημαίνειν καὶ τὸ ὑπάρχειν. οἶον
ὅτι τῶν ἐναντίων ἔστι μία ἐπιστήμη. ἔστω γὰρ τὸ
A τὸ μίαν εἶναι ἐπιστήμην, τὰ ἐναντία ἀλλήλοις
ἐφ’ οὐ B· τὸ δὴ A τῷ B ὑπάρχει οὐχ ὡς τὰ ἐναντία
tὸ μίαν εἶναι αὐτῶν ἐπιστήμην, ἀλλ’ ὅτι ἀληθὲς
eἰπεῖν κατ’ αὐτῶν μίαν εἶναι αὐτῶν ἐπιστήμην.

Συμβαίνει δ’ ὅτε μὲν ἐπὶ τοῦ μέσου τοῦ πρῶτον
λέγεσθαι τὸ δὲ μέσον ἐπὶ τοῦ τρίτου μὴ λέγεσθαι,
οἶον εἰ ἡ σοφία ἐστὶν ἐπιστήμη, τοῦ δ’ ἀγαθοῦ ἐστὶν
ἡ σοφίᾳ [ἐπιστήμην], συμπέρασμα ὅτι τοῦ ἀγαθοῦ
ἐστὶν ἐπιστήμη. τὸ μὲν δὴ ἀγαθὸν οὐκ ἔστων ἐπι-
στήμη, ἡ δὲ σοφία ἐστὶν ἐπιστήμη. ὅτε δὲ τὸ μὲν
μέσον ἐπὶ τοῦ τρίτου λέγεται, τὸ δὲ πρῶτον ἐπὶ
tοῦ μέσου οὐ λέγεται. οἶον εἰ τοῦ ποιοῦ παντὸς
ἐστὶν ἐπιστήμη ἡ ἐναντίον, τὸ δ’ ἀγαθὸν καὶ ἐναν-
tίον καὶ ποιόν, συμπέρασμα μὲν ὅτι τοῦ ἀγαθοῦ
ἐστὶν ἐπιστήμη, οὐκ ἔστι δὲ τὸ ἀγαθὸν ἐπιστήμη
οὐδὲ τὸ ποιὸν οὐδὲ τὸ ἐναντίον, ἀλλὰ τὸ ἀγαθὸν

tauτα. ἔστι δὲ ὅτε μὴ τὸ πρῶτον κατὰ τοῦ
μέσου μὴ τοῦτο κατὰ τοῦ τρίτου, τοῦ πρῶτον
κατὰ τοῦ τρίτου ὅτε μὲν λεγομένον ὅτε δὲ μὴ
λεγομένου· οἶον εἰ οὐ ἐπιστήμη ἐστὶν, ἔστι τοῦτο

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.
γένος, τοῦ δ' ἀγαθοῦ ἐστιν ἐπιστήμη, συμπέρασμα ὅτι τοῦ ἀγαθοῦ ἐστι γένος: κατηγορεῖται δ' οὐδέν κατ' οὐδενὸς. εἰ δ' οὐ ἐστιν ἐπιστήμη, γένος ἐστι τοῦτο, τοῦ δ' ἀγαθοῦ ἐστιν ἐπιστήμη, συμπέρασμα ὅτι τάγαθον ἐστι γένος: κατὰ μὲν δὴ τοῦ ἀκρού κατηγορεῖται τὸ πρῶτον, κατ' ἀλλήλων δ' οὐ λέγεται.

Τὸν αὐτὸν δὴ τρόπον καὶ ἐπὶ τοῦ μὴ ὑπάρχειν ληπτέων. οὐ γὰρ ἄει σημαίνει τὸ μὴ ὑπάρχειν τὸ δὲ τάδε μὴ εἶναι τὸ δὲ τὸ τὸ δὲ τὰ δὲ ὅν τι οὐκ ἐστὶ κινήσεως κίνησις ἡ γενέσεως γένεσις, ἡδονῆς δ' ἐστὶν οὐκ ἡ ἡδονὴ γένεσις: ἡ πάλιν ὅτι γέλωτος μὲν ἐστὶ σημεῖον, σημεῖον δὲ οὐκ ἐστὶ σημεῖον, ὡστ' οὐ σημεῖον ὁ γέλως. ὀμοίως δὲ κἂν τοῖς ἄλλοις ἐν ὅσοις ἀναρέεται τὸ πρόβλημα τῷ λέγεσθαι πως πρὸς αὐτὸ τὸ γένος. πάλιν ὅτι ὁ καιρὸς οὐκ ἐστὶ χρόνος δέων: θεῷ γὰρ καιρὸς μὲν ἐστὶ, χρόνος δ' οὐκ ἐστὶ δέων διὰ τὸ μηδὲν εἶναι θεῷ ὡφέλιμον. ὄρους μὲν γὰρ θετεῖν καιρὸν καὶ χρόνον δέοντα καὶ θεόν, τὴν δὲ προτάσει ληπτέον κατὰ τὴν τοῦ ὁνόματος πτῶσιν. ἀπλῶς γὰρ τοῦτο λέγομεν κατὰ πάντων, ὅτι τοὺς μὲν ὄρους ἄει θετεῖν κατὰ τὰς κλῆσεις τῶν ὄνομάτων, οἶον ἀνθρώπος ἢ ἀγαθὸν ἢ ἐναντία, οὐκ ἀνθρώπῳ ἢ ἀγαθῷ ἢ ἐναντίῳ, τὰς δὲ προτάσεις ληπτέον κατὰ τὰς ἐκάστου πτῶσεις: ἡ γὰρ ὅτι τοῦτῳ, οἶον τὸ ἴσον, ἢ ὅτι τοῦτου, οἶον τὸ διπλάσιον, ἢ ὅτι τοῦτῳ, οἶον τὸ τύπτον ἢ ὄρὼν.
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
XXXVII. Τὸ δ' ὑπάρχειν τόδε τώδε καὶ τὸ ἀληθεύεσθαι τόδε κατὰ τούτῳ τοιαύτῳ ληπτέον ὁσαξῶς αἱ κατηγορίαι διήρηται, καὶ ταῦτας ἡ πη ἡ ἀπλῶς, ἐτὶ ἀπλὰς ἡ συμπεπλεγμένας ὀμοίως δὲ καὶ τὸ μὴ ὑπάρχειν, ἐπισκεπτέον δὲ ταῦτα καὶ διοριστέον βέλτιον.

XXXVIII. Τὸ δ' ἐπαναδιπλούμενον ἐν ταῖς προτάσεσι πρὸς τῷ πρῶτῳ ἀκρωθεῖον, οὐ πρὸς τῷ μέσῳ. λέγω δ' οἷον εἰ γένοιτο συλλογισμὸς ὧτι τῆς δικαιοσύνης ἐστὶν ἐπιστήμη ὧτι ἄγαθὸν, τὸ ὧτι ἄγαθον ἡ ἡ ἄγαθον πρὸς τῷ πρῶτῳ θετέον. ἐστώ γὰρ τὸ Α ἐπιστήμη ὧτι ἄγαθον, ἐφ' Ἦ δὲ Β ἄγαθον, ἐφ' Ἕ δὲ Γ δικαιοσύνη. τὸ δὴ Α ἀληθὲς τοῦ Β κατηγορήσαι, τοῦ γὰρ ἄγαθον ἐστὶν ἐπιστήμη ὧτι ἄγαθον: ἀλλὰ καὶ τὸ Β τοῦ Γ, ἡ γὰρ δικαιοσύνη ὀπερ ἄγαθον. οὕτω μὲν οὖν γίγνεται ἀνάλυσις. εἰ δὲ πρὸς τῷ Β τεθείῃ τὸ ὧτι ἄγαθον, οὐκ ἐσται· τὸ μὲν γὰρ Α κατὰ τοῦ Β ἀληθὲς ἐσται, τὸ δὲ Β κατὰ τοῦ Γ οὐκ ἀληθὲς ἐσται· τὸ γὰρ ἄγαθον ὧτι ἄγαθον κατηγορεῖν τῆς δικαιοσύνης φεῦδος καὶ οὐ συνετόν. ὀμοίως δὲ καὶ εἰ τὸ ὤγεινὸν δειχθεὶ ὧτι ἐστιν ἐπιστήμην ἡ ἄγαθον, ἡ τραγέλαφος ἡ μὴ ὡν, ἡ ἄνθρωπος φθαρτὸν ἡ αἰσθητὸν· ἐν ἀπασὶ γάρ

1 τραγέλαφος δοφαστόν Βυ.δ'.

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* 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 premises 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. ἄσφατον, 'as imaginary,' makes good sense, but it has very little authority, and I have followed Waitz and Jenkinson in rejecting it.
tois epikatakeuroymenois pros tw akrof thn epanan-
diplwson theteon.

Oux h authi de thees twv oron ouan aplwos ti
sulllogismh kai ouan tode ti h phe h pws, legei de
olon ouan tagathon epistothen deichh kai ouan
80 epistothen' sti agathon' all' ei men aplwos epiv-
sstoffon dedeiktau, meseon theteon to on, ei de sti
agathon, to ti on. estw gar to men A episthmi
stis sti on, ef' ef' de B on ti, to de' ef' ef' G agathon.
alethes de to A tou B katakorein, hen gar episthmi
tou twos ontes sti ti on all' kai to B tou G,
85 to gar ef' ef' G on ti woste kai to A tou G. estai
ara episthmi tagathou sti agathon' hen gar to ti on
tis idion stimeion ouvias. ei de to on meseon eteth
kai pros tw akro to on aplwos kai me to ti on
ellethi, ouk an hen sulllogismos sti estin episthmi
tagathou sti agathon, all' sti on, olon ef' ef' to A
89 episthmi sti on, ef' ef' B on, ef' ef' G agathon,
fanerw oon sti ev tois ev mei sulllogismos
outos lopiteon tois orous.

XXXIX. Dei de kai metaalambanein a to auth
dynatai, onomata ant' onomatom kai logos ansti

1 epistothin ti codd.: om. Boethius, Wautz.

* i.e. major.
instances of supplementary predication the reduplication must be attached to the extreme 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
ARISTOTLE

5 λόγων καὶ ὄνομα καὶ λόγου, καὶ ἀεὶ ἀντὶ τοῦ λόγου
tούνομα λαμβάνειν· ράων γὰρ ἡ τῶν ὀρῶν ἐκθεσις.
oλὸν εἰ μηδὲν διαφέρει εἰπεῖν τὸ ὑποληπτὸν τοῦ
doξαστοῦ μὴ εἶναι γένοις ἡ μὴ εἶναι ὑπερ ὑποληπτὸν
tι τὸ δοξαστὸν (ταύτον γὰρ τὸ σημαινόμενον), ἀντὶ
τοῦ λόγου τοῦ λεχθέντος τὸ ὑποληπτὸν καὶ τὸ
dοξαστὸν ὀροὺς θετέον.

10 XL. Ἐπει δ’ οὐ ταύτον ἐστι τὸ εἶναι τὴν ἡδονὴν
ἀγαθὸν καὶ τὸ εἶναι τὴν ἡδονὴν τὸ ἀγαθὸν, οὐχ
ὄμοιως δηθέον τοὺς ὀροὺς, ἀλλ’ εἰ μὲν ἐστιν ὁ
συλλογισμὸς ὅτι ἡ ἡδονὴ τάγαθον, τάγαθον, εἰ
d’ ὅτι ἀγαθὸν, ἀγαθὸν. οὕτως κατὶ τῶν ἄλλων.

XLI. Οὐκ ἐστι δὲ ταύτον οὐτ’ εἶναι οὐτ’ εἰπεῖν

15 ὅτι ὁ τὸ B ὑπάρξει, τοῦτω παντὶ τὸ A ὑπάρξει,
kai τὸ εἰπεῖν τὸ ὁ παντὶ τὸ B ὑπάρξει, καὶ τὸ
A παντὶ ὑπάρξει· οὐδὲν γὰρ κωλύει τὸ B τῷ Γ
ὑπάρχει, μὴ παντὶ δὲ. οἶον ἐστὶ τὸ B καλὸν τὸ
de Γ λευκὸν. εἰ δὴ λευκῷ τῷ ὑπάρξει καλὸν,
ἀληθὲς εἰπεῖν ὅτι τῷ λευκῷ ὑπάρξει καλὸν· ἀλλ’ οὐ

20 παντὶ ὁσιως. εἰ μέν οὖν τὸ A τῷ B ὑπάρχει, μὴ
παντὶ δὲ καθ’ οὐ τὸ B, οὐτ’ εἰ παντὶ τῷ Γ τὸ B
οὐτ’ εἰ μόνον ὑπάρξει ἀνάγκη τὸ A, οὐχ ὅτι οὐ
παντὶ, ἀλλ’ οὐδ’ ὑπάρχει. εἰ δὲ καθ’ οὐ ἀν τὸ B
λέγηται ἀληθῶς τούτω παντὶ ὑπάρξει, συμβησται

25 τὸ A, καθ’ οὐ παντὸς τὸ B λέγεται, κατὰ τούτου
παντὸς λέγεσθαι. εἰ μέντοι τὸ A λέγεται καθ’ οὐ
ἂν τὸ B λέγηται κατὰ παντὸς, οὐδὲν κωλύει τῷ Γ
ὑπάρχει τὸ B, μὴ παντὶ δὲ τὸ A ἡ ὀλος μὴ
ὑπάρχει. εἱ δὴ τοῖς τρισὶν ὀροῖς δῆλον ὅτι τὸ καθ’
οὐ τὸ B, παντὸς τὸ A λέγεσθαι τοῦτ’ ἐστι, καθ’

* Se. indefinitely.

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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
30 óswv to B légetai, kata pántwn lègesthai kal to A. kai eî mév kata pántos to B, kai to A ouîs: eî de μη kata pántos, ouk ánagyki to A kata pántos.

Oû deî d' oîesbaï para to ékthethaî ti sump-báineiv atopon: ouîên gár proschrômeva toû tôde ti elnav, all' òsoper o' geowmetris thn podialan kai evdeian tînve kai åplatî elnav lègei ouk oudas; all' oux ouîs chrîtaî ws ek touîwn sulllogiζô- mevos. Ïlhos gár d' μη èstw wôs oulôn prôs méros kai all' prôs tûtô wôs méros prôs oulôn, êx ouûësos tûn touîtûn deûkunw n deûkunw, âste ouîdë gîgnetai sulllogiζîmos. tû d' ékthethaî ouîs chrômeva òsoper kai tûn aîsthânevaî, thn manvâvnta lêgonsw: ou gár ouîs wôs âneu touîtwn oux oulôn ò' apodeixhîvaî, òsoper êx wôn o' sull- logiζîmos.

XLII. Mî lantbavêtow d' ÷mâs òti en tûw oûtw sulllogiζîmos oûx âpanta ta sumpserâmata dé' enôs schîmatos èsivn, allâ to mêv diâ tûtou to dé di' allou. dhîlon ouv òti kai tâs anâlûseis ouûw poihteôv. êpêi d' ouv pân prôblhma en âpantî schîmati all' en ekâstw tetâgmêna, fanevôn êk tûs sumpserâmatoî en ô schîmati òîttêteîv.

XLIII. Toûs te prôs òrîsmôn tûn lógwn, òsorî prôs en tî tûgyânousi dieilegmenoi tûn en tûw òrhî, prôs ð dieîlektai thetêov òrôn, kai ou tôtûn âpanta lógovn: ëttovn gár sumpbîhsetai tarâttôsbaî diâ to

1 ouðar B'dfc.

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 ἐστιν ἐκ τῶν κειμένων ἀνάγειν. οὐ γὰρ διὰ συλλογισμοῦ δεδειγμένοι εἰσίν, ἀλλὰ διὰ συνθήκης ὡμολογήμενοι πάντες. 20 οἶον εἶ ὑποθέμενος, ἂν δύναμις τις μία μὴ ἢ τῶν ἐναντίων, μηδ' ἐπιστήμην μίαν εἶναι, εἰτα διαλεχθεῖ ὅτι οὐκ ἐστί πᾶσα δύναμις τῶν ἐναντίων, οἶον τοῦ ὑγειονοῦ καὶ τοῦ νοσώδους· ἀμα γὰρ ἐσται τὸ αὐτὸ ὑγειονὸ καὶ νοσώδες. ὅτι μὲν οὖν οὐκ ἐστὶ μία πάντων τῶν ἐναντίων δύναμις ἐπιδε- δεικτὰ, ὅτι δ' ἐπιστήμην οὐκ ἐστιν οὐ δεδεικτα.

καίτοι ὡμολογεῖν ἀναγκαῖον· ἀλλ' οὐκ ἐκ συλ- λογισμοῦ, ἀλλ' ἐξ ὑποθέσεως. τοῦτον μὲν οὖν οὐκ ἐστιν ἀναγαγεῖν, ὅτι δ' οὐ μία δύναμις ἐστιν· οὖτος γὰρ ἴσως καὶ ἢν συλλογισμός, ἐκείνο δ' ὑπόθεσις. Ὁμοίως δὲ καὶ ἐπὶ τῶν διὰ τοῦ ἀδύνατον πε- σο ραίνομένων· οὐδὲ γὰρ τούτους οὐκ ἐστιν ἀναλύειν, ἀλλὰ τὴν μὲν εἰς τὸ ἀδύνατον ἀπαγωγὴν ἔστι (συλλογισμῷ γὰρ δείκνυται), θάτερον δ' οὖκ ἐστιν· ἐξ ὑποθέσεως γὰρ περαιώτερα. διαφέρουσι δὲ τῶν προειρημένων ὅτι ἐν ἐκεῖνοις μὲν δεῖ προδιομο- λογῆσασθαι εἰ μέλλει συμφῆσαι, οἶον ἄν δειχθῇ 25 μία δύναμις τῶν ἐναντίων, καὶ ἐπιστήμην εἶναι τὴν

1 πάσα B¹C¹ : πάντων A¹ : μία A¹B¹C².
2 ἐπιδεικταί A¹Bc¹ : ἀποδεικταί A¹c²dsm.
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
αὐτὴν ἑνταῦθα δὲ καὶ μὴ προδιωμολογησάμενοι συγχωροῦσι διὰ τὸ φανερὸν εἶναι τὸ ψεύδος, οἷον τεθείσης τῆς διαμέτρου συμμέτρου τὸ τὰ περὶττὰ ἂν εἶναι τοῖς ἀρτίοις.

Πολλοὶ δὲ καὶ ἑτέροι περαινοῦνται ἐξ ὑποθέσεως, οὐς ἐπισκέψασθαι δεὶ καὶ διασημῆναι καθαρῶς.

τίνες μὲν οὖν αἱ διαφοράς τούτων καὶ ποσαχῶς γίγνεται τὸ ἐξ ὑποθέσεως ὑστερον ἐρούμεν· νῦν δὲ τοσοῦτον ἡμῖν ἐστῶ φανερὸν, ὅτι οὐκ ἐστὶν ἀναλύειν εἰς τὰ σχῆματα τοὺς τοιούτους συλλογισμοὺς· καὶ δὲ ἦν αἰτίαν, εἰρήκαμεν.

Χ. ι. Χ. ι. Β. ὁσα δ’ ἐν πλείοις σχῆμα διείκνυται τῶν προβλημάτων, ἦν ἐν θατέρῳ συλλογισθῇ, ἐστιν ἀναγαγεὶν τὸν συλλογισμὸν εἰς θάτερον, οἷον τὸν ἐν τῷ πρῶτῳ στερητικῷ εἰς τὸ δεύτερον καὶ τὸν ἐν τῷ μέσῳ εἰς τὸ πρῶτον, οὐχ ἀπαντας δὲ ἀλλ’ εὖνας. ἐσται δὲ φανερὸν ἐν τοῖς ἐπομένοις. εἰ γὰρ τὸ Α μηδενι τῷ Β τὸ δὲ Β παντὶ τῷ Γ, τὸ Α οὐδενι τῷ Γ. οὕτω μὲν οὐν τὸ πρῶτον σχῆμα, εἰν δ’ ἀντιστραφῇ τὸ στερητικὸν, τὸ μέσον ἐσται· τὸ γὰρ Β τῷ μὲν Α οὐδενι τῷ δὲ Γ παντὶ υπάρχει, ομοίως δ’ ἐκ μῆ καθόλου ἀλλ’ ἐν μέρει ὁ συλλογισμός, οἷον εἰ τὸ μὲν Α μηδενι τῷ Β τὸ δὲ Β τινὶ τῷ Γ’ ἀντιστραφέοις γὰρ τοῦ στερητικοῦ τὸ μέσον ἐσται σχῆμα.

Τῶν δ’ ἐν τῷ δεύτερῳ συλλογισμῶν οἱ μὲν καθόλου ἀναχώρησαντι εἰς τὸ πρῶτον, τῶν δ’ ἐν μέρει ἀτερος μόνον. ἐστὶ γὰρ τὸ Α τῷ μὲν Β μηδενι τῷ δὲ Γ παντὶ υπάρχον. ἀντιστραφέοντος

* Cf. 41 a 26.
* There is no such description to which we can refer.
* Celarent.
* 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.\(^a\)

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.\(^b\) 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\(^c\) can be reduced to the second,\(^d\) and in the middle figure—not all, however, but only some of them\(^e\)—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.

\(^a\) See next paragraph.
οὖν τοῦ στερητικοῦ τὸ πρῶτον ἐσται σχῆμα· τὸ μὲν γὰρ Β οὐδενὶ τῷ Α, τὸ δὲ Α παντὶ τῷ Γ ὑπάρξει. εάν δὲ τὸ κατηγορικὸν ή̣̣̣ πρὸς τῷ Β τὸ δὲ στερητικὸν πρὸς τῷ Γ, πρῶτον ὅρων θετέων τὸ Γ· τούτῳ γὰρ οὐδενὶ τῷ Α, τὸ δὲ Α παντὶ τῷ Β· ὥστε οὐδενὶ τῷ Β τῷ Γ· οὐδ' ἀρα τὸ Β τῷ Γ οὐδενὶ· ἀντιστρέφει γὰρ τὸ στερητικόν. εάν δ' ἐν μέρει ή̣̣̣ εἶναι συλλογισμός, ὅταν μὲν ή̣̣̣ τὸ στερητικὸν πρὸς τῷ μείζον ἄκρω, ἀναχθήσεται εἰς τὸ πρῶτον, οἷον εἰ τὸ A μηδενὶ τῷ Β τῷ Γ τινῷ· ἀντιστραφέντος γὰρ τοῦ στερητικοῦ τὸ πρῶτον ἐσται σχῆμα· τὸ μὲν γὰρ Β οὐδενὶ 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· οὕτε γὰρ δέχεται ἀντιστροφὴν τὸ AB, οὕτε γενομένης ἐσται συλλογισμός.

Πάλιν οἱ μὲν ἐν τῷ τρίτῳ σχῆματι οὐκ ἀναλυθήσονται πάντες εἰς τὸ πρῶτον, οἱ δ' ἐν τῷ πρῶτῳ πάντες εἰς τὸ τρίτον· ὑπάρχοντα γὰρ τὸ Α παντὶ τῷ Β, τὸ δὲ Β τινὶ τῷ Γ. οὐκοῦν ἐπεὶ δὴ ἀντιστρέφει τὸ εἰς μέρει κατηγορικόν, ὑπάρξει τὸ Γ τινὶ τῷ Β· τὸ δὲ Α παντὶ ὑπῆρξεν, ὡστε γίγνεται τὸ τρίτον σχῆμα. καὶ εἰ στερητικὸς ὁ συλλογισμὸς ὄσον ἄντιστρέφει γὰρ τὸ εἰς μέρει κατηγορικόν, ὥστε τὸ μὲν Α οὐδενὶ τῷ Β, τὸ δὲ Γ τινὶ ὑπάρξει.

Τῶν δ' ἐν τῷ τελευταίῳ σχῆματι συλλογισμῶν εἰς μόνον οὐκ ἀναλύεται εἰς τὸ πρῶτον, ὅταν μὴ καθολοῦ τεθῇ τὸ στερητικόν, οἱ δ' ἄλλοι πάντες ἀναλύονται. κατηγορεῖσθω γὰρ παντὸς τοῦ Γ τὸ Α καὶ τὸ Β· οὐκοῦν ἀντιστρέφει τὸ Γ πρὸς ἐκάτερον
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· ύπάρχει ἄρα τῷ Ἐ. ὅστ' ἐσται 
τὸ πρῶτον σχῆμα, εἰ τὸ μὲν Ἀ παντὶ τῷ Γ τὸ 
δὲ Γ τινὶ τῶν Ἐ. καὶ εἰ τὸ μὲν Ἀ παντὶ τῷ Γ 
τὸ δὲ Ἐ. τινὶ, ὁ αὐτὸς λόγος· ἀντιστρέφει γὰρ 
πρὸς τὸ Γ τὸ Ἐ. ἕαν δὲ τὸ μὲν Ἐ. παντὶ τῷ Γ τὸ 
δὲ Ἐ. τινὶ τῷ Γ, πρῶτος ὁρὸς θετεός τὸ Ἐ. τὸ γὰρ 
Ἑ. παντὶ τῷ Γ τὸ δὲ Γ τινὶ τῷ Ἀ, ὡστε τὸ Ἐ. τινὶ 
τῷ Ἀ. επεὶ δ' ἀντιστρέφει τὸ ἐν μέρει, καὶ τὸ 
鄣 τινὶ τῷ Ἐ. ύπάρξει.

Καὶ εἰ στερητικὸς ὁ συλλογισμὸς, καθόλου τῶν 
ὁρῶν ὅντων, ὅμοιως ληπτέον. ύπαρχέτω γὰρ τὸ Ἐ. 
παντὶ τῷ Γ, τὸ δὲ Ἐ. μηδενί· οὐκοιν τινὶ τῷ Ἐ. 
ὑπάρξει τὸ Γ, τὸ δὲ Ἐ. οὐδενὶ τῷ Γ, ὅστ' ἐσται 
μέσον τῷ Γ. ὅμοιως δὲ καὶ εἰ τὸ μὲν στερητικὸν 
καθόλου τὸ δὲ κατηγορικὸν ἐν μέρει· τὸ μὲν γὰρ Ἀ 
οὐδενὶ τῷ Γ, τὸ δὲ Γ τινὶ τῶν Ἐ. ύπάρξει. ἕαν δ' 
ἐν μέρει ληθῇ τὸ στερητικὸν, οὐκ ἐσται ἀνάλυσις, 
οἷον εἰ τὸ μὲν Ἐ. παντὶ τῷ Γ τὸ δὲ Ἐ. τινὶ μὴ 
ὑπάρξει· ἀντιστραφέντος γὰρ τοῦ Ἐ.Γ ἀμφότεραι 
ἂν προτάσεις ἐσοῦται κατὰ μέρος.

Φανερὸν δὲ καὶ ὅτι πρὸς τὸ ἀναλυεῖν εἰς ἄλληλα 
τὰ σχῆματα ἡ πρὸς τῷ ἐλάττον ἀκρῷ πρώτῳς 
ἀντιστρεπτέα ἐν ἀμφότερος τοῖς σχήμασι· ταύτης 
ὃ γὰρ μεταπεδεμένης ἡ μετάβασις ἐγένετο.

Τῶν δ' ἐν τῷ μέσῳ σχῆματι ἄτερος μὲν ἀνα- 
λυεῖται ἄτερος δ' οὐκ ἀναλυεῖται εἰς τὸ τρίτον. ὅταν 
μὲν γὰρ ἢ τὸ καθόλου στερητικὸν, ἀναλυεῖται· εἰ 
γὰρ τὸ Ἐ. μηδενὶ τῷ Ἐ. τῷ δὲ Γ τινὶ, ἀμφότερα 
ὁμοίως ἀντιστρέφει πρὸς τὸ Ἐ., ὡστε τὸ μὲν Ἐ. 
οὐδενὶ τῷ Ἐ., τὸ δὲ Γ τινὶ· μέσον ἄρα τὸ Ἐ. ὅταν

* Sc. first and third.
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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

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ARISTOTLE

51 a
de τὸ A παντὶ τῷ B τῷ δὲ Γ τινὶ μὴ ὑπάρχῃ, οὐκ ἐσται ἀναλυσις: οὐδὲτέρα γὰρ τῶν προτάσεων ἐκ τῆς ἀντιστροφῆς καθόλου.
Καὶ οἱ ἑκ τοῦ τρίτου δὲ σχήματος ἀναλυθήσονται
eis τὸ μέσον όταν ἦ καθόλου τὸ στερητικὸν, οἶον εἰ τὸ A μηδενι τῷ Γ, τὸ δὲ B τινὶ ἦ παντὶ καὶ γὰρ τὸ Γ τῷ μὲν A οὐδενὶ τῷ δὲ B τινὶ ὑπάρξει. εὰν δὲ ἐπὶ μέρους ἦ τὸ στερητικὸν οὐκ ἀναλυθήσεται οὐ γὰρ δέχεται ἀντιστροφὴν τὸ ἐν μέρει ἀποφατικὸν.

51 b
Φανερὸν οὖν ὅτι οἱ αὐτοὶ συλλογισμοὶ οὐκ ἀναλύονται εἰς τοὺς τοῖς σχήμασιν οἴπερ οὐδὲ εἰς τὸ πρῶτον ἀνελύστο, καὶ ὅτι εἰς τὸ πρῶτον σχῆμα τῶν συλλογισμῶν ἀναγμένων οὔτοι μόνοι διὰ τοῦ ἀδυνάτου περαίνονται.

Πῶς μὲν οὖν δὲ τοὺς συλλογισμοὺς ἀνάγεις, καὶ ὅτι ἀναλύεται τὰ σχῆματα εἰς ἄλληλα, φανερὸν ἐκ τῶν εἰρημένων.

XLVI. Διαφέρει δὲ τι ἐν τῷ κατασκευάζειν ἢ ἀνασκευάζειν τὸ ὑπολαμβάνειν ή ταῦτον ή ἐτερον σημαίνει τὸ μὴ εἶναι τοῦτο καὶ εἶναι μὴ τούτῳ, οἶον τὸ μὴ εἶναι λευκόν τῷ εἶναι μὴ λευκόν. οὐ γὰρ ταῦτον σημαίνει, οὐδὲ ἕστιν ἀπόφασις τοῦ εἶναι λευκόν τὸ εἶναι μὴ λευκόν, ἀλλὰ τὸ μὴ εἶναι λευκόν. λόγος δὲ τοῦτον ὀδε.

Ὀμοίως γὰρ ἔχει τὸ δύναται βαδίζειν πρὸς τὸ δύναται οὐ βαδίζειν τῷ ἐστὶ λευκόν πρὸς τὸ ἐστὶν οὐ λευκόν, καὶ ἐπίσταται τάγαθον πρὸς τὸ ἐπίσταται τὸ οὐκ ἀγαθόν. τὸ γὰρ ἐπίσταται 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 'X is not Y' does not mean the same as 'X is not-

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.'

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ΑΡΙΣΤΟΤΗΛΗ

οι δύναται βαδίζειν—ούκ 
έστι δυνάμενος βαδίζειν. εἰ οὖν τὸ οὖκ έστι δυνά-
μενοι βαδίζειν ταύτο σημαίνει καὶ έστι δυνάμενοι
οὐ βαδίζειν ἢ μὴ βαδίζειν, ταύτα γε ἀμα υπάρχει
tαυτῷ (ὁ γὰρ αὐτός δύναται καὶ βαδίζειν καὶ μὴ
βαδίζειν, καὶ ἐπιστήμων τάγαθον καὶ τοῦ μη
ἀγαθοῦ ἐστι). φάσις δὲ καὶ ἀπόφασις οὐχ ὑπάρ-
χουσιν αἱ ἀντικείμεναι ἀμα τῷ αὐτῷ. ὥσπερ οὖν
οὗ ταὐτό έστι τὸ μη ἐπιστασθαι τάγαθον καὶ
ἐπιστασθαι τὸ μη ἀγαθόν, οὐδὲ εἶναι μὴ ἀγαθὸν καὶ
μὴ εἶναι ἀγαθὸν ταύτον. τῶν γὰρ ἀνὰ λόγον ἐάν
θάτερα ἢ ἑτερα, καὶ θάτερα. οὐδὲ τὸ εἶναι μὴ ἴσον
καὶ τὸ μη εἶναι ἴσον τῷ μὲν γὰρ ὑπόκειται τι, τῷ
ὅτι μὴ ἴσω, καὶ τούτ’ έστι τὸ ἄνισον. τῶ δ’
οὐδέν. διόπερ ἴσον μὲν ἡ ἄνισον οὐ πάν, ἴσον δ’ ἡ
οὐκ ἴσον πάν.

"Ετι τὸ ἄστιν οὐ λευκὸν ξύλον καὶ οὐκ ἄστι λευκὸν
ξύλον οὐχ ἀμα υπάρχει. εἰ γὰρ ἄστι ξύλον οὐ
λευκόν, ἔσται ξύλον τὸ δὲ μη ὅν λευκὸν ξύλον οὐκ
ἀνάγκη ξύλον εἶναι. ὥστε φανερὸν ὅτι οὐκ ἄστι τοῦ
ἄστιν ἀγαθόν τὸ ἄστιν οὐκ ἀγαθὸν ἀπόφασις. εἰ οὖν
κατὰ παντὸς εἶν τῇ φάσις τῇ ἀπόφασις ἀληθῆς, εἰ μὴ
ἄστιν ἀπόφασις, δὴν οὐκ κατάφασις ἀν πώς εἰη.
κατάφασις δὲ πάσης ἀπόφασις ἄστι καὶ ταύτης
ἀρα τὸ οὐκ ἄστιν οὐκ ἀγαθόν.

"Εχει δὲ τάξιν τήνδε πρὸς ἀλλήλα. ἄστιν τὸ
εἶναι ἀγαθὸν ἕφ’ οὗ Α, τὸ δὲ μὴ εἶναι ἀγαθὸν ἕφ’ οὗ
Β, τὸ δὲ εἶναι μὴ ἀγαθὸν ἕφ’ οὗ Γ, ὑπὸ τὸ Β, τὸ δὲ
μὴ εἶναι μὴ ἀγαθὸν ἕφ’ 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).
51 b υπάρξει ἣ τὸ Α ἢ τὸ Β, καὶ οὐδενὶ τῷ αὐτῷ· καὶ ἢ τὸ Γ ἢ τὸ Δ, καὶ οὐδενὶ τῷ αὐτῷ. καὶ ὃ τὸ Γ,  
52 a ἀνάγκη τὸ Β παντὶ υπάρξειν. εἰ γὰρ ἄληθες εἰπεῖν ὅτι οὐ λευκόν, καὶ ὅτι οὐκ ἐστὶ λευκὸν ἄληθες· ἀδύνατον γὰρ ἄμα εἶναι λευκὸν καὶ εἶναι μὴ λευκὸν, ἢ εἶναι ξύλον οὐ λευκόν καὶ εἶναι ξύλον λευκόν· ὅστε εἰ μὴ ἡ κατάφασις, ἡ ἀπόφασις υπάρξει. τῷ δὲ Β τὸ Γ οὐκ ἀεὶ· ὃ γὰρ ὅλως μὴ ξύλον, οὐδὲ ξύλον ἐσται οὐ λευκόν. ἀνάπαλιν τοῖνυν, ὡ τὸ Α, τὸ Δ παντὶ. ἢ γὰρ τὸ Γ ἢ τὸ Δ· ἐπεί δ’ οὐχ οἶνον τε ἄμα εἶναι μὴ λευκὸν καὶ λευκὸν, τὸ Δ υπάρξει. κατὰ γὰρ τοῦ οὗτος λευκοῦ ἄληθες εἰπεῖν ὅτι οὐκ ἐστὶν οὐ λευκόν. κατὰ δὲ τοῦ Δ οὐ παντὸς τὸ Α.  
10 κατὰ γὰρ τοῦ ὅλως μὴ οὗτος ξύλον οὐκ ἄληθες τὸ Α εἰπεῖν, ὥστε ἐστὶ ξύλον’ λευκὸν· ὡτε τὸ Δ ἄληθες, τὸ δ’ Α οὐκ ἄληθες, ὅτι ξύλον λευκόν. δῆλον δ’ ὅτι καὶ τὸ ΑΓ οὐδενὶ τῷ αὐτῷ καὶ τὸ Β καὶ τὸ Δ ἐνδέχεται τινὶ τῷ αὐτῶ υπάρξαι.  
15 Ὀμοίως δ’ ἔχουσι καὶ αἱ στερήσεις πρὸς τὰς κατηγορίας ταύτης τῇ θέσει. ἵσον ἕφ’ οὗ τὸ Α, οὐκ ἵσον ἕφ’ οὗ τὸ Β, ἀνίσον ἕφ’ οὗ Γ, οὐκ ἀνίσον ἕφ’ οὗ Δ.  

Καὶ ἐπὶ πολλῶν δέ, ὡν τοὺς μὲν υπάρξει τοῖς δ’ οὐχ υπάρξει ταύτῳ, ἡ μὲν ἀπόφασις ὀμοίως ἄληθευτικότητα ἐστὶν ἀν, ὅτι οὐκ ἐστὶ λευκὰ πάντα ἡ ὅτι οὐκ ἐστὶ λευκὸν ἔκαστον· ὅτι δ’ ἐστὶν οὐ λευκὸν ἔκαστον ἡ πάντα ἐστὶν οὐ λευκὰ ψεύδος. ὀμοίως δὲ καὶ τοῦ ἐστὶ παν ζώον λευκόν οὐ τὸ ἐστὶν οὐ λευκόν ἀπαν ζώον ἀπόφασις (ἀμφὶ γὰρ ψευδεῖς), ἀλλὰ τὸ οὐκ ἔστιν οὐ.
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
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52 a  ἐστὶ πάν ἥμων λευκῶν. ἐπεὶ δὲ δὴλον ὅτι ἑτερον
25 σημαίνει τὸ ἐστὶν οὐ λευκῶν καὶ οὐκ ἐστὶ λευκῶν,
καὶ τὸ μὲν κατάφασις τὸ δ’ ἀπόφασις, φανερὸν ὡς
οὔχ ὁ αὐτὸς τρόπος τοῦ δεικνύει ἑκάτερον, οἷον ὅτι
ὁ ἢ ἥμων οὐκ ἐστὶ λευκῶν ἢ ἐνδέχεται μὴ εἶναι
λευκῶν, καὶ ὅτι ἀληθές εἰπεὶν μὴ λευκῶν· τοῦτο γὰρ
10 ἐστὶν εἶναι μὴ λευκῶν. ἀλλὰ τὸ μὲν ἀληθές εἰπεὶν
ἐστὶ λευκὸν εἰτε μὴ λευκὸν ὁ αὐτὸς τρόπος· κατα-
σκευαστικῶς γὰρ ἀμφὶ διὰ τοῦ πρῶτον δεικνύειν
σχῆματος· τὸ γὰρ ἀληθὲς τῷ ἐστὶν ὁμοίως τάτ-
τεται· τοῦ γὰρ ἀληθὲς εἰπεὶν λευκῶν οὐ τὸ ἀληθὲς
eἰπεὶν μὴ λευκὸν ἀπόφασις, ἀλλὰ τὸ μὴ ἀληθὲς
eἰπεὶν λευκὸν. ἐν δὲ ἐσται ἀληθές εἰπεὶν ὅ ἢν
ὁ ἀνθρωπος μονοικον εἶναι ὡς μὴ μονοικον εἶναι,
ὁ ἢ ἥμων ληπτεον ἢ εἶναι μονοικον ἢ εἶναι μὴ
μονοικον, καὶ δεδεικται. τὸ δὲ μὴ εἶναι μονοικον
ὁ ἢ ἀνθρωπος ἀνασκευαστικῶς δεικνύειν κατά
τους εἰρήμενους τρόπους τρεῖς.

Ἀπλώς δ’ ὅταν οὕτως ἔχῃ τὸ Α καὶ τὸ Β ὕστερον
40 ἀμα μὲν τῷ αὐτῷ μὴ ενδεχεσθαι παντὶ ἐξ ἀνάγ-κης θάτερον, καὶ πάλιν τὸ Γ καὶ τὸ Δ ὑσαυτον,
52 εἶπεν τῇ τῷ Γ τὸ Α καὶ μὴ ἀντιστρέφη, καὶ τῷ
Β τῷ Δ ἀκολουθησει καὶ οὐκ ἀντιστρέφει· καὶ τῷ
μὲν Α καὶ τῷ Δ ενδέχεται τῷ αὐτῷ, τῷ δὲ Β καὶ
Γ οὐκ ενδέχεται.

5 Πρῶτον μὲν οὖν οὕτι τῷ Β τῷ Δ ἐπεταί ἐνθένδε
φανερὸν· ἐπεὶ γὰρ παντὶ τῶν ΓΔ θάτερον εἰς
ἀνάγκης, ὡ δὲ τῷ Β οὐκ ενδέχεται τῷ Γ διὰ τὸ

1 ἐσται Jenkinson: εστω codd.
2 τὸ Δ ἐπεται ABC: ἐπεται ὑ τὸ 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

\[ \text{Celarent, Cesare and Camestres.} \]
suνεπιφέρειν τὸ Α, τὸ δὲ Α καὶ Β μὴ ενδέχεσθαι τῷ αὐτῷ, φανερὸν ὃτι τὸ Δ ἀκολουθήσει. πάλιν ἐπεὶ τῷ Α τὸ Γ οὐκ ἀντιστρέφει, παντὶ δὲ τὸ Γ ἡ τὸ Δ, ενδέχεται τὸ A καὶ τὸ Δ τῷ αὐτῷ υπάρχειν· τὸ δὲ γε β καὶ τὸ Γ οὐκ ενδέχεται διὰ τὸ συνακολουθεῖν τῷ Γ τὸ Α· συμβαίνει γὰρ τι αὐτὸν. φανερὸν οὖν ὅτι οὐδὲ τῷ Δ τὸ Β ἀντιστρέφει, ἐπείπερ ἐγχωρεῖ ἀμα τὸ Δ καὶ τὸ Α υπάρχειν.
Συμβαίνει δ’ ἐνίοτε καὶ ἐν τῇ τοιαύτῃ τάξει τῶν ὅρων ἀπατάσθαι διὰ τὸ μὴ τὰ ἀντικείμενα λαμβάνειν ὀρθῶς ὅν ἀνάγκη παντὶ θάτερον υπάρχειν, οἷον εἰ τὸ Α καὶ τὸ Β μὴ ενδέχεσθαι ἀμα τῷ αὐτῷ, ἀνάγκη δ’ υπάρχειν, ὃ μὴ θάτερον, θάτερον· καὶ πάλιν τὸ Γ καὶ τὸ Δ ωσαύτως, ὃ δὲ τὸ Γ, παντὶ ἐπεται τοῦ Α. συμβήσεται γὰρ ὃ τὸ Δ τὸ Β υπάρχειν ἐξ ἀνάγκης, ὡσεὶ ἐστὶν φεύδος. εἰληφθω γὰρ ἀπόφασις τῶν ΑΒ ἢ ἐφ' ὃ Ζ, καὶ πάλιν τῶν ΓΔ ἢ ἐφ' ὃ Ὁ. ἀνάγκη δὴ παντὶ ἡ τὸ Α ἢ τὸ Ζ, ἡ γὰρ τὴν φάσιν ἡ τὴν ἀπόφασιν· καὶ πάλιν ἡ τὸ Γ ἢ τὸ Ὁ, φάσις γὰρ καὶ ἀπόφασις· καὶ ὃ τὸ Γ παντὶ τὸ Α υπόκειται· ὡσεὶ ὃ τὸ Ζ παντὶ τὸ Θ. πάλιν ἐπεὶ τῶν ΖΒ παντὶ θάτερον καὶ τῶν ΘΔ ωσαύτως, ἀκολουθεῖ δὲ τῷ Ζ τὸ Θ, καὶ τῷ Δ ἀκολουθήσει τὸ Β· τούτῳ γὰρ ἴσον. εἰ ἀρα τῷ Γ τὸ Α, καὶ τῷ Δ τὸ Β. τούτῳ δὲ φεύδος· ἀναπαλιν γὰρ ἡ ἐν τοῖς οὕτως ἔχουσιν ἡ ἀκολουθήσει. οὐ γὰρ ἴσως ἀνάγκη παντὶ τὸ Α ἢ 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 assertion 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. 52 b 4-13.
Z ἦ τὸ Β· οὐ γὰρ ἐστὶν ἀπόφασις τοῦ Α τὸ Ζ. τοῦ γὰρ ἀγαθοῦ τὸ οὐκ ἀγαθὸν ἀπόφασις· οὐ ταῦτά δ’ ἐστὶ τὸ οὐκ ἀγαθὸν τῷ οὐτ’ ἀγαθὸν οὐτ’ οὐκ ἀγαθὸν. ὁμοίως δὲ καὶ ἐπὶ τῶν ΓΔ· αἱ γὰρ ἀποφάσεις αἱ εἰλημέναι 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.
52 b 38. Ι. "Εν πόσοις μὲν οὖν σχήματι καὶ διὰ ποιῶν καὶ πόσων προτάσεων καὶ πότε καὶ πῶς γίγνεται συλλογισμὸς, ἐτι δὲ εἰς ποιὰ βλεπτέον ἀνασκευάζοντι καὶ κατασκευάζοντι, καὶ πῶς δεὶ ζήτειν περὶ τοῦ προκειμένου καθ' ὁποιανοῦ μέθοδον, ἐτι δὲ διὰ ποιας ὁδοῦ ληφώμεθα τὰς περὶ ἕκαστον ἀρχὰς, ἡδή διελθήθαμεν.
'Επεὶ δ' οἱ μὲν καθόλου τῶν συλλογισμῶν εἰσὶν οἱ δὲ κατὰ μέρος, οἱ μὲν καθόλου πάντες ἀεὶ πλεῖω συλλογίζονται, τῶν δ' ἐν μέρει οἱ μὲν κατηγορικοὶ πλεῖω, οἱ δ' ἀποφατικοὶ τὸ συμπέρασμα μόνον. αἱ μὲν γὰρ ἀλλαὶ προτάσεις ἀντιστρέφουσιν, ἡ δὲ στερητικὴ οὐκ ἀντιστρέφει τὸ δὲ συμπέρασμα τὶ κατὰ τινὸς ἔστιν· ὥσθ' οἱ μὲν ἄλλοι συλλογισμοὶ πλεῖω συλλογίζονται, οἰον εἰ τὸ Α δεδεικται παντὶ τῷ Β ἢ τινί, καὶ τὸ Β τινὶ τῷ Α ἀναγκαίον ὑπάρχειν· καὶ εἰ μηδενὶ τῷ Β τῷ Α, οὐδὲ τῷ Β οὐδενὶ τῷ Α (τούτο δ' ἔτερον τοῦ ἐμπροσθεν). εἰ δὲ τινὶ μὴ ὑπάρχει, οὐκ ἀνάγκη καὶ τὸ Β τινὶ τῷ Α μὴ ὑπάρχειν· ενδέχεται γὰρ παντὶ ὑπάρχειν.

* i.e. premisses. Cf. 43 b 36.
* Because the relation of subject and predicate is reversed. * Cf. 25 a 24.
BOOK II

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.
ARISTOTLE

15 Αὐτὴ μὲν οὖν κοινὴ πάντων αἰτία, τῶν τε καθολοῦ καὶ τῶν κατὰ μέρος· ἐστὶ δὲ περὶ τῶν καθόλου καὶ ἄλλως εἰπεῖν. ὅσα γὰρ ἦπο τὸ μέσον ἦ ὑπὸ τὸ συμπέρασμα ἐστὶν, ἀπάντων ἐσται ὁ αὐτὸς συλλογισμός, ἐὰν τὰ μὲν ἐν τῷ μέσῳ τὰ δ’ ἐν τῷ συμπεράσματι τεθῇ οὖν εἰ τὸ ΑΒ συμπέρασμα διὰ τοῦ Γ, ὅσα ὑπὸ τὸ Β ἦ τὸ Γ ἐστὶν, ἀνάγκη κατὰ πάντων λέγεσθαι τὸ Α· εἰ γὰρ τὸ Δ ἐν διὸ τῷ Β τὸ δὲ Β ἐν τῷ Α, καὶ τὸ Δ ἐσται ἐν τῷ Α. πάλιν εἰ τὸ Ε ἐν διὸ τῷ Γ τὸ δὲ Γ ἐν τῷ Α, καὶ τὸ Ε ἐν τῷ Α ἐσται. ὅμως δὲ καὶ εἰ στερητικὸς ὁ συλλογισμός. ἐπὶ δὲ τοῦ δευτέρου σχήματος τὸ ὑπὸ τὸ συμπέρασμα μόνον ἐσται συλλογισμός· οὖν εἰ τὸ Α τῷ Β μηδενὶ τῷ δὲ Γ παντὶ, συμπέρασμα ὅτι οὑδενὶ τῷ Γ τῷ Β. εἰ δὴ τὸ Δ ὑπὸ τὸ Γ ἐστὶ, φανερὸν ὅτι οὐχ ὑπάρχει αὐτῷ τὸ Β. τοῖς δ’ ὑπὸ τὸ Α ὅτι οὐχ ὑπάρχει οὐ δὴλον διὰ τοῦ συλλογισμοῦ. καίτοι οὐχ ὑπάρχει τῷ Ε, εἰ ἐστὶν ὑπὸ τὸ Α· ἄλλα τὸ μὲν τῷ Γ μηδενὶ ὑπάρχειν τὸ Β διὰ τοῦ συλλογισμοῦ δέδεικται, τὸ δὲ τῷ Α μὴ ὑπάρχειν ἀναπόδεικτον εἰληπται, ὥστε οὐ διὰ τὸν συλλογισμὸν συμβαίνει τὸ Β τῷ Ε μὴ ὑπάρχειν.

35 Ἐπὶ δὲ τῶν ἐν μέρει τῶν μὲν ὑπὸ τὸ συμπέρασμα οὐκ ἐσται τὸ ἀναγκαῖον (οὐ γὰρ γίγνεται συλλογισμὸς ὅταν αὐτὴ ληφθῇ ἐν μέρει), τῶν δ’ ὑπὸ τὸ μέσον ἐσται πάντων, πλὴν οὐ διὰ τὸ συλλογισμὸν, οὖν εἰ τὸ Α παντὶ τῷ Β τὸ δὲ Β τινὶ 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.
PRIOR ANALYTICS, II. i

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 \( \Delta B \) is a conclusion reached by means of C,\(^a\) 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.\(^b\)

As for particular syllogisms, there will be no necessary inference concerning the terms subordinate to the conclusion (since no syllogism results when this premiss \(^c\) 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.
53 a μὲν γὰρ ὑπὸ τὸ Γ τεθέντος οὐκ ἐσται συλλογισμός, τού δ᾿ ὑπὸ τὸ B ἐσται, ἀλλ᾿ οù διὰ τὸν προγεγενημένον. ὁμοίως δὲ κατὶ τῶν άλλων σχημάτων τοῦ μὲν γὰρ ὑπὸ τὸ συμπέρασμα οὐκ ἐσται, θατέρου δ᾿ ἐσται, πλὴν οù διὰ τὸν συλλογισμὸν, ἢ καὶ εν τοῖς καθόλου εξ ἀναποδείκτου τῆς προτάσεως τὰ ὑπὸ τὸ μέσον ἐδείκνυτο. ὥστ᾿ ἡ οὐδ᾿ ἐκεῖ ἐσται ἡ καὶ ἐπὶ τούτων.

II. Ἐστί μὲν οὖν οὕτως ἔχειν ὥστ᾿ ἀληθεῖς εἶναι τὰς προτάσεις δι᾿ ἃν ὁ συλλογισμός, ἐστι δ᾿ ὡστε ψευδείς, ἐστι δ᾿ ὡστε τήν μὲν ἀληθῆ τήν δὲ ψευδῆ: τὸ δὲ συμπέρασμα ἡ ἀληθὲς ἡ ψεύδος εξ ἀνάγκης. εξ ἀληθῶν μὲν οὖν οὐκ ἐστὶ ψεύδος συλλογίσασθαι, ἐκ ψευδῶν δ᾿ ἐστιν ἀληθὲς, πλὴν οù διότι ἀλλ᾿ ὅτι τοῦ γὰρ διότι οὐκ ἐστὶν ἐκ ψευδῶν συλλογισμὸς: δι᾿ ἢν δ᾿ αἰτίαν εν τοῖς ἐπομένους λειτήσεται.

Πρῶτον μὲν οὖν ὅτι εξ ἀληθῶν οὖχ οἷον τε ψεύδος συλλογίσασθαι εἰσεύθεν δῆλον. εἰ γὰρ τοῦ A ὄντος ἀνάγκη τὸ B εἶναι, τοῦ B μὴ ὄντος ἀνάγκη τὸ A μὴ εἶναι. εἰ οὖν ἀληθὲς ἐστὶ τὸ A, ἀνάγκη τὸ B ἀληθὲς εἶναι, ἡ συμβῆσεται τὸ αὐτὸ ἀμα εἶναι τε καὶ οὖχ εἶναι· τούτο δ᾿ ἀδύνατον. μὴ ὅτι δὲ κεῖται τὸ A ἕλε ὀρος ὑποληφθῆτω εἰνδέχεσθαι ἐνὸς τῶν ὄντως εξ ἀνάγκης τι συμβαίνειν· οὐ γὰρ οἷον τε· το μὲν γὰρ συμβαίνον εξ ἀνάγκης τὸ συμπέρασμά

* 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

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53 b

ἔστι, δ' ὑπὸ τοῦτο γίγνεται ἐλαχιστῶν τρεῖς ὤροι

δύο δὲ διαστήματα καὶ προτάσεις. εἰ οὖν ἄλληθες

ω τὸ Β ὑπάρχει τὸ Α παντὶ ω δὲ τὸ Γ τοῦ Β, ὃ
to Γ ανάγκη τὸ Α ὑπάρχειν, καὶ οὐχ οἶνον τοῦτο

ψεῦδος εἶναι ἁμα γὰρ ὑπάρξει ταῦτα καὶ οὖν

ὑπάρξει. το οὖν Α ῥώστερ εν κεῖται, δύο προτάσεις

25 συλληφθεῖσαι. ὀμοίως δὲ καὶ ἐπὶ τῶν στερητικῶν

ἑχει οὐ γὰρ ἐστιν ἐξ ἄλλων δεῖξαι ψεῦδος.

Ἐκ ψευδῶν δ' ἄλληθες ἐστι συλλογίσασθαι καὶ

ἀμφοτέρων τῶν προτάσεων ψευδῶν οὐσῶν καὶ τῆς

μιᾶς, ταύτης δ' οὐχ ὀποτέρας ἔτυχεν ἀλλὰ τῆς

deuteras, ἐάνπερ οἷς λαμβάνῃ ψευδή̂ μὴ ὅλης δὲ

30 λαμβανομένης ἐστιν ὀποτέρασσον.

'Εστὶ χάρ τὸ Α ὅλω τῷ Γ ὑπάρχον τῶν δὲ Β

μηδενεῖ, μηδὲ τὸ Β τῷ Γ. ένδέχεται δὲ τοῦτο, οἷον

λίθῳ οὐδενὶ ζωον, οὐδὲ λίθος οὐδενὶ ἄνθρωπῳ εἰς

ουν λεπτὴν τὸ Α παντὶ τῷ Β καὶ τὸ Β παντὶ τῷ Γ,
to Α παντὶ τῷ Γ ὑπάρξει, ὡστ' εἰς ἀμφοῖν ψευδῶν

40 ἄλθες τὸ συμπέρασμα (πᾶς γὰρ ἄνθρωπος ζωον).

ωσαύτως δὲ καὶ τὸ στερητικὸν. ἐστὶ χάρ τῷ Γ μήτε

τὸ Α ὑπάρχειν μηδενεί μήτε τῷ Β, τὸ μέντοι Α
to Β παντὶ, οἷον εἶν τῶν αὐτῶν ὤρων ληβδέντων

μέσον τεθήναι ὁ ἄνθρωπος λίθῳ γὰρ οὕτε ζωον οὔτε

άνθρωπος οὐδενὶ ὑπάρξει, ἄνθρωπως δὲ παντὶ ζωον.

40 ὡστ' εὰν ὃ μὲν ὑπάρχει λάβη μηδενεὶ ὑπάρχει, ὃ
dὲ μὴ ὑπάρξει παντὶ ὑπάρχει, ἐκ ψευδῶν ἀμφοῦ.

54 ἄλθες ἐσται τὸ συμπέρασμα. ὀμοίως δὲ δειχ-

θήσεται καὶ εὰν ἐπὶ τὶ ψευδῆς ἐκατέρα ληθή.

1 ἀλλὰ τῆς δευτέρας om. Bu, Jenkinson.

* i.e. contrary to the true premiss. Cf. 54 a 4.
PRIOR ANALYTICS, II. II

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.
Εάν δ’ ἡ ἐτέρα τεθη ψευδής, τῆς μὲν πρώτης ὅλης ψευδοῦς ὤσις, οἷον τῆς AB, οὐκ ἔσται τὸ συμπέρασμα ἀληθές, τῆς δὲ BG ἔσται. λέγω δ’ 5 ὅλην ψευδή τὴν ἑναντίαν, οἷον εἰ μηδενὶ ὑπάρχον παντὶ εἰληπται ἢ εἰ παντὶ μηδενὶ ὑπάρχειν. ἐστώ γὰρ τὸ A τῷ B μηδενὶ ὑπάρχον, τὸ δὲ B τῷ Γ παντὶ. ἀν δὴ τὴν μὲν BG πρὸτασιν λάβω ἀληθή τὴν δὲ τὸ ΑΒ ψευδή ὅλην, καὶ παντὶ ὑπάρχειν τῷ B τῷ A, ἀδύνατον τὸ συμπέρασμα ἀληθές εἶναι: 10 οὐδὲν ἐστὶ ὑπήρχε τῶν Γ, εἰπερ ώ τὸ B, μηδενὶ τὸ A, τὸ δὲ B παντὶ τῷ Γ. ὀμοίως δ’ οὐδ’ εἰ τὸ A τῷ B παντὶ ὑπάρχει καὶ τὸ Β τῷ Γ παντὶ, ἐλήφθη δ’ ἢ μὲν τὸ ΒΓ ἀληθῆς πρὸτασις ἢ δὲ τὸ ΑΒ ψευδής ὅλη, καὶ μηδενὶ ώ τὸ B τὸ A, τὸ συμπέρασμα ψευδὸς ἔσται: παντὶ γὰρ ὑπάρξει τῷ Γ τῷ A, 15 εἰπερ ώ τὸ B, παντὶ τὸ A, τὸ δὲ B παντὶ τῷ Γ. φανερὸν οὖν ὅτι τῆς πρώτης ὅλης λαμβανομένης ψευδοῦς, εάν τε καταφατικῆς εάν τε στερητικῆς, τῆς δ’ ἐτέρας ἀληθοῦς, οὐ γίγνεται ἀληθὲς τὸ συμπέρασμα. μὴ ὅλης δὲ λαμβανομένης ψευδοῦς ἔσται. εἰ γὰρ τὸ A τῷ μὲν Γ παντὶ ὑπάρχει τῷ δὲ B τινὶ, τὸ δὲ B παντὶ τῷ Γ, οἷον ζῷον κύκνω μὲν παντὶ λευκῷ δὲ τινὶ, τὸ δὲ λευκὸν παντὶ κύκνῳ, ἐὰν ληφθῇ τὸ A παντὶ τῷ B καὶ τὸ B παντὶ τῷ Γ, τὸ A παντὶ τῷ Γ ὑπάρξει ἀληθῶς πᾶς γὰρ κύκνος ζῷον. ὀμοίως δὲ καὶ εἰ στερητικὸν εἰη τὸ ΑΒ. 20 ἐγχωρεῖ γὰρ τὸ A τῷ μὲν B τινὶ ὑπάρχειν τῷ δὲ Γ μηδενὶ, τὸ δὲ B παντὶ τῷ Γ, οἷον ζῷον τινὶ λευκῷ χιόνι δ’ οὐδεμιᾶ, λευκὸν δὲ πάσῃ χιόνι. εἰ οὖν ληφθεῖ τὸ μὲν A μηδενὶ τῷ B τὸ δὲ B παντὶ τῷ Γ, τὸ A οὐδενὶ τῷ Γ ὑπάρξει. εὰν δ’ ἡ μὲν ΑΒ πρό-
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.
ΑΡΙΣΤΟΤΛΗ

τασίς ὅλῃ ληφθῇ ἄλθησις ἢ δὲ ΒΓ ὅλῃ ψευδής, ἐσται
σύλλογισμὸς ἄλθησις· οὐδὲν γὰρ κωλύει τὸ Α τῷ Β
καὶ τῷ Γ παντὶ ὑπάρχειν, τὸ μέντοι Β μηδενὶ τῷ Γ,
ολὸν ὡσα τοῦ αὐτοῦ γένους εἰδὴ μὴ ὑπ᾽ ἄλθησιν τὸ
γὰρ ζώον καὶ ἰππὸ καὶ ἄνθρωπῳ ὑπάρχει, ἰππὸς δ᾽
οὐδενὶ ἄνθρωπῳ. ἐάν οὖν ληφθῇ τὸ Α παντὶ τῷ
Β καὶ τὸ Β παντὶ τῷ Γ, ἀληθὲς ἐσται τὸ συμπέρα-
σμα ψευδοῦς ὅλῃς οὐσίας τῆς ΒΓ προτάσεως.

Όμοιως δὲ καὶ στερητικῆς οὐσίας τῆς ΑΒ προ-
τάσεως. εἰδέχεται γὰρ τὸ Α μήτε τῷ Β μήτε τῷ
Γ μηδενὶ ὑπάρχειν, μηδὲ τὸ Β μηδενὶ τῷ Γ, ολὸν
τοῖς εἴ ἄλλου γένους εἰδεὶ τὸ γένος· τὸ γὰρ ζῴον
οὔτε μοισικὴ οὔτ᾽ ἱατρικὴ ὑπάρχει, οὐδὲ ἡ μοισικὴ
ἱατρικὴ. Ληφθέντος οὖν τοῦ μὲν Α μηδενὶ τῷ Β
τοῦ δὲ Β παντὶ τῷ Γ, ἀληθὲς ἐσται τὸ συμπέρασμα.

Καὶ εἰ μὴ ὅλῃ ψευδῆς ἢ ΒΓ ἀλλ᾽ ἐπὶ τι, καὶ οὕτως
ἐσται τὸ συμπέρασμα ἀληθέσι. οὐδὲν γὰρ κωλύει
τὸ Α καὶ τῷ Β καὶ τῷ Γ ὅλῳ ὑπάρχειν, τὸ μέντοι
Β τινὶ τῷ Γ, ολὸν τὸ γένος τῶ εἶδει καὶ τῇ διαφορᾷ:
τὸ γὰρ ζῷον παντὶ ἄνθρωπῳ καὶ παντὶ πεζῷ, ὥς τοῦ
ἄνθρωπος τινὶ πεζῷ καὶ οὐ παντὶ. εἰ οὖν τὸ Α
παντὶ τῷ Β καὶ τὸ Β παντὶ τῷ Γ ληφθεὶς, τὸ Α
παντὶ τῷ Γ ὑπάρξει· ὅπερ ἡν ἀληθέσι.

Ὅμοιως δὲ καὶ στερητικῆς οὐσίας τῆς ἈΒ προ-
τάσεως. εἰδέχεται γὰρ τὸ Α μήτε τῷ Β μήτε
tοῦ Γ μηδενὶ ὑπάρχειν, τὸ μέντοι Β τινὶ τῷ Γ, ολὸν
tὸ γένος τῷ εἶ ἄλλου γένους εἶδει καὶ διαφορᾷ· τὸ
gὰρ ζῷον οὔτε φρονήσει οὐδεμιᾶ ὑπάρχει οὔτε

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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  

δεωρητικη, ἡ δὲ φρονίσεις τινι δεωρητικη. εἰ οὖν  

ληφθεὶν τὸ μὲν Α μηδεν τῷ Β τὸ δὲ Β παντὶ τῷ  

Γ, οὐδεν τῷ Γ τὸ Α υπάρξει τοῦτο δ' ἦν ἄληθὲς.  

'Επὶ δὲ τῶν ἐν μέρει συλλογισμῶν ἐνδέχεται καὶ  

τῆς πρώτης προτάσεως ὅλης οὕσης ψευδοὺς τῆς  

δ' ἐτέρας ἀλήθος ἄληθὲς εἰναι τὸ συμπέρασμα, καὶ  

ἐπὶ τι ψευδοὺς οὕσης τῆς πρώτης τῆς δ' ἐτέρας  

ἀλήθος, καὶ τῆς μὲν ἀλήθος τῆς δ' ἐν μέρει  

ψευδοὺς, καὶ ἀμφοτέρων ψευδών. οὐδὲν γάρ κω-  

λύει τὸ Α τῷ μὲν Β μηδεν ὑπάρχειν τῷ δὲ Γ τινί,  

καὶ τὸ Β τῷ Γ τινί, οἷον ζῷον οὐδεμιᾷ χών λευκῷ  

δὲ τινὶ ὑπάρχει, καὶ ἡ χών λευκῷ τινί. εἰ οὖν  

μέσον τεθεὶ ἡ χών πρώτον δὲ τὸ ζῷον, καὶ  

ληφθεὶν τὸ μὲν Α ὅλῳ τῷ Β ὑπάρχειν τὸ δὲ Β τινὶ  

τῷ Γ, ἡ μὲν ΑΒ ὅλη ψευδῆς, ἡ δὲ ΒΓ ἄληθῆς, καὶ  

τὸ συμπέρασμα ἄληθὲς. ὀμοίως δὲ καὶ στερητικῆς  

οὕσης τῆς ΑΒ προτάσεως' ἐγχωρεῖ γάρ τὸ Α τῷ  

μὲν Β ὅλῳ ὑπάρχειν τῷ δὲ Γ τινὶ μὴ ὑπάρχειν, τὸ  

μέντοι Β τινὶ τῷ Γ ὑπάρχειν, οἷον τὸ ζῷον ἀνθρώπω  

μὲν παντὶ ὑπάρχει λευκῷ δὲ τινὶ οὖχ ἐπεται, ὁ δ'  

ἀνθρωπος τινὶ λευκῷ ὑπάρχειί ωστ' εἰ μέσου  

τεθεῖτο τοῦ ἀνθρώπου ληφθεὶ τὸ Α μηδεν τῷ Β  

ὑπάρχειν τὸ δὲ Β τινὶ τῷ Γ ὑπάρχειν, ἄληθὲς ἐσται  

τὸ συμπέρασμα ψευδοὺς οὕσης ὅλης τῆς ΑΒ προ-  

τάσεως.

Καὶ εἰ ἐπὶ τι ψευδῆς η ἈΒ πρότασης, ἐσται τὸ  

συμπέρασμα ἄληθὲς. οὐδὲν γάρ κωλύει τὸ Α καὶ  

τῷ Β καὶ τῷ Γ τινὶ ὑπάρχειν, καὶ τὸ Β τῷ Γ τινὶ  

ὑπάρχειν, οἷον τὸ ζῷον τινὶ καλῷ καὶ τινὶ μεγάλῳ,  

καὶ τὸ καλὸν τινὶ μεγάλῳ ὑπάρχειν. εὰν οὖν ληφθῇ

1 ἄληθοις] ὅλης ἄληθοις 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. τὸ Α παντὶ τῷ Β καὶ τὸ Β τινὶ τῷ Γ, ἡ μὲν ΑΒ πρότασις ἐπὶ τὶ ψευδὴς ἐσται, ἡ δὲ ΒΓ ἀληθὴς, καὶ τὸ συμπέρασμα ἀληθὲς. ομοίως δὲ καὶ στερητικῆς οὐσῆς τῆς ΑΒ προτάσεως: οἱ γὰρ αὐτοὶ ὅροι ἔσονται καὶ ὡσαύτως κείμενοι πρὸς τὴν ἀπόδειξιν.

Πάλιν εἰ ἡ μὲν ΑΒ ἀληθὴς ἡ δὲ ΒΓ ψευδὴς, ἀληθὲς ἔσται τὸ συμπέρασμα. οὐδὲν γὰρ κωλύει τὸ Α τῷ μὲν Β ὅλῳ ὑπάρχειν τῷ δὲ Γ τινὶ, καὶ τὸ Β τῷ Γ μηδενὶ ὑπάρχειν, οἶνον ζῴων κύκνῳ μὲν παντὶ μέλαιν δὲ τινὶ, κύκνος δὲ οὐδενὶ μελανὶ ὡστ' εἰ ληφθεὶ παντὶ τῷ Β τὸ Α καὶ τὸ Β τινὶ τῷ Γ, ἀληθὲς ἔσται τὸ συμπέρασμα ψευδῶς ὑπότος τοῦ ΒΓ.

'Ομοίως δὲ καὶ στερητικῆς λαμβανομένης τῆς ΑΒ προτάσεως. ἐγχωρεῖ γὰρ τὸ Α τῷ μὲν Β μηδενὶ τῷ δὲ Γ τινὶ μὴ ὑπάρχει, τὸ μὲντοί Β μηδενὶ τῷ Γ, οἶνον τὸ γένος τῷ ἀλλῷ γένους εἰδεί καὶ τῷ συμβεβηκότι τοῖς αὐτοῖς εἰδεί· τὸ γὰρ ζῷων ἀριθμῷ ἀριθμός οὐδενὶ ὑπάρχει λευκῷ δὲ τινὶ οὐ, ὁ δ' ἀριθμὸς οὐδενὶ λευκῷ· εὰν οὖν μέσον τεθῇ ὁ ἀριθμός, καὶ ληφθῇ τὸ μὲν Α μηδενὶ τῷ Β τὸ δὲ Γ τινὶ τῷ Α τινὶ τῷ Γ οὐχ ὑπάρχει, ὅπερ ἦν ἀληθὲς· καὶ ἡ μὲν ΑΒ πρότασις ἀληθῆς, ἡ δὲ ΒΓ ψευδῆς.

Καὶ εἰ ἐπὶ τὶ ψευδῆς ἡ ΑΒ ψευδῆς δὲ καὶ ἡ ΒΓ ἐσται τὸ συμπέρασμα ἀληθὲς. οὐδέν γὰρ κωλύει τὸ Α τῷ Β τινὶ καὶ τῷ Γ τινὶ ὑπάρχειν ἐκατέρω, τὸ δὲ Β μηδενὶ τῷ Γ, οἶνον εἰ ἐναντίον τὸ Β τῷ Γ, ἀμφοὶ δὲ συμβεβηκότα τῷ αὐτῷ γένει· τὸ γὰρ ζῷων τινὶ λευκῷ καὶ τινὶ μέλαιν ὑπάρχει, λευκὸν δ' οὐδενὶ μέλαιν. εὰν οὖν ληφθῇ τὸ Α παντὶ τῷ Β καὶ τῷ Β τινὶ τῷ Γ, ἀληθὲς ἔσται τὸ συμπέρασμα. καὶ στερητικῆς δὲ λαμβανομένης τῆς ΑΒ ὡσαύτως· οἱ

1 τοι ὡς Philoponus (?), Jenkinson: τοί 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
γάρ αυτοί ὁροί καὶ ὁσαύτως τεθήσονται πρὸς τὴν ἀπὸδείξειν.

Καὶ ἀμφοτέρων δὲ ψευδῶν οὐσῶν ἐσται τὸ 30 συμπέρασμα ἀληθῆς· ἐγχωρεῖ γάρ τὸ Α τῷ μὲν Β μηδενὶ τῷ δὲ Γ τινὶ ὑπάρχειν, τὸ μέντοι Β μηδενὶ τῷ Γ, οἷον τὸ γένος τῶν ἐκ ἄλλου γένους εἶδει καὶ τῷ συμβεβηκότι τοῖς εἰδεσὶ τοῖς αὐτοῦ· ζῶον γάρ ἀρετὴν μὲν οὐδενὶ λεικῷ δὲ τινὶ ὑπάρχει, καὶ οἱ ἀρετῆς οὐδενὶ λεικῷ. ἔαν οὖν ληφθῇ τὸ Α παντὶ τῷ Β καὶ τῷ Γ τινὶ τῷ Γ, τὸ μὲν συμπέρασμα ἀληθῆς, αἱ δὲ προτάσεις ἀμφὶ ψευδεῖς. Ὅμως δὲ καὶ στερητικῆς οὐσῆς τῆς ΑΒ. οὐδὲν γάρ κωλύει τὸ Α τῷ μὲν Β ὅλῳ ὑπάρχειν τῷ δὲ Γ τινὶ μὴ ὑπάρχειν, μηδὲ τὸ Β μηδενὶ τῷ Γ, οἷον ζῶον κύκνῳ μὲν παντὶ μέλανί δὲ τινὶ οὐχ ὑπάρχει, 40 κύκνῳ δὲ οὐδενὶ μέλανι· ὡστ' εἰ ληφθεὶ τὸ Α μηδενὶ τῷ Β τῷ δὲ Β τινὶ τῷ Γ, τὸ Α τινὶ τῷ Γ οὐχ ὑπάρχει. τὸ μὲν οὖν συμπέρασμα ἀληθῆς, αἱ δὲ προτάσεις ψευδεῖς.

III. Ἐν δὲ τῷ μέσῳ σχήματι πάντως ἐγχωρεῖ διὰ ψευδῶν ἀληθῆς συλλογισμοῦ, καὶ ἀμφοτέρων 5 τῶν προτάσεων ὅλων ψευδῶν λαμβανομένων [καὶ ἐπὶ τι ἐκατέρας], καὶ τῆς μὲν ἀληθοῦς τῆς δὲ ψευδοῦς οὐσῆς ὅλης, ὀποτερασοῦν ψευδοῦς τιθεμένης, καὶ εἰ ἀμφοτέροι ἐπὶ τι ψευδεῖς, καὶ εἰ ἡ μὲν ἀπλῶς ἀληθῆς ἢ δ' ἐπὶ τι ψευδῆς, καὶ εἰ ἡ μὲν ὅλη ψευδῆς ἢ δ' ἐπὶ τι αληθῆς, καὶ εἰ ἐν τοῖς καθολου 10 καὶ ἐπὶ τῶν ἐν μέρει συλλογισμῶν.

Εἰ γάρ τὸ Α τῷ μὲν Β μηδενὶ ὑπάρχει τῷ δὲ Γ καὶ . . . ἐκατέρας omittenda ci. Jenkinson.

* These words, if not inserted by error in anticipation of
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;]° (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 —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.

° This case is not treated in the discussion which follows.
παντὶ, οἰον ζῷον λίθῳ μὲν οὐδὲν ἐπεὶ παντὶ, εὰν ἐνασίως τεθῶσιν αἱ προτάσεις καὶ ληφθῇ τὸ Α τῷ μὲν Β παντὶ τῷ δὲ Γ μηδενὶ, ἐκ γενοῦς ὄλων τῶν προτάσεων ἀληθεῖς ἦσσαι τὸ συμπέρασμα. 

ομοίως δὲ καὶ εἶ τῷ μὲν Β παντὶ τῷ δὲ Γ μηδενὶ ὑπάρχει τὸ Α· ὁ γὰρ αὐτὸς ἦσσαι συλλογισμὸς.

Πάλιν εἰ ἡ μὲν ἐτέρα ὅλη γενοῦς ἡ δ' ἐτέρα ὅλῃ ἀληθῆς: οὐδὲν γὰρ κωλύει τὸ Α καὶ τῷ Β καὶ τῷ Γ παντὶ ὑπάρχειν, τὸ μέν τινι Β μηδενὶ τῷ Γ, οἷον τὸ γένος τοῖς μὴ ὑπ' ἀλληλα εἴδεσιν, τὸ γὰρ ζῷον καὶ ἐπεὶ παντὶ καὶ ἀνθρώπως, καὶ οὐδεὶς ἀνθρώπως ἐπεὶ, εὰν οὖν ληφθῇ τὸ ζῷον τῷ μὲν παντὶ τῷ δὲ μηδενὶ ὑπάρχειν, ἡ μὲν ὅλη γενοῦς ἦσσαι ἡ δ' ὅλῃ ἀληθῆς, καὶ τὸ συμπέρασμα ἀληθεῖς πρὸς ὀποτερωσὶν τεθέντος τοῦ στηρητικοῦ.

Καὶ εἰ ἡ ἐτέρα ἐπί τι γενοῦς ἡ δ' ἐτέρα ὅλῃ ἀληθῆς. ἐγχωρεῖ γὰρ τὸ Α τῷ μὲν Β τινὶ ὑπάρχειν τῷ δὲ Γ παντὶ, τὸ μέν τινι Β μηδενὶ τῷ Γ, οἷον ζῷον λευκῷ μὲν τινὶ κόρακι δὲ παντὶ, καὶ τὸ λευκὸν οὐδενὶ κόρακι. εὰν οὖν ληφθῇ τὸ Α τῷ μὲν Β μηδενὶ τῷ δὲ Γ ὅλῳ ὑπάρχειν, ἡ μὲν ΑΒ προτάσεις ἐπὶ τι γενοῦς ἡ δ' ΑΓ ὅλῃ ἀληθῆς, καὶ τὸ συμπέρασμα ἀληθεῖς, καὶ μετατυπεμένου δὲ τοῦ στηρητικοῦ ὁσαυτώς: διὰ γὰρ τῶν αὐτῶν ὅρων ἡ ἀπόδειξις. καὶ εἰ ἡ καταφατικὴ προτάσεις ἐπὶ τι γενοῦς ἡ δ' στηρητικὴ ὅλῃ ἀληθῆς. οὐδὲν γὰρ κωλύει τὸ Α τῷ μὲν Β τινὶ ὑπάρχειν τῷ δὲ Γ ὅλῳ μὴ ὑπάρχειν, καὶ τὸ Β μηδενὶ τῷ Γ, οἷον τὸ ζῷον λευκῷ μὲν τινὶ πίπτῃ δ' οὐδεμία, καὶ τὸ λευκὸν οὐδεμία πίπτῃ: ὅστ' εὰν ληφθῇ τὸ Α ὅλῳ τῷ Β.
PRIOR ANALYTICS, II. III

applies to no 'stone' but to all 'horse,' if the premisses are taken in the contrary sense and A is assumed to apply to all B but to no C, although the premisses 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 premiss 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 premiss 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 premiss 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 premiss 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 premiss 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

\[ a \text{ i.e., if the minor premiss is negative.} \]
υπάρχειν τῷ δὲ Γ μηδενί, ἡ μὲν ΑΒ ἐπὶ τὶ φευδὴς, ἡ δ’ ΑΓ ὅλη ἀληθῆς, καὶ τὸ συμπέρασμα ἀληθές.

Καὶ εἰ ἀμφότεραι αἱ προτάσεις ἐπὶ τὶ φευδεῖς, ἐσταὶ τὸ συμπέρασμα ἀληθές. ἐγχωρεῖ γὰρ τὸ Α καὶ τῷ B καὶ τῷ Γ τινὶ ὑπάρχειν, τὸ δὲ B μηδενί τῶ Γ, οἶνον ζῷον καὶ λευκῷ τινὶ καὶ μέλανι τινὶ, τὸ δὲ λευκὸν οὐδενὶ μέλανι. εάν οὖν ληφθῇ τὸ Α τῷ μὲν B παντὶ τῷ δὲ Γ μηδενί, ἀμφὶ μὲν αἱ προτάσεις ἐπὶ τὶ φευδεῖς, τὸ δὲ συμπέρασμα ἀληθές. ὀμοίως δὲ καὶ μετατεθείσης τῆς στερητικῆς διὰ τῶν αὐτῶν ὅρων.

5 Φανερὸν δὲ καὶ ἐπὶ τῶν ἐν μέρει συλλογισμῶν οὐδὲν γὰρ κωλύει τὸ Α τῷ μὲν B παντὶ τῷ δὲ Γ τινὶ ὑπάρχειν, καὶ τὸ B τῷ Γ τινὶ μὴ ὑπάρχειν, οἶνον ζῷον παντὶ ἀνθρώπῳ λευκῷ τινὶ, ἀνθρώπῳ δὲ τινὶ λευκῷ οὐχ ὑπάρξῃ. εάν οὖν τεθῇ τὸ Α τῷ μὲν B μηδενὶ ὑπάρχειν τῷ δὲ Γ τινὶ ὑπάρχειν, ἡ μὲν καθόλου πρότασις ὅλῃ φευδῆς, ἡ δ’ ἐν μέρει ἀληθῆς, καὶ τὸ συμπέρασμα ἀληθές.

'Ωσαύτως δὲ καὶ καταφατικῆς λαμβανομένης τῆς ΑΒ: ἐγχωρεῖ γὰρ τὸ Α τῷ μὲν B μηδενὶ τῷ δὲ Γ τινὶ μὴ ὑπάρχειν, καὶ τὸ B τῷ Γ τινὶ μὴ ὑπάρχειν, 10 οἶνον τῷ ζῷον οὐδενὶ ἀψύχῳ, λευκῷ δὲ τινὶ οὐχ ὑπάρξῃ, καὶ τῷ θυμῷ οὐχ ὑπάρξῃ τινὶ λευκῷ. εάν οὖν τεθῇ τὸ Α τῷ μὲν B παντὶ τῷ δὲ Γ τινὶ μὴ ὑπάρχειν, ἡ μὲν ΑΒ πρότασις ἡ καθόλου ὅλῃ φευδῆς, ἡ δ’ ΑΓ ἀληθῆς, καὶ τὸ συμπέρασμα ἀληθές.

Καὶ τῆς μὲν καθόλου ἀληθοῦς τεθείσης τῆς δ’ ἐν τῷ μέρει φευδοῦς. οὐδὲν γὰρ κωλύει τὸ Α μὴτε 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,a 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

a Cf. previous note.
μήτε τῷ Γ οὐδενὶ ἔπεσθαι, τὸ μέντοι Β τινὶ τῷ Γ
μὴ ὑπάρχειν, οἷον ζῷον οὐδενὶ ἀρθμῷ οὐδ’ ἀψύχῳ,
καὶ οἳ ἀριθμοῖ τινὶ ἀψύχῳ οὐχ ἔπεται. εἰάν οὖν τεθῇ
τὸ Α τῷ μὲν Β μηδενὶ τῷ δὲ Γ τινὶ, τὸ μὲν συμπέ-
ρασμα ἐσται ἀληθὲς, καὶ ἡ καθόλου πρῶταις ἀληθῆς
25 ἡ δ’ εὖ μέρει ψευδῆς.

Καὶ καταφατικῆς δὲ τῆς καθόλου τιθεμένης
ὡς τῶς. ἐγγυρεὶ γὰρ τὸ Α καὶ τῷ Β καὶ τῷ Γ
ὁλῳ ὑπάρχειν, τὸ μέντοι Β τινὶ τῷ Γ μὴ ἔπεσθαι,
οἷον τὸ γένος τῷ εἰδε καὶ τῇ διαφορᾷ, τὸ γὰρ ζῷον
παντὶ ἀνθρώπῳ καὶ ὅλῳ πεζῷ ἔπεται, ἀνθρώπως δ’
30 οὐ παντὶ πεζῷ· ὥστ’ ἀν ληφθῇ τὸ Α τῷ μὲν Β ὅλῳ
ὑπάρχειν τῷ δὲ Γ τινὶ μὴ ὑπάρχειν, ἡ μὲν καθόλου
πρῶταις ἀληθῆς ἡ δ’ εὖ μέρει ψευδῆς, τὸ δ’
συμπέρασμα ἀληθῆς.

Φανερὸν δὲ καὶ ὅτι ἐς ἀμφοτέρων ψευδῶν ἐσται
τὸ συμπέρασμα ἀληθῆς, εἰπέρ εὐδέχεται τὸ Α καὶ
τῷ Β καὶ τῷ Γ ὅλῳ ὑπάρχειν, τὸ μέντοι Β τινὶ τῷ
35 Γ μὴ ἔπεσθαι. ληφθέντος γὰρ τοῦ Α τῷ μὲν Β
μηδενὶ τῷ δὲ Γ τινὶ ὑπάρχειν, αἱ μὲν πρῶταις
ἀμφοτέραι ψευδῆς, τὸ δ’ συμπέρασμα ἀληθῆς.

‘Ομοίως δὲ καὶ κατηγορικῆς οὕσης τῆς καθόλου
πρῶταις τῆς δ’ εὖ μέρει στερητικῆς. ἐγγυρεὶ
gὰρ τὸ Α τῷ μὲν Β μηδενὶ τῷ δὲ Γ παντὶ ἔπεσθαι,
40 καὶ τὸ Β τινὶ τῷ Γ μὴ ὑπάρχειν, οἷον ζῷον ἐπι-
στήμην μὲν οὐδεμᾶ ἀνθρώπῳ δὲ παντὶ ἔπεται, ἡ δ’
45 ἐπιστήμην οὐ παντὶ ἀνθρώπῳ. εἰάν οὖν ληφθῇ τὸ
Α τῷ μὲν Β ὅλῳ ὑπάρχειν τῷ δὲ Γ τινὶ μὴ ἔπεσθαι,
αἱ μὲν πρῶταις ψευδῆς, τὸ δ’ συμπέρασμα
ἀληθῆς.

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. "Εσται δὲ καὶ ἐν τῷ ἐσχάτῳ σχήματι διὰ τούτου ἀλήθεις, καὶ ἀμφοτέρως ϕευδῶν οὕσων ὅλων καὶ ἐπὶ τι ἐκάτερας, καὶ τῆς μὲν ἐτέρας ἀλήθος ὅλης τῆς δ' ἐτέρας ϕευδοῦς, καὶ τῆς μὲν ἐπὶ τι ϕευδοῦς τῆς δ' ὅλης ἀλήθος, καὶ ἀνάπαλων, καὶ ὀσαχῶς ἄλλως εὐχωρεῖ μεταλαβεῖν τὰς προτάσεις. οὐδὲν γὰρ κωλύει μήτε τὸ Α μήτε τὸ Β μηδεὶ τῷ Γ ὑπάρχειν, τὸ μέντοι Α τινὶ τῷ Β ὑπάρχειν, οἷον οὔτ' ἀνθρωπος οὔτε πεζὸν οὐδενὶ ἀφύξω ἔπεται, ἀνθρωπος μέντοι τινὶ πεζῷ ὑπάρχει. εάν οὖν ιηθῇ τὸ Α καὶ τὸ Β παντὶ τῷ Γ ὑπάρχειν, αἰ μὲν προτάσεις οἵαι ϕευδεῖς, τὸ δὲ συμπέρασμα ἀληθεῖς. ώσαίτως δὲ καὶ τῆς μὲν στερητικῆς τῆς δὲ καταφατικῆς οὕσης. εὐχωρεῖ γὰρ τὸ μὲν Β μηδεὶ τῷ Γ ὑπάρχειν τὸ δὲ Α παντὶ, καὶ τὸ Α τινὶ τῷ Β μὴ ὑπάρχειν, οἷον τὸ μέλαν οὐδενὶ κύκνῳ ζώων δὲ παντὶ, καὶ τὸ ζώων οὐ παντὶ μέλαν. ὡστ' ἀν ιηθῇ τὸ μὲν Β παντὶ τῷ Γ τὸ δὲ Α μηδεὶ, τὸ Α τινὶ τῷ Β οὖχ ὑπάρχει. καὶ τὸ μὲν συμπέρασμα ἀληθεῖς, αἰ δὲ προτάσεις ϕευδεῖς.

Καὶ εἰ ἐπὶ τι ἐκάτερα ϕευδῆς, ἐσται 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 καλὸν τινὶ ζώῳ ὑπάρχει, καὶ τὸ λευκὸν τινὶ καλῷ. εάν οὖν τεθῇ τὸ Α καὶ τὸ Β παντὶ τῷ Γ ὑπάρχειν, αἰ μὲν προτάσεις ἐπὶ τι ϕευδεῖς, τὸ δὲ συμπέρασμα ἀληθεῖς. καὶ στερητικῆς δὲ τῆς ΑΓ τιθεμένης ὁμοίως. οὐδὲν γὰρ κωλύει τὸ μὲν Α τινὶ τῷ Γ μὴ ὑπάρχειν τὸ δὲ Β τινὶ ὑπάρχειν, καὶ τὸ Α τῷ Β μή παντὶ ὑπάρχειν, 430
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
ολον το λευκόν τινι ζώω ουχ υπάρχει, το δὲ καλόν
tινι υπάρχει, καὶ το λευκόν ου παντι καλών. ὥστ' 
ἀν ληφθῇ το μεν Α μηδειν το Γ το δὲ Β παντι, 
ἀμφοτέραι μὲν αἱ προτάσεις ἐπὶ τι ψευδεῖς, τὸ δὲ 
συμπέρασμα ἀλθῆς.

Ωσαύτως δὲ καὶ τῆς μὲν ὅλης ψευδοῦς τῆς δ' 
ὁλης ἀλθοῦς λαμβανομένης. ἐγχωρεὶ γὰρ καὶ τὸ 
ω Α καὶ τὸ Β παντὶ τῷ Γ ἐπεσθαι, τὸ μέντοι Α τινὶ 
tῷ Β μη υπάρχειν, οἶνον ζώων καὶ λευκὸν παντὶ 
κύκνῳ ἐπεται, τὸ μέντοι ζώων οὐ παντὶ υπάρχει 
λευκῶν. τεθέντως οὐν ὤρων τοῦτων ἐὰν ληφθῇ 
τὸ μὲν Β ὁλῳ τῷ Γ υπάρχειν τὸ δὲ Α ὁλῳ μη 
ὑπάρχειν, η' μὲν ΒΓ ολη ἐσται ἀλθῆς η' δὲ ΑΓ ὅλη 
ψευδῆς, 
καὶ τὸ συμπέρασμα ἀλθῆς. ὀμοίως δὲ καὶ εἰ τὸ 
μὲν ΒΓ ψεύδος τὸ δὲ ΑΓ ἀληθῆς· οἱ γὰρ αὐτοὶ ὅτι 

πρὸς τὴν ἀπόδειξιν [μελαν, κύκνοις, ἀφυχον].

αλλὰ 
καὶ εἰ ἀμφοτέραι λαμβάνοντο καταφατικά· οὔδεν 
γὰρ κωλὺει τὸ μὲν Β παντὶ τῷ Γ ἐπεσθαι, τὸ δὲ Α 
ὁλῳ μη υπάρχειν, καὶ τὸ Α τινὶ τῷ Β υπάρχειν, 
οἶνον κύκνῳ [μελαν] παντὶ ζώων, μέλαν δ' οὖν 
κύκνῳ, καὶ τὸ μελαν υπάρχει τινι ζώῳ· ὥστ' ἄν 
ληφθῇ τὸ Α καὶ τὸ Β παντὶ τῷ Γ υπάρχειν, η' μὲν 
ΒΓ ολη ἀλθῆς η' δὲ ΑΓ ὅλη ψευδῆς, καὶ τὸ 
συμπέρασμα ἀλθῆς. ὀμοίως δὲ καὶ τῆς ΑΓ 
ληθείσης ἀλθοῦς· διὰ γὰρ τῶν αὐτῶν ὤρων η' 
ἀπόδειξις.

10 Πάλιν τῆς μὲν ὅλης ἀλθοῦς ὑσθης τῆς δ' ἐπὶ τι 
ψευδοῦς. ἐγχωρεὶ γὰρ τὸ μὲν Β παντὶ τῷ Γ υπάρ-
χειν τὸ δὲ Α τινὶ, καὶ τὸ Α τινὶ τῷ Β, οἶνον δίπουν

1 secl. Waitz. 2 om. Bnfu, Boethius, Waitz.

* These are not the same terms as before; they are derived
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 'black' 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' οὖ παντὶ, καὶ τὸ καλὸν τινὶ διόποδι ὑπάρχει. ἦν οὖν ληφθῇ καὶ τὸ Α καὶ τὸ Β ὅλω τῷ Γ ὑπάρχειν, ἥ μὲν ΒΓ ὅλη ἀληθῆς ἡ δὲ ΑΓ ἐπὶ τὶ φευδῆς, τὸ δὲ συμπέρασμα ἀληθῆς. ὁμοίως δὲ καὶ τῆς μὲν ΑΓ ἀληθοὺς τῆς δὲ ΒΓ φευδοὺς ἐπὶ τὶ λαμβανομένης· μετατεθέντων γὰρ τῶν αὐτῶν ὀρῶν ἔσται ἡ ἀπόδειξις. καὶ τῆς μὲν στερητικῆς τῆς δὲ καταφατικῆς οὐσῆς. ἐπεὶ γὰρ ἐγχωρεῖ τὸ μὲν Β ὅλω τῷ Γ ὑπάρχειν τὸ δὲ Α τινὶ, καὶ ὅταν ὀυτῶς ἔχωσιν οὐ παντὶ τῷ Β τὸ Α, ἦν ληφθῇ τὸ μὲν Β ὅλω τῷ Γ ὑπάρχειν τὸ δὲ Α μηδενι, ἡ μὲν στερητικῆ ἐπὶ τὶ φευδῆς, ἡ δ' ἐτέρα ὅλη ἀληθῆς καὶ τὸ συμπέρασμα. πάλιν ἐπεὶ δε- δεικταί ὅτι τοῦ μὲν Α μηδενὶ ὑπάρχοντος τῷ Γ τοῦ δὲ Β τινὶ ἐγχωρεῖ τὸ Α τινὶ τῷ Β μὴ ὑπάρχειν, φανερὸν ὅτι καὶ τῆς μὲν ΑΓ ὅλης ἀληθοὺς οὐσῆς τῆς δὲ ΒΓ ἐπὶ τὶ φευδοὺς ἐγχωρεῖ τὸ συμπέρασμα εἶναι ἀληθῆς. ἦν γὰρ ληφθῇ τὸ μὲν Α μηδενὶ τῷ Γ τὸ δὲ Β παντὶ, ἡ μὲν ΑΓ ὅλη ἀληθῆς ἡ δὲ ΒΓ ἐπὶ τὶ φευδῆς.

Φανερὸν δὴ καὶ ἐπὶ τῶν ἐν μέρει συλλογισμῶν ὅτι πάντως ἔσται διὰ φευδῶν ἀληθῆς. οἱ γὰρ αὐτοὶ ὀροὶ ληπτέοι καὶ ὅταν καθόλου ὦσιν αἱ προτάσεις, οἱ μὲν ἐν τοῖς κατηγορικοῖς κατηγορικοῖ, οἱ δ' ἐν τοῖς στερητικοῖς στερητικοί. οὔδὲν γὰρ διαφέρει μηδενὶ ὑπάρχοντος παντὶ λαβεῖν ὑπάρχειν, καὶ τινὶ ὑπάρχοντος καθόλου λαβεῖν ὑπάρχειν πρὸς τὴν τῶν ὀρῶν ἑκθεσιν. ὁμοίως δὲ καὶ ἐπὶ τῶν στερητικῶν.

Φανερὸν οὖν ὅτι ἂν μὲν ἡ τὸ συμπέρασμα ψευδὸς, ἀνάγκη εὖ ὅν ὁ λόγος ψευδῆ εἶναι ἡ πάντα ἡ ἕνια,
PRIOR ANALYTICS, II. iv

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 a 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.
57 a ὅταν δ' ἀληθές, οὐκ ἀνάγκη ἀληθές εἶναι οὔτε τι οὔτε πάντα, ἀλλ' ἐστι μηδενὸς ὄντος ἀληθοῦς τῶν
40 ἐν τῷ συλλογισμῷ τὸ συμπέρασμα ὁμοίως εἶναι
57 b ἀληθές, οὐ μὴν εἰς ἀνάγκης. αἰτιον δ' ὅτι ὅταν δύο ἕχῃ οὐτώ πρὸς ἄλληλα ὅπερ ὀντέρο ὄντος εἰς ἀνάγκης εἶναι ἀτέρον, τοῦτο μὴ ὄντος μὲν οὐδὲ ὀντέρον ἐσται, ὄντος δ' οὐκ ἀνάγκη εἶναι ἀτέρον. τοῦ δ' αὐτοῦ ὄντος καὶ μὴ ὄντος ἀδύνατον εἰς ἀνάγκης εἶναι το αὐτό. λέγω δ' οἶον τοῦ Α ὄντος λευκοῦ τὸ Β εἶναι μέγα εἰς ἀνάγκης, καὶ μὴ ὄντος λευκοῦ τοῦ Α τὸ Β εἶναι μέγα εἰς ἀνάγκης. όταν γὰρ τουτί ὄντος λευκοῦ τοῦ Α τοῦ ἀνάγκη μέγα εἶναι τὸ Β, μεγάλου δὲ τοῦ Β ὄντος τὸ Γ μὴ λευκόν, ἀνάγκη, εἰ τὸ Α λευκόν, τὸ Γ μὴ εἶναι λευκόν. καὶ όταν δύο ὄντων ὀντέρο ὄντος ἀνάγκη ὀντέρον εἶναι, τοῦτο μὴ ὄντος ἀνάγκη τὸ Α μὴ εἶναι. τοῦ δὴ Β μὴ ὄντος μεγάλου τὸ Α οὐχ οἶον τε λευκόν εἶναι. τοῦ δὲ Α μὴ ὄντος λευκοῦ, εἰ ἀνάγκη τὸ Β μέγα εἶναι, συμβαίνει εἰς ἀνάγκης τοῦ Β μεγάλου μὴ ὄντος αὐτὸ τὸ Β εἶναι μέγα. τοῦτο δ' ἀδύνατον: εἰ γὰρ τὸ Β μὴ ἐστὶ μέγα, τὸ Α οὐκ ἐστι λευκόν εἰς ἀνάγκης. εἰ οὖν μὴ ὄντως τοῦτο λευκοῦ τὸ Β ἐστι μέγα, συμβαίνει, εἰ τὸ Β μὴ ἐστὶ μέγα, εἶναι μέγα, ως διὰ τριῶν.

V. Τὸ δὲ κύκλῳ καὶ εἰς ἀλλήλων δείκνυσθαι ἐστὶ τὸ διὰ τοῦ συμπεράσματος καὶ τοῦ ἀνάπαλιν τῇ
20 κατηγορίᾳ τὴν ἑτέραν λαβόντα πρότασιν συμπερά-

νασθαι τὴν λοιπὴν, ἡν ἐλάμβανεν ἐν θατέρῳ συλ-

λογισμῷ: οἶον εἰ ἔδει δείξαι ὅτι τὸ Α τῷ Γ παντὶ

* 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

\* i.e. the premiss with subject and predicate interchanged.
ΑΡΙΣΤΟΤΕΛΕΣ

υπάρχει, εδείξε δε διὰ τοῦ Β, πάλιν ει δευκνού ὅτι
τὸ Α τῷ Β υπάρχει, λαβὼν τὸ μὲν Α τῷ Γ υπάρχει
τὸ δὲ Γ τῷ Β, καὶ τὸ Α τῷ Β ( plaisτον δ’ ἀνά-
23 παλιν ἐλαβε τὸ Β τῷ Γ υπάρχει). ἦ ei ὅτι τὸ Β τῷ Γ
δει δείξει υπάρχον, εἰ λάβοι τὸ Α κατὰ τοῦ Γ, ὅ
ἡν συμπέρασμα, τὸ δὲ Β κατὰ τοῦ Α υπάρχει
( plaisτον δ’ ἐλήφθη ἀνάπαλιν τὸ Α κατὰ τοῦ Β).
ἀλλως δ’ οὖκ ἔστιν εἰ ἀλλήλων δεῖξαι. εἰτε γὰρ
30 ἄλλο μέσον λήφηται, οὐ κύκλῳ (οὐδὲν γὰρ λαμβά-
νεται τῶν αὐτῶν), εἰτε τούτων τι, ἀνάγκη θάτερον
μόνον· εἰ γὰρ ἀμφω, ταῦτο ἔσται συμπέρασμα, δεὶ
δ’ ἔτερον.

Ἐν μὲν οὖν τοῖς μὴ ἀντιστρέφουσιν εἰς ἀναπο-
deίκτον τῆς ἑτέρας προτάσεως γίγνεται ὁ συλ-
λογισμὸς· οὐ γὰρ ἔστιν ἀποδείξαι διὰ τούτων τῶν
25 ὀρῶν ὅτι τῷ μέσῳ τὸ τρίτον υπάρχει ἢ τῷ πρῶτῳ
τὸ μέσον. ἐν δὲ τοῖς ἀντιστρέφουσιν ἐστὶ πάντα
deικτόνται δι’ ἀλλήλων, οἷον εἰ τὸ Α καὶ τὸ Β καὶ
τὸ Γ ἀντιστρέφουσιν ἀλλήλως. δεδείχθω γὰρ τὸ
ΔΓ διὰ μέσου τοῦ Β, καὶ πάλιν τὸ ΔΒ διὰ τοῦ
συμπεράσματος καὶ διὰ τῆς ΔΓ προτάσεως ἀντι-
40 στραφείσης, ὑσαύτως δε καὶ τὸ ΔΓ διὰ τοῦ
58 συμπεράσματος καὶ τῆς ΔΒ προτάσεως ἀντεστραμ-
μένης. δει δὲ τὴν τε ΓΒ καὶ τὴν ΒΑ προτάσιν
ἀποδείξαι· ταῦτας γὰρ ἀναποδείκτοις κεχρήμεθα
μόναις. εἀν οὖν λῆφθῃ τὸ Β παντὶ τῷ Γ υπάρχει
καὶ τὸ Γ παντὶ τῷ Α, συλλογισμὸς ἔσται τοῦ Β
5 πρὸς τὸ Α. πάλιν εἀν λῆφθῃ τὸ μὲν Γ παντὶ τῷ Α
tὸ δὲ Α παντὶ τῷ Β, παντὶ τῷ Β τὸ Γ ἀνάγκη

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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.
58 a

υπάρχειν. εν ἀμφοτέροις δὴ τούτοις τοῖς συλλογισμοῖς ἡ ΓΑ πρῶταις εἰληπται ἀναπόδεικτος (αἱ γὰρ ἐτερα δεδειγμέναι ἐστὶν, ἂν ταύτῃ ἀποδείξεως, ἀπασαι ἐσονται δεδειγμέναι δι’ ἄλληλων. ἦν οὖν ληφθῇ τὸ Γ παντὶ τῷ Β καὶ τὸ Β παντὶ τῷ Α υπάρχειν, ἀμφότεροι τέ αἱ πρῶταις ἀποδειγμέναι λαμβάνονται, καὶ τὸ Γ τῷ Α ἀνάγκη υπάρχειν.

Φανερὸν οὖν ὁτι ἐν μόνοις τοῖς ἀντιστρέφουσι κύκλῳ καὶ δι’ ἄλληλων ἐνδεχεται γίγνεσθαι τὰς ἀποδείξεις, εν δὲ τοῖς ἄλλοις ὡς πρότερον εἰπομεν. συμβαίνει δὲ καὶ εν τούτοις αὐτῷ τῷ δεικνυμένῳ χρήσθαι πρὸς τὴν ἀποδείξειν τὸ μὲν γὰρ Γ κατα τοῦ Β καὶ τὸ Β κατα τοῦ Α δείκνυται ληφθέντος τοῦ Γ κατα τοῦ Α λέγεσθαι, τὸ δὲ Γ κατα τοῦ Α διὰ τούτων δείκνυται τῶν πρωτάσεων, ὡστε τῷ συμ-περάσματι χρώμεθα πρὸς τὴν ἀποδείξειν.

Ἐπὶ δὲ τῶν στερητικῶν συλλογισμῶν ὡς δείκνυται εἰς ἄλληλον. 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, δ’ πάλαι ἔλαβεν, ἐσται τὸ μὲν Α μηδενὶ τῷ Γ τὸ δὲ Γ παντὶ τῷ Β· οὐτω γὰρ ἀνάπαλιν ἡ πρῶταις. εἰ δ’ ὅτι τὸ Β τῷ Γ δεὶ συμπεράνασθαι, οὐκεῦθ’ ὁμοίως ἀντιστρεπτέον τὸ ΑΒ (ἡ γὰρ αὐτὴ πρῶταις τὸ Β μηδενὶ τῷ Α καὶ τὸ Α μηδενὶ τῷ Β υπάρχειν), ἄλλα ληπτέον, ὥ τὸ 50 Α μηδενὶ υπάρχει, τὸ Β παντὶ υπάρχει. ἐστω τὸ Α μηδενὶ τῶν Γ υπάρχον, ὅπερ ἦν τὸ συμπέρασμα.

1 υπάρχον scripsi: 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.\(^a\) Let A apply to no C, which was the conclusion before,

\(^a\) Aristotle is guilty of *petitio principii*; this is exactly what is required to be proved.
ο δὲ τὸ Α μηδενί, τὸ Β εἰλίφθω παντὶ υπάρχειν·
ἀνάγκη οὐν τὸ Β παντὶ τῷ Γ υπάρχειν.

'Ωστε τριῶν ὄντων ἑκαστὸν συμπέρασμα γέγονε, ναὶ τὸ κύκλῳ ἀποδεικνύει τοῦτ' ἐστι, τὸ συμπέ-
ρασμα λαμβάνοντα καὶ ἀνάπαυν τὴν ἑτέραν πρό-
tασιν τὴν λοιπὴν συνλογίζεσθαι.

'Επὶ δὲ τῶν ἐν μέρει συλλογισμῶν τὴν μὲν
καθόλου πρῶταιν οὐκ ἐστιν ἀποδείξει διὰ τῶν
ἑτέρων, τὴν δὲ κατὰ μέρος ἐστιν. ὃτι μὲν οὖν οὐκ
ἐστιν ἀποδείξει τὴν καθόλου φανέρον· τὸ μὲν γὰρ
καθόλου δείκνυται διὰ τῶν καθόλου, τὸ δὲ συμ-
πέρασμα οὐκ ἐστι καθόλου, δεὶ δ' ἐκ τοῦ
συμπεράσματος δείξας καὶ τῆς ἑτέρας προτάσεως
(ἐτί ὅλως οὐδὲ γίγνεται συλλογισμὸς ἀντιστρα-
φείσης τῆς προτάσεως· ἐν μέρει γὰρ ἀμφότερα
γίγνονται αἱ προτάσεις). τὴν δ' ἐπὶ μέρους ἐστιν.
δεδείχθη γὰρ τὸ Α κατὰ τινὸς τοῦ Γ διὰ τοῦ Β.
εὰν οὖν ληφθῇ τὸ Β παντὶ τῶ Α καὶ τὸ συμπέρασμα
μὲν, τὸ Β τινὶ τῶ Γ ὑπάρχει· γίγνεται γὰρ τὸ
πρῶτον σχήμα, καὶ τὸ Α μέσον.

Εἰ δὲ στερητικὸς ὁ συλλογισμὸς, τὴν μὲν καθόλου
πρῶταιν οὐκ ἐστι δείξαι, δι' δ' καὶ πρῶτον
ἐλέχθη· τὴν δ' ἐν μέρει ἐστιν· ἐὰν' ὀμοιῶς ἀντι-
στραφῆ τὸ ΑΒ ὠπερ κατὶ τῶν καθόλου, οἷον ὥς
τὸ Α τινὶ μὴ ὑπάρχει, τὸ Β τινὶ ὑπάρχειν· ἀλλὰς
γὰρ οὐ γίγνεται συλλογισμός διὰ τὸ ἀποφατικὴν
ἐκεῖν τὴν ἐν μέρει πρῶταιν.

VI. 'Εν δὲ τῷ δευτέρῳ σχήματι τὸ μὲν κατα-

1 δ' ὁ Buhle: διο. 1 ἐστὶ om. Cu, Bekker.
2 εὰν μὲν A' Cemfn, εὰν μὲν οὖν B'.
3 καθόλου ΑΒ: καθόλου, οὐκ ἐστι, διὰ προσλήψεως δ' ἐστι
uolgo.
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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

\[ ^a \text{ Cf. 58 a 29 note.} \]
ἈΡΙΣΤΟΤΛΕ

58 b

φατικῶν οὐκ ἐστὶ δεῖξαι διὰ τούτου τού τρόπου, τὸ 15 δὲ στερητικὸν ἐστὶν. τὸ μὲν οὖν κατηγορικὸν οὐ
deικνυται διὰ τοῦ μὴ ἁμφοτέρας εἶναι τὰς προτάσεις
καταφατικάς· τὸ γὰρ συμπέρασμα στερητικὸν ἐστὶ,
tὸ δὲ κατηγορικὸν εἰς ἁμφοτέρων ἐδείκνυτο κατα-
φατικῶν· τὸ δὲ στερητικὸν οὐδὲ δεικνυται. ὑπαρ-
χέτω τὸ Α παντὶ τῷ Β τῷ δὲ Γ μηδενὶ συμπέρασμα
20 τὸ Β οὐδενὶ τῷ Γ. εὰν οὖν ληφθῇ τὸ Β παντὶ τῷ Α
ὑπάρχουν [τῷ δὲ Γ μηδενὶ], ἀνάγκη τὸ Α μηδενὶ τῷ
Γ ὑπάρχειν γίγνεται γὰρ τὸ δεύτερον σχῆμα (μέσον
τὸ Β). εἰ δὲ τὸ ΑΒ στερητικὸν ἐλήφθη θάτερον
de κατηγορικὸν, τὸ πρῶτον ἐσται σχῆμα. τὸ μὲν
gὰρ Γ παντὶ τῷ Α τὸ δὲ Β οὐδενὶ τῷ Γ, ὡστ' 25
οὐδενὶ τῷ Α τὸ Β· οὐδ' ἄρα τὸ Α τῷ Β. διὰ μὲν
οὖν τοῦ συμπεράσματος καὶ τῆς μᾶς προτάσεως
οὐ γίγνεται συλλογισμὸς, προσληφθείσης δ' ἐτέρας
ἐσται.

Ἡν δὲ μὴ καθόλου ὁ συλλογισμὸς ἢ, ἢ μὲν ἐν
όλω πρότασις οὐ δεικνυται (διὰ τὴν αὐτὴν αἰτίαν
30 ἡπέρ εἰπομεν καὶ πρότερον), ἡ δ' ἐν μέρει δει-
κνυται ὅταν ἢ τὸ καθόλου κατηγορικὸν. ὑπαρχέτω
γὰρ τὸ Α παντὶ τῷ Β τῷ δὲ Γ μὴ παντὶ· συμπέ-
ρασμα ΒΓ. εὰν οὖν ληφθῇ τὸ Β παντὶ τῷ Α τῷ
δὲ Γ οὐ παντὶ, τὸ Α τοι τῷ Γ οὐχ ὑπάρξει (μέσον
Β). εἰ δ' ἐστὶν ἡ καθόλου στερητική, οὐ δειχθή-
σεται ἡ ΑΓ πρότασις ἀντιστραφέντος τοῦ ΑΒ. 35
συμβαίνει γὰρ ἡ ἁμφοτέρας ἡ τὴν ἐτέραν πρότασιν
γίγνεσθαι ἀποφατικήν, ὡστ' οὐκ ἐσται συλλογι-
σμὸς. ἀλλ' ὑμοίως δειχθήσεται ὡς καὶ ἐπὶ τῶν

1 τῷ δὲ Γ μηδενὶ Cm et in marg. B\textsuperscript{3}: om. cet.
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 affirmative, 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 above\(^b\); but the particular premiss can be proved when the universal statement is affirmative. 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, ἐὰν λθφθη ὄ τὸ Β τυί μὴ ὑπάρχει τὸ Α τυί ὑπάρχειν.

VII. Ἐπὶ δὲ τοῦ τρίτου σχῆματος ὅταν μὲν 
ἀμφότεραι αἱ προτάσεις καθόλου λθφθῶσιν, οὐκ εἰνδεχεται δεῖξαι δι’ ἀλλήλων· τὸ μὲν γὰρ καθόλου 
δείκνυται διὰ τῶν καθόλου, τὸ δ’ ἐν τούτῳ συμ-
πέρασμα ἄει κατὰ μέρος, ὡστε φανερὸν ὅτι ὅλως 
οὐκ εἰνδεχεται δεῖξαι διὰ τούτου τοῦ σχῆματος τὴν 
καθόλου πρότασιν. ἐὰν δ’ ἡ μὲν ἡ καθόλου ἡ δ’ 
ἐν μέρει, ποτὲ μὲν ἔσται ποτὲ δ’ οὐκ ἔσται. ὅταν 
μὲν οὖν ἀμφότεροι κατηγορικαὶ λθφθῶσι καὶ τὸ 
καθόλου γεννηται πρὸς τῷ ἐλάττων ἀκρω, ἔσται, 
ὅταν δὲ πρὸς βατέρῳ, οὐκ ἔσται. ὑπαρχέτω γὰρ 
tὸ Α παντὶ τῷ Γ τὸ δὲ Β τυί· συμπέρασμα τὸ 
ΑΒ. ἐὰν οὖν λθφθῇ τὸ Γ παντὶ τῷ Α ὑπάρχειν, 
tὸ μὲν Γ δεδεικται τυί τῷ Β ὑπάρχουν, τὸ δὲ Β τυί 
tῷ Γ οὐ δεδεικται. καίτοι ἁνάγκη, εἰ τὸ Γ τυί τῷ 
Β, καὶ τὸ Β τυί τῷ Γ ὑπάρχειν. ἀλλ’ οὐ ταύτων 
ἔστι τόδε τώδε καὶ τόδε τώδε ὑπάρχειν, ἀλλὰ 
προσληπτέον εἰ τόδε τυί τώδε, καὶ βατέρον τυί 
tώδε· τούτου δὲ λθφθέντος οὐκέτι γίγνεται ἐκ τοῦ 
συμπεράσματος καὶ τῆς ἔτερας προτάσεως ὁ 
συλλογισμός. εἰ δὲ τὸ μὲν Β παντὶ τῷ Γ τὸ δὲ Α 
tυί τῷ Γ, ἔσται δεῖξαι τὸ ΑΓ ὅταν λθφθῇ τὸ μὲν 
Γ παντὶ τῷ Β ὑπάρχειν τὸ δὲ Α τυί. εἰ γὰρ τὸ Γ 
pαντὶ τῷ Β τὸ δὲ Α τυί τῷ Β, ἁνάγκη τὸ Α τυί 
tῷ Γ ὑπάρχειν (μέσον τὸ Β).

Καὶ ὅταν ἡ μὲν κατηγορικὴ ἡ δ’ στερητικὴ, 
καθόλου δ’ ἡ κατηγορική, δειχθῆσεται ἡ ἔτερα. 
ὑπαρχέτω γὰρ τὸ Β παντὶ τῷ Γ, τὸ δὲ Α τυί 
μὴ ὑπαρχέτω· συμπέρασμα ὅτι τὸ Α τυί τῷ Β οὐχ
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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.
ΑΡΙΣΤΟΤΕΛΗΣ

υπάρχει. Εάν οὖν προσληφθῇ τὸ Γ παντὶ τῷ Β υπάρχειν, ἀνάγκη τὸ Α τινὶ τῷ Γ μὴ υπάρχειν (μέσον τό Β). ὅταν δ᾿ ἡ στερητική καθόλου γένηται οὐ
deiktetai η ἔτερα, εἰ μὴ ὁποτὲ ἐπὶ τῶν πρότερον, εάν ληφθῇ ὦ τούτῳ τινὶ μὴ υπάρχει θάτερον τινὶ υπάρχειν, οἷον εἰ τὸ μὲν Α μηδενὶ τῷ Γ τὸ δὲ Β
tivn; συμπέρασμα ὅτι τὸ Α τινὶ τῷ Β οὐχ υπάρχει. εάν οὖν ληφθῇ ὦ τὸ Α τινὶ μὴ υπάρχει τὸ Γ
tivn υπάρχειν, ἀνάγκη τὸ Γ τινὶ τῶν Β υπάρχειν.

όλλως δ᾿ οὐκ ἐστιν αὐτιστρέφοντα τὴν καθόλου πρότασιν δείξαι τὴν ἔτεραν οὐδαμῶς γάρ ἐσται
συλλογισμός.

Φανερὸν οὖν ὅτι ἐν μὲν τῷ πρῶτῳ σχήματι ή δι᾿
ἀλλήλων δείξις διὰ τε τοῦ τρίτου καὶ διὰ τοῦ πρῶ-
tου γίγνεται σχήματος. κατηγορικῶν μὲν γάρ

ὅπτως τοῦ συμπεράσματος διὰ τοῦ πρῶτου, στερητι-
κοῦ δὲ διὰ τοῦ ἕσχάτου· λαμβάνεται γάρ ὃ τούτῳ
μηδενὶ θάτερον παντὶ υπάρχειν. ἐν δὲ τῷ μέσῳ
καθόλου μὲν ὅπτος τοῦ συλλογισμοῦ δι᾿ αὐτοῦ τε
καὶ διὰ τοῦ πρῶτου σχήματος, ὅταν δ᾿ ἐν μέρει, δι᾿
αὐτοῦ τε καὶ τοῦ ἕσχάτου. ἐν δὲ τῷ τρίτῳ δι᾿
αὐτοῦ πάντες. φανερὸν δὲ καὶ ὅτι ἐν τῷ τρίτῳ καὶ
tῶ μέσω οἱ μὴ δι᾿ αὐτῶν γίγνομενοι συλλογισμοὶ
η οὐκ εἰσὶ κατὰ τὴν κύκλω δεῖξιν ἡ ἀτελεῖς.

VIII. Τὸ δ᾿ αὐτιστρέφειν ἐστὶ τὸ μετατιθέντα
to συμπέρασμα ποιεῖν τὸν συλλογισμὸν ὅτι ἡ τὸ
ἄκρον τῷ μέσῳ οὐχ υπάρξει ἡ τούτῳ τῷ τελευταίῳ.
ἀνάγκη γάρ τοῦ συμπεράσματος αὐτιστραφέντος
cαὶ τῆς ἔτερας μενοῦσης προτάσεως ἀναφείσθαι

* 58 a 29, b 9, 37.
* Cf. 58 b 22-27, 59 a 6-14.
* i.e. changing its quality, with or without change of
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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.’
τὴν λοιπὴν· εἰ γὰρ ἔσται, καὶ τὸ συμπέρασμα ἔσται. διαφέρει δὲ τὸ ἀντικειμένως ἢ ἑναντίως ἀντιστρέφειν τὸ συμπέρασμα· οὐ γὰρ ὁ αὐτὸς γίγνεται συλλογισμὸς ἐκατέρως ἀντιστραφέντος· δὴ λοιπὸν δὲ τοῦτ' ἐσται διὰ τῶν ἐπομένων (λέγω δ' ἀντικείσθαι μὲν τὸ παντὶ τῷ οὐ παντὶ καὶ τὸ τινὶ τῷ οὐδενί, ἑναντίως δὲ τὸ παντὶ τῷ οὐδενὶ καὶ τὸ τινὶ τῷ οὐ τινὶ ὑπάρχειν).

Ἅστω γὰρ δεδειγμένον τὸ Α κατά τοῦ Γ διὰ μέσου τοῦ Β. εἰ δὴ τὸ Α ληφθεὶ· μὴδενί τῷ Γ ὑπάρχειν τῷ δὲ Β παντὶ, οὐδενὶ τῷ Γ ὑπάρξει τῷ Β. καὶ εἰ τὸ μὲν Α μηδενὶ τῷ Γ τὸ δὲ Β παντὶ τῷ Γ, τὸ Α οὐ παντὶ τῷ Β καὶ οὐχὶ ὅλως οὐδενὶ· οὐ γὰρ ἐδείκνυτο τὸ καθόλου διὰ τὸν ἐσχάτον σχῆματος· ὅλως δὲ τὴν πρὸς τῷ μείζονι ἄκρῳ πρότασιν οὐκ ἐστὶν ἀνασκενασαί καθόλου διὰ τῆς ἀντιστροφῆς· ἢ ἂν γὰρ ἀναρεῖται διὰ τοῦ τρίτου σχῆματος· ἀνάγκη γὰρ πρὸς τὸ ἐσχάτον ἄκρων ἀμφοτέρας λαβεῖν τὰς προτάσεις.

Καὶ εἰ στερητικὸς ὁ συλλογισμὸς ωσαύτως. δεδείγθω γὰρ τὸ Α μηδενὶ τῷ Γ ὑπάρχειν διὰ τοῦ Β. οὐκοῦν εἰν τῇ ληφθῇ τὸ Α τῷ Γ παντὶ ὑπάρχειν τῷ δὲ Β μηδενὶ, οὐδενὶ τῶν Γ τὸ Β ὑπάρξει· καὶ εἰ τὸ Α καὶ τὸ Β παντὶ τῷ Γ, τὸ Α τινὶ τῷ Β· ἀλλ' οὐδενὶ ὑπάρχειν.

'Εάν δ' ἀντικειμένως ἀντιστραφῇ τὸ συμπέρασμα, καὶ οἳ συλλογισμοὶ ἀντικειμένοι καὶ οὐ καθόλου ἐσοιται· γίγνεται γὰρ ἡ ἑτέρα πρότασις ἐν μέρει, ὅστε καὶ τὸ συμπέρασμα ἐσται κατὰ μέρος. ἔστω γὰρ κατηγορικὸς ὁ συλλογισμός, καὶ ἀντιστρεφε-
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
σεβο ἄνως. οὐκοῦν εἰ τὸ Α οὐ παντὶ τῷ Γ τῷ
de Β παντὶ, τὸ Β οὐ παντὶ τῷ Γ καὶ εἰ τὸ μὲν Α
μὴ παντὶ τῷ Γ τὸ δὲ Β παντὶ, τὸ Α οὐ παντὶ τῷ Β.
όμοιως δὲ καὶ εἰ στερητικὸς ὁ συλλογισμός. εἰ
γὰρ τὸ Α τινὶ τῷ Γ ὑπάρχει τῷ δὲ Β μηδενὶ, τὸ
Β τινὶ τῷ Γ οὐχ ὑπάρξει, οὐχ ἀπλῶς οὐδενὶ καὶ
εἰ τὸ μὲν Α τῷ Γ τινὶ τὸ δὲ Β παντὶ, ὥσπερ ἐν
ἀρχῇ ἐλήφθη, τὸ Α τινὶ τῷ Β ὑπάρξει.
Ἐπὶ δὲ τῶν ἐν μέρει συλλογισμῶν ὅταν μὲν
ἀντικειμένως ἀντιστρέφηται τὸ συμπέρασμα ἀναι-
ροῦται ἀμφότεραι αἱ προτάσεις, ὅταν δὲ ἑναντίως
οὐδετέρα. οὐ γὰρ ἐτι συμβαίνει, καθάπερ ἐν τοῖς
καθόλου, ἀναιρεῖν ἐλλείποντος τοῦ συμπεράσματος
κατὰ τὴν ἀντιστροφὴν, ἀλλ' οὐδ' ὅλως ἀναιρεῖν.
δεδείχθω γὰρ τὸ Α κατὰ τινὸς τοῦ Γ. οὐκοῦν ἄν
ληφθῇ τὸ Α μηδενὶ τῷ Γ ὑπάρχειν τὸ δὲ Β τινὶ,
tὸ Α τῷ Β τινὶ οὐχ ὑπάρξει· καὶ εἰ τὸ Α μηδενὶ
tῷ Γ τῷ δὲ Β παντὶ, οὐδενὶ τῷ Γ τῷ Β· ὥστ' ἀναιροῦται ἀμφότεραι. εὰν δ' ἑναντίως ἀντι-
στραφῇ, οὐδετέρα. εἰ γὰρ τὸ Α τινὶ τῷ Γ μὴ ὑπάρχει
tῷ δὲ Β παντὶ, τὸ Β τινὶ τῷ Γ οὐχ ὑπάρξει. ἀλλ' ὅπως
ἀναιρεῖται τὸ εἰς ἄρχης, ἐνδεχεται γὰρ τινὶ
ὑπάρχει καὶ τινὶ μὴ ὑπάρχειν. τῆς δὲ καθόλου
tῆς ΑΒ ὅλως οὐδὲ γίγνεται συλλογισμός· εἰ γὰρ
τὸ μὲν Α τινὶ τῶν Γ μὴ ὑπάρχει τὸ δὲ Β τινὶ
ὑπάρχει, οὐδετέρα καθόλου τῶν προτάσεων. ομοίως
de καὶ εἰ στερητικὸς ὁ συλλογισμός· εἰ μὲν γὰρ
ληφθεῖν τὸ Α παντὶ τῷ Γ ὑπάρχειν, ἀναιροῦται
ἀμφότεραι, εἰ δὲ τινὶ, οὐδετέρα· ἀπόδειξις δ' ἦ
αυτή.
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 σχήματι τὴν μὲν πρὸς τῷ μείζον ἀκραῖο πρότασιν οὐκ ἔστι αὐτεῖς ἐναντίως, ὁποτέρωσον τῆς ἀντιστροφῆς γιγαντεύσης· ἀεὶ γὰρ ἔσται τὸ συμπέρασμα εἰν τῷ τρίτῳ σχήματι, καθόλου δ' οὐκ ἦν εἰ τούτῳ συλλογισμῷ. τὴν δ' ἐτέραν ὁμοίως ἀναφηγομεν τῇ ἀντιστροφῇ (λέγω δὲ τὸ ὁμοίως, εἰ μὲν ἐναντίως ἀντιστρέφεται, ἐναντίως, εἰ δ' ἀντικειμένως, ἀντικειμένως).

Ὑπαρχέτω γὰρ τὸ Α παντὶ τῷ Β τῷ δὲ Γ μηδενισμένου συμπέρασμα ΒΓ. ἐὰν οὖν ληφθῇ τὸ Β παντὶ τῷ Γ ὑπάρχειν καὶ τὸ ΑΒ μένη, τὸ Α παντὶ τῷ Γ ὑπάρξει γίγνεται γὰρ τὸ πρῶτον σχῆμα. εἰ δὲ τὸ Β παντὶ τῷ Γ τὸ δὲ Α μηδενισμένο σχῆμα τὸ ἐσχατον. εὰν δ' ἀντικειμένως ἀντιστροφῆς τὸ ΒΓ, ἡ μὲν ΑΒ ὁμοίως δειχθῆσεται, ἡ δὲ ΑΓ ἀντικειμένως. εἰ γὰρ τὸ Β τινὶ τῷ Γ τὸ τὸ δὲ Α μηδενισμένο γίγνεται ὁ συλλογισμός. ὁμοίως δὲ δειχθῆσεται καὶ εἰ ἀνάπαυ τῇ ἐχοντι αἱ προτάσεις.

Εἰ δ' ἔστιν ἐπὶ μέρους ὁ συλλογισμός, ἐναντίως μὲν ἀντιστρεφομένου τοῦ συμπερασματος οὐδετέρα τῶν προτάσεων ἀναφείται, καθάπερ οὐδ' εἰν τῷ πρῶτῳ σχῆμα, ἀντικειμένως δ' ἀμφότερα. κείσθω γὰρ τὸ Α τῷ μὲν Β μηδενισμένη ὑπάρξειν τῳ δὲ Γ τινὶ συμπέρασμα ΒΓ. εὰν οὖν τεθῇ τὸ Β τινὶ τῷ Γ ὑπάρξει καὶ τὸ ΑΒ μένη, συμπέρασμα ἐσται ὅτι τὸ Α τινὶ τῷ Γ οὐχ ὑπάρξει. ἀλλ' οὐκ ἀνήρρηται τὸ εἴς ἀρχής εἶναίται γὰρ τινὶ ὑπάρξειν καί

* 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

\[59\ b\ 39—60\ a\ 1,\ 60\ a\ 5-14.\]
μὴ ὑπάρχειν. πάλιν εἰ τὸ B τινὶ τῷ Γ καὶ τὸ A τινὶ τῷ Γ, οὐκ ἐσταὶ συλλογισμὸς οὐδέτερον γὰρ καθόλου τῶν εἰλημμένων· ὅτι οὐκ ἀναιρεῖται τὸ AB. εἰ δὲ ἀντικειμένῳ ἀντιστρέφηται, ἀναιροῦνται ἀμφότεραι. εἰ γὰρ τὸ B παντὶ τῷ Γ τὸ δὲ A μηδὲν τῷ B, οὐδὲν τῷ Γ τὸ A· ήν δὲ τινὶ. πάλιν εἰ τὸ B παντὶ τῷ Γ τὸ δὲ A τινὶ τῷ Γ, τινὶ τῷ B τὸ A. η ἄντιθετι ἀπόδειξις καὶ εἰ τὸ καθόλου κατηγορικὸν. 

Εἰπὶ δὲ τοῦ τρίτου σχήματος ὅταν μὲν ἐναντίως ἀντιστρέφηται τὸ συμπέρασμα, οὐδετέρα τῶν προτάσεων ἀναιρεῖται κατ’ οὐδένα τῶν συλλογισμῶν, ὅταν δ’ ἀντικειμένῳ, ἀμφότεραι καὶ εἰ ἀπασιν. δεδείχθη γὰρ τὸ A τινὶ τῷ B ὑπάρχον, μέσον δ’ εἰλήφθω τὸ Γ, ἐστώσαν δὲ καθόλου αἱ προτάσεις. οὐκοὶν εὖν ληφθῇ τὸ A τινὶ τῷ B μὴ ὑπάρχειν τὸ δὲ B παντὶ τῷ Γ, οὐ γίγνεται συλλογισμὸς τοῦ A καὶ τοῦ Γ. οὐδ’ εἰ τὸ A τῷ μὲν B τινὶ μὴ ὑπάρχει τῷ δὲ Γ παντὶ, οὐκ ἔσται τοῦ B καὶ τοῦ Γ συλλογισμὸς. ὁμοίως δὲ δεικτῆσεται καὶ εἰ μὴ καθόλου αἱ προτάσεις. η γὰρ ἀμφότερας ἀνάγκη κατὰ μέρος εἶναι διὰ τῆς ἀντιστροφῆς, η τὸ καθόλου πρὸς τῷ ἐλάττου ἀκρῷ γίγνεσθαι· οὕτω δ’ οὐκ ἦν συλλογισμὸς οὐτ’ εὖ τῷ πρώτῳ σχήματι οὐτ’ εὖ τῷ μέσῳ.

Ἐὰν δ’ ἀντικειμένως ἀντιστρέφηται, αἱ προτάσεις ἀναιροῦνται ἀμφότεραι. εἰ γὰρ τὸ A μηδὲν τῷ B τὸ δὲ B παντὶ τῷ Γ, τὸ A οὐδὲν τῷ Γ. πάλιν εἰ τὸ A τῷ μὲν B μηδὲν τῷ δὲ Γ παντὶ, τὸ B οὐδὲν τῷ Γ. καὶ εἰ η ἑτέρα μὴ καθόλου ὑσαύτως. εἰ ἀντιστρέφηται Philoponus (?), Jenkinson: ἀντιστρεφόμενοι 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

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* 26 a 17-21, 27 a 4-12.
γάρ το Α μηδενι τώ Β το δέ Β τινι τώ Γ, το Α
25 τινι τώ Γ ουχ υπάρξει· ει δέ το Α τώ μεν Β μηδενι
tώ δέ Γ παντι, ουδενι τώ Γ το Β.
'Ομοιως δε και ει στερητικος ο συλλογισμος.
dedeιχθω γαρ το Α τινι τώ Β μη υπαρχον, έστω
dε κατηγορικον μεν το ΒΓ αποφατικον δε το ΑΓ·
ουτω γαρ εγινετο ο συλλογισμος· οταν μεν ουν
tο εναντιον ληφθη τω συμπερασματι, ουκ έσται
30 συλλογισμος· ει γαρ το Α τινι τώ Β το δέ Β παντι
tώ Γ, ουκ ήν συλλογισμος του Α και του Γ. ουδ' ει
tο Α τινι τώ Β τω δέ Γ μηδενι, ουκ ήν του Β
και του Γ συλλογισμος· ώστε ουκ άναιρουνται αι
προτασεις· οταν δε το αντικειμενον, άναιρουνται.
35 ει γαρ το Α παντι τώ Β και το Β τω Γ, το Α
παντι τω Γ· άλλ' ουδενι υπηρχεν. παλιν ει το Α
παντι τω Β τω δέ Γ μηδενι, το Β ουδενι τω Γ·
αλλα παντι υπηρχεν. ομοιως δε δεικνυται και ει
μη καθολου εισιν αι προτασεις· γιγνεται γαρ το
ΑΓ καθολου τε και στερητικον, θατερον δ' επι
μερους και κατηγορικον. ει μεν ουν το Α παντι
40 τω Β το δε Β τινι τω Γ, το Α τινι τω Γ συμβαειν·
αλλ' ουδενι υπηρχεν. παλιν ει το Α παντι τω Β
tω δε Γ μηδενι, το Β ουδενι τω Γ· έκειτο δε τωι.
ει δε το Α τινι τω Β και το Β τινι τω Γ,
ου γιγνεται συλλογισμος· ουδ' ει το Α τινι τω Β
tω δε Γ μηδενι, ουδ' ουτως. ώστ' εκεινως μεν
αναιρουνται, ουτω δ' ουκ άναιρουνται αι προτασεις.
5 Φαινετον ουν δια των ειρημενων πως αντιστρεφο-
μενου του συμπερασματος εν έκαστω σχηματι
γιγνεται συλλογισμος, και ποτ' εναντιος τη 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

\[b\] 26 a 30-36.

\[c\] 27 b 6-8.


ARISTOTLE

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tάσει καὶ πότ' ἀντικειμένως, καὶ ὅτι ἐν μὲν τῷ πρῶτῳ σχῆματι διὰ τοῦ μέσου καὶ τοῦ ἐσχάτου γίγνονται οἱ συλλογισμοὶ, καὶ ἡ μὲν πρὸς τῷ ἐλάττων ἀκρῷ ἀεὶ διὰ τοῦ μέσου ἀναφέρεται, ἡ δὲ πρὸς τῷ μείζονι διὰ τοῦ ἐσχάτου· ἐν δὲ τῷ δευτέρῳ διὰ τοῦ πρῶτου καὶ τοῦ ἐσχάτου, καὶ ἡ μὲν πρὸς τῷ ἐλάττων ἀκρῷ ἀεὶ διὰ τοῦ πρῶτου σχῆματος, ἡ δὲ πρὸς τῷ μείζονι διὰ τοῦ ἐσχάτου· ἐν δὲ τῷ τρίτῳ διὰ τοῦ πρῶτου καὶ διὰ τοῦ μέσου, καὶ ἡ μὲν πρὸς τῷ μείζονι διὰ τοῦ πρῶτου ἀεὶ, ἡ δὲ πρὸς τῷ ἐλάττων διὰ τοῦ μέσου.

ΧΙ. Τί μὲν οὖν ἐστὶ τὸ ἀντιστρέφειν καὶ πῶς ἐν ἐκάστῳ σχῆματι καὶ τις γίγνεται συλλογισμὸς, φαινόμεν.

'Ο δὲ διὰ τοῦ ἀδύνατον συλλογισμὸς δει-
κυται μὲν ὅταν ἡ ἄντιφασις τεθῇ τοῦ συμπερά-
σματος καὶ προσληφθῇ ἄλλη πρότασις, γίγνεται δ' ἐν ἄπασι τοῖς σχήμασιν· όμοιον γὰρ ἐστι τῇ ἀντι-
στροφῇ, πλὴν διαφέρει τοσοῦτον ὅτι ἀντιστρέφεται 
μὲν γεγενημένον συλλογισμὸν καὶ εἰλημμένων 
ἀμφοὶ τῶν προτάσεων, ἀπάγεται δ' εἰς ἀδύνατον 
καὶ προοιμολογηθέντος τοῦ ἀντικειμένου πρότερον, 
ἀλλὰ φαινομὲν ὅτους ὅτι ἀληθεῖς· οἱ δ' ὀροὶ όμοίως 
ἐξουσιῶν ἐν ἀμφοὶ καὶ ἡ αὐτὴ λήψις ἀμφοτέρων. 
οἱν εἰ τὸ Α τῷ Β παντὶ ὑπάρχει, μέσον δὲ τὸ Γ, 
ἐὰν ὑποτεθῇ τὸ Α ἡ μη ἐντὶ ἡ μηδενὶ τῷ Β 
ὑπάρχειν, τῷ δὲ Π παντὶ, ὅπερ ἦν ἀληθὲς, ἀνάγκῃ 
τὸ Γ τῷ Β ἡ μηδενὶ ἡ μη παντὶ ὑπάρχειν. τοῦτο 
δ' ἀδύνατον, ὥστε ψεῦδος τὸ ὑποτεθεν ἀληθὲς ἀρὰ 
τὸ ἀντικειμένον. όμοιος δὲ καὶ ἐπὶ τῶν ἀλλων

* i.e. the conclusion whose contradictory is assumed as a premise for the process of reduction.

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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 a 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 b is true. Similarly too in the other figures; Proof per impossibile compared with conversion.

b i.e. the contradictory.

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αχημάτων· ὅσα γὰρ ἀντιστροφήν δέχεται, καὶ τὸν
diὰ τοῦ ἀδυνάτου συλλογισμὸν.

Τὰ μὲν οὖν ἀλλὰ προβλήματα πάντα δείκνυται
καὶ διὰ τοῦ ἀδυνάτου ἐν πάσι τοῖς σχήμασι, τὸ δὲ
καθόλου κατηγορικὸν ἐν μὲν τῷ μέσῳ καὶ τῷ τρίτῳ
deίκνυται, ἐν δὲ τῷ πρῶτῳ οὐ δείκνυται. ὑποκεί-
σθω γὰρ τὸ Ἄ τῷ Ὁ μὴ παντὶ ἢ μηδὲν ὑπάρχειν, καὶ
προσειλήφθων ἀλλὰ πρότασις ὑποτερωθεῖται, εἶτε
τῷ Ἄ παντὶ ὑπάρχειν τὸ Γ εἰτε τὸ Ὁ παντὶ τῷ δ'
οὖτω γὰρ ἢ ἢ τὸ πρῶτον σχῆμα. εἰ μὲν οὖν
ὑπόκειται μὴ παντὶ ὑπάρχειν τὸ Ἄ τῷ Ὁ, οὐ γί-
gνεται συλλογισμὸς ὑποτερωθεῖν τῆς προτάσεως
λαμβανομένης, εἰ δὲ μηδενὶ, ὅταν μὲν ἢ ὉΔ προσ-
lηφθῇ· συλλογισμὸς μὲν ἔσται τοῦ ψεῦδους, οὐ
δείκνυται δὲ τὸ προκείμενον. εἰ γὰρ τὸ Ἄ μηδενὶ
tῷ Ὁ τὸ δὲ Ὁ παντὶ τῷ δ', τὸ Ὁ οὐδενὶ τῷ δ'.
τοῦτο δ' ἐστὶν ἀδύνατον· ψεῦδος ἄρα τὸ μηδενὶ τῷ
Ὡ τὸ Ἄ ὑπάρχειν. ἀλλ' οὐκ εἰ τὸ μηδενὶ ψεῦδος τὸ
παντὶ ἀληθεῖς. εάν δ' ἡ ΓΔ προσληφθῇ, οὐ γίγνεται
συλλογισμὸς, οὐδ' ὅταν ὑποτεθῇ μὴ παντὶ τῷ Ὁ
tὸ Ἄ ὑπάρχειν· ὡστε φανερὸν ὅτι τὸ παντὶ ὑπάρχει
ὀυ δείκνυται εἰ τῷ πρῶτῳ σχῆματι διὰ τοῦ
ἀδύνατου.

Τὸ δὲ γε τινὶ καὶ τὸ μηδενὶ καὶ μὴ παντὶ δεὶ-
kνυται. ὑποκείσθω γὰρ τὸ Ἄ μηδενὶ τῷ Ὁ ὑπάρ-
χειν, τὸ δὲ Ὁ εἰλήφθων παντὶ ἢ τινὶ τῷ Γ. οὐκοῦν
ἀνάγκη τὸ Ἄ μηδενὶ ἢ μὴ παντὶ τῷ Γ ὑπάρχειν.
tοῦτο δ' ἀδύνατον (ἐστὶ γὰρ ἀληθεῖς καὶ φανερὸν
ὅτι παντὶ ὑπάρχει τῷ Γ τῷ Ἄ), ὡστ' εἰ τοῦτο
ψεῦδος, ἀνάγκη τὸ Ἄ τινὶ τῷ Ὁ ὑπάρχειν. εάν δὲ
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 ἐστὶν... τὸ Α uncinis interpunxit Waitz.
πρὸς τῷ Ἀ ληθὴ ἡ ἐτέρα πρότασις, οὐκ ἐσται συλλογισμὸς: οὖδ’ ὅταν τὸ ἐναντίον τῷ συμπερά-
σματι ὑποτεθῇ, οἶον τὸ τῷ μὴ ὑπάρχειν. φανερὸν οὖν ὅτι τὸ ἀντικείμενον ὑποθετέον.

Πάλιν ὑποκείσθω τὸ Ἀ τινι τῷ Ὁ ὑπάρχειν, εἴληφθω δὲ τὸ Γ παντὶ τῷ Ἀ. ἀνάγκη οὖν τὸ Γ,
τινι τῷ Ὁ ὑπάρχειν. τούτῳ δ’ ἐστι άδύνατον, ὡστε ψεύδος τὸ ὑποτεθέν· εἰ δ’ οὕτως, ἀληθὲς τὸ μηδεν
ὑπάρχειν. ὁμoiως δὲ καὶ εἰ στερητικον ἐλθοθῇ τὸ ΓΑ. εἰ δ’ ἡ πρὸς τῷ Ὁ εἴληπται πρότασις, οὐκ
ἐσται συλλογισμὸς. ἐὰν δὲ τὸ ἐναντίον ὑποτεθῇ,

συλλογισμὸς μὲν ἐσται καὶ τὸ άδύνατον, οὐ δει-
kνυται δὲ τὸ προτεθέν. ὑποκείσθω γὰρ παντὶ τῷ
Β τῷ Ἀ ὑπάρχειν, καὶ τὸ Γ τῷ Ἀ εἴληφθω παντὶ,
οὐκοὖν ἀνάγκη τὸ Γ παντὶ τῷ Ὁ ὑπάρχειν. τούτῳ
δ’ άδύνατον, ὡστε ψεύδος τὸ παντὶ τῷ Ὁ τῷ Ἀ
ὑπάρχειν. ἀλλ’ οὕτως γε ἀναγκαίον, εἰ μὴ παντὶ,

μὴ δεν ὑπάρχειν. ὁμοίως δὲ καὶ εἰ πρὸς τῷ Ὁ
ληθῇ ἡ ἐτέρα πρότασις: συλλογισμὸς μὲν γὰρ
ἐσται καὶ τὸ άδύνατον, οὐκ ἀναρχεῖται δ’ ἡ ὑπόθεσις,
ὡστε τὸ ἀντικείμενον ὑποθετέον.

Πρὸς δὲ τὸ μὴ παντὶ δειξαι ὑπάρχον τῷ Ὁ τῷ Ἀ
ὑποθετέον παντὶ ὑπάρχειν· εἰ γὰρ τὸ Ἀ παντὶ τῷ Ὁ
καὶ τὸ Γ παντὶ τῷ Ἀ, τὸ Γ παντὶ τῷ Ὁ· ὡστ’ εἰ
toτο άδύνατον, ψεύδος τὸ ὑποτεθέν. ὁμοίως δὲ
καὶ εἰ πρὸς τῷ Ὁ εἴληφθη ἡ ἐτέρα πρότασις. καὶ
eἰ στερητικὸν ἦν τὸ ΓΑ ωςαύτως: καὶ γὰρ οὕτω
γίγνεται συλλογισμὸν. ἐὰν δὲ πρὸς τῷ Ὁ ἢ τὸ
στερητικὸν, οὐδὲν δεικνυται. ἐὰν δὲ μὴ παντὶ

1 τῷ BC, Waitz: τῷ Ἀ.
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...
40 ἄλλα τινι ὑπάρχειν ὑποτεθῇ, οὐ δείκνυται ὅτι οὐ παντὶ ἄλλ' ὅτι οὐδενί. εἰ γὰρ τὸ Α τινι τῷ Β τὸ 41 δὲ Γ παντὶ τῷ Α, τινι τῷ Β τὸ Γ υπάρξει. εἰ οὖν τούτ' ἀδύνατον, ψεῦδος τὸ τινὶ ὑπάρχειν τῷ Β τὸ Α, ὥστ' ἀληθὲς τὸ μηδενί. τούτου δὲ δειχθέντος προσαναρεῖται τὸ ἀληθὲς· τὸ γὰρ Α τῷ Β τινὶ μὲν ὑπήρχε, τινὶ δ' οὖχ ὑπήρχεν. ἔτι οὐ παρὰ 5 τὴν υπόθεσιν συμβαίνει τὸ ἀδύνατον· ψεῦδος γὰρ ἀν εἰ, εἰπὲρ εὖ ἀληθῶν μὴ ἐστὶ ψεῦδος συλλογίσασθαι· νῦν δ' ἐστὶν ἀληθὲς, ὑπάρχει γὰρ τὸ Α τινὶ τῷ Β· ὥστ' οὖχ ὑποθετέον τινὶ ὑπάρχειν, ἄλλα 10 παντὶ. ὅμοιος δὲ καὶ εἰ τινὶ μὴ υπάρχον τῷ Β τὸ Α δεικνύομεν· εἰ γὰρ ταὐτὸ τὸ τινὶ μὴ ὑπάρχειν καὶ μὴ παντὶ υπάρχειν, ἢ αὐτὴ ἀμφοῦν ἀπόδειξις.

Φανερὸν οὖν ὅτι οὐ τὸ ἐναντίον ἄλλα τὸ ἀντικείμενον ὑποθετέον εὖ ἀπασὶ τοῖς συλλογισμοῖς· οὔτω γὰρ τὸ ἀναγκαῖον ἔσται καὶ τὸ ἀξίωμα ἐνδοξον. εἰ γὰρ κατὰ παντὸς ἡ φάσις ἡ ἀπόφασις, δειχθέντος ὅτι οὐχ ἡ ἀπόφασις, ἀνάγκη τὴν κατάφασιν ἀληθεύεσθαι· πάλιν εἰ μὴ τίθησιν ἀληθεύεσθαι τὴν κατάφασιν, ἐνδοξον τὸ ἀξιῶσαι τὴν ἀπόφασιν. τὸ δ' ἐναντίον οὐδετέρως ἀρμόττει ἄξιον· οὐτε γὰρ ἀναγκαῖον, εἰ τὸ μηδενὶ ψεῦδος, τὸ παντὶ ἀληθὲς, οὔτ' ἐνδοξον ὡς εἰ θάτερον ψεῦδος, ὅτι θάτερον ἀληθὲς.

15 XII. Φανερὸν οὖν ὅτι εἰν τῷ πρῶτῳ σχῆματι τὰ 20

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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,
μὲν ἄλλα προβλήματα πάντα δείκνυται διὰ τοῦ ἄδυνατον, τὸ δὲ καθόλου καταφατικὸν οὐ δείκνυται.
ἐν δὲ τῷ μέσῳ καὶ τῷ ἐσχάτῳ καὶ τούτῳ δείκνυται.
κείσθω γὰρ τὸ Α μὴ παντὶ τῷ Β ὑπάρχειν, εἰλήφθω δὲ τῷ Γ παντὶ ὑπάρχειν τὸ Α. οὐκοῦν εἰ τῷ μὲν
25 Β μὴ παντὶ τῷ δὲ Γ παντὶ, οὐ παντὶ τῷ Β τὸ Γ. τούτῳ δ’ ἄδυνατον: ἔστω γὰρ φανερὸν ὅτι παντὶ
tῷ Β ὑπάρχει τὸ Γ, ὥστε ψεύδος τὸ ὑποκείμενον.
ἀληθὲς ἀρα τὸ παντὶ ὑπάρχειν. εάν δὲ τὸ ἐναντίον
ὑποτεθῇ, συλλογισμὸς μὲν ἦσται καὶ τὸ ἄδυνατον,
30 οὐ μὴν δείκνυται τὸ προτεθέν. εἰ γὰρ τὸ Α μηδενὶ
tῳ Β τῷ δὲ Γ παντὶ, οὐδενὶ τῷ Β τὸ Γ· τούτῳ δ’
ἄδυνατον, ὥστε ψεύδος τὸ μηδενὶ ὑπάρχειν. ἀλλ’
οὐκ εἰ τούτῳ ψεύδος τὸ παντὶ ἀληθὲς.

"Οτε δὲ τινὶ τῷ Β ὑπάρχει τὸ Α, ὑποκείσθω τὸ Α
μηδενὶ τῷ Β ὑπάρχειν, τῷ δὲ Γ παντὶ ὑπαρχέτω.
35 ἀνάγκη οὖν τὸ Γ μηδενὶ τῷ Β· ὅτε εἰ τούτῳ
ἀδύνατον, ἀνάγκη τὸ Α τινὶ τῷ Β ὑπάρχειν. εάν δ’
ὑποτεθῇ τινὶ μὴ ὑπάρχειν, ταῦτ’ ἦσται ἀπερ ἐπὶ
tοῦ πρώτου σχῆματος.

Πάλιν ὑποκείσθω τὸ Α τινὶ τῷ Β ὑπάρχειν, τῷ
δὲ Γ μηδενὶ ὑπαρχέτω. ἀνάγκη οὖν τὸ Γ τινὶ
τῷ Β μὴ ὑπάρχειν. ἀλλὰ παντὶ ὑπάρχειν, ὥστε
40 ψεύδος τὸ ὑποτεθέν· οὐδενὶ ἄρα τῷ Β τὸ Α ὑπάρχει.
"Οτε δ’ οὖ παντὶ τὸ Α τῷ Β, ὑποκείσθω παντὶ
ὑπάρχειν, τῷ δὲ Γ μηδενὶ. ἀνάγκη οὖν τὸ Γ
μηδενὶ τῷ Β ὑπάρχειν. τούτῳ δ’ ἄδυνατον, ὥστε
ἀληθὲς τὸ μὴ παντὶ ὑπάρχειν. φανερὸν οὖν ὅτι

1 ταῦτ’ ἦσται Jenkinson: ταῦτ’ ἦσται.

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whereas all other propositions are demonstrable \textit{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 \textit{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.\footnote{61 b 39 ff.}

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
πάντες οἱ συλλογισμοὶ γίγνονται διὰ τοῦ μέσου σχήματος.

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XIII. Ὅμοιως δὲ καὶ διὰ τοῦ ἐσχάτου. κείσθω γὰρ τὸ Α τινὶ τῷ Β μη ὑπάρχειν τὸ δὲ Γ παντὶ· τὸ ἀρα Α τινὶ τῷ Γ οὐχ ὑπάρχει. εἰ οὖν τούτ’ ἀδύνατον, ψεύδος τὸ τινὶ μὴ ὑπάρχειν, ὥστ’ ἀληθὲς τὸ παντὶ. εάν δ’ ὑποτεθῇ μηδεὶς ὑπάρχει, συλλογ.

γισμὸς μὲν ἔσται καὶ τὸ ἀδύνατον, οὐ δείκνυται δὲ τὸ προτεθέν: εάν γὰρ τὸ ἐναντίον ὑποτεθῇ, ταῦτ’ ἔσται ἅπερ ἐπὶ τῶν πρῶτον. ἀλλὰ πρὸς τὸ τινὶ ὑπάρχειν αὕτῃ ληπτεὰ ἡ ὑπόθεσις. εἰ γὰρ τὸ Α μηδεὶς τῷ Β τὸ δὲ Γ τινὶ τῷ Β, τὸ Α οὐ παντὶ τῷ Γ. εἰ οὖν τούτῳ ψεύδος, ἀληθὲς τὸ Α τινὶ τῷ Β ὑπάρχειν.

Οτὲ δ’ οὐδεὶς τῷ Β ὑπάρχει τὸ Α, ύποκεΐσθω τινὶ ὑπάρχειν, εὐλόγω δὲ καὶ τὸ Γ παντὶ τῷ Β ὑπάρχον. οὐκοῦν αὐτάκτη τῷ Γ τινὶ τὸ Α ὑπάρχειν. οὕτως οὐδεὶς ὑπήρξειν, ὡστε ψεύδος τινὶ τῷ Β ὑπάρχειν τῷ Α. εὰν δ’ ὑποτεθῇ παντὶ τῷ Β ὑπάρχειν τῷ Α, οὐ δείκνυται τὸ προτεθέν, ἀλλὰ πρὸς τὸ μή παντὶ ὑπάρχειν αὕτῃ ληπτεὰ ἡ ὑπόθεσις. εἰ γὰρ τὸ Α παντὶ τῷ Β καὶ τὸ Γ τινὶ τῷ Β, τὸ Α ὑπάρχει τῳ τῷ Γ· τούτῳ οὐκ ἦν, ὡστε ψεύδος τὸ παντὶ ὑπάρχειν· εἰ δ’ οὕτως, ἀληθὲς τὸ μὴ παντὶ· εὰν δ’ ὑποτεθῇ τῳ τῷ ὑπάρχειν, ταῦτ’ ἔσται ἃ καὶ ἐπὶ τῶν προερημένων.

Φανερῶν οὖν ὅτι ἐν ἀπασὶ τοῖς διὰ τοῦ ἀδύνατου συλλογισμοῖς τὸ ἀντικείμενον ὑποθέτεσθαι. δήλον δὲ

1 ταῦτ’ ἔσται n. Jenkinson: ταῦτ’ 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.\(^b\)

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.\(^c\)

Thus it is evident that in all syllogisms per impossibile it is the contradictory assumption that must

\(^a\) 62 a 28 ff.

\(^b\) 61 b 39. The case is not treated separately under the second figure.
καὶ ὅτι ἐν τῷ μέσῳ σχήματι δείκνυται πώς τὸ καταφατικὸν καὶ ἐν τῷ ἐσχάτῳ τὸ καθόλου.

XIV. Διαφέρει ἡ εἰς τὸ ἀδύνατον ἀπόδειξις τῆς δεικτικῆς τῷ τιθέναι ὁ βουλεύει ἀναρέειν ἀπάγουσα εἰς ὁμολογούμενον ψεῦδος· ἡ δὲ δεικτικὴ ἀρχεῖ τοῖς ὁμολογούμενοις θέσεων. λαμβάνοις μὲν οὖν ἀμφότεραι δύο προτάσεις ὁμολογούμενας· ἀλλ' ἡ μὲν ἐξ ὧν ὁ συλλογισμὸς, ἡ δὲ μίαν μὲν τούτων μιὰν δὲ τῆς ἀντίφασιν τοῦ συμπεράσματος. καὶ ἕνα μὲν οὖν ἀνάγκη γνώριμον εἶναι τὸ συμπέρασμα, οὐδὲ προὑπολαμβάνειν ὡς ἐστιν ἡ οὐ· ἕνα δὲ ἀνάγκη ὡς οὖν ἐστιν. διαφέρει δ' οὐδὲν φάσιν ἡ ἀπόφασιν εἶναι τὸ συμπέρασμα, ἀλλ' ὁμοίως ἔχει περὶ ἀμφοῖν.

Απαν δὲ τὸ δεικτικῶς περαινόμενον καὶ διὰ τοῦ ἀδύνατον δεικθῆται, καὶ τὸ διὰ τοῦ ἀδύνατον δεικτικῶς, διὰ τῶν αὐτῶν ὀρῶν. όταν μὲν γὰρ ὁ συλλογισμὸς ἐν τῷ πρῶτῳ σχήματι γένηται, τὸ ἀληθὲς ἐσται ἐν τῷ μέσῳ ἡ τῷ ἐσχάτῳ, τὸ μὲν στερητικὸν ἐν τῷ μέσῳ τὸ δὲ κατηγορικὸν ἐν τῷ ἐσχάτῳ· όταν δ' ἐν τῷ μέσῳ ἡ ὁ συλλογισμὸς, τὸ ἀληθὲς ἐν τῷ πρῶτῳ ἐπὶ πάντων τῶν προβλημάτων· όταν δ' ἐν τῷ ἐσχάτῳ ὁ συλλογισμὸς, τὸ ἀληθὲς ἐν τῷ πρῶτῳ καὶ τῷ μέσῳ, τὰ μὲν καταφατικὰ ἐν τῷ πρῶτῳ τὰ δὲ στερητικὰ ἐν τῷ μέσῳ.

Ἔστω γὰρ δεδειγμένον τὸ Ἀ μηδένι ἡ μὴ παντὶ τῷ Β διὰ τοῦ πρῶτον σχῆματος· οὐκοιν ἡ μὲν ὑπόθεσιν ἦν τωι τῷ Β ὑπάρχειν τὸ Ἅ, τὸ δὲ Γ

1 θέσεων ἀληθῶν Ἕν.
2 ὀρῶν. ἈΒCDATA: ὀρῶν, οὐκ ἐν τοῖς αὐτοῖς δὲ σχήματι uolgo.
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 that A applies to none, or does not apply to all, of B. Then the hypothesis was that A applies to some B,
ελαμβάνετο τῷ μὲν Α παντὶ υπάρχειν τῷ δὲ Β οὐδενὶ. οὔτω γὰρ ἐγίγνετο ὁ συνλογισμός καὶ τὸ ἀδύνατον. τούτῳ δὲ τὸ μέσον σχῆμα, εἰ τὸ Γ τῷ μὲν Α παντὶ τῷ δὲ Β μηδενὶ υπάρχει καὶ φανερὸν ἐκ τούτων ὑπάρχει τῷ Β υπάρχει τὸ Α.

15 ὃμοιώς δὲ καὶ εἰ μὴ παντὶ δεδεικταί υπάρχον. η μὲν γὰρ υπόθεσις ἐστὶ παντὶ υπάρχειν, τὸ δὲ Γ ελαμβάνετο τῷ μὲν Α παντὶ τῷ δὲ Β οὐ παντὶ καὶ εἰ στερητικὸν λαμβάνοιτο τὸ ΓΑ ωσαύτως· καὶ γὰρ οὖτω γίγνεται τὸ μέσον σχῆμα.

Πάλιν δεδείχθω τινὶ υπάρχον τῷ Β τῷ Α. ἡ μὲν οὖν υπόθεσις μηδενὶ υπάρχειν, τὸ δὲ Β ελαμβάνετο παντὶ τῷ Γ υπάρχειν καὶ τὸ Α η παντὶ η τινὶ τῷ Γ· οὔτω γὰρ ἐσται τὸ ἀδύνατον. τούτῳ δὲ τὸ ἔσχατον σχῆμα, εἰ τὸ Α καὶ τὸ Β παντὶ τῷ Γ· καὶ φανερὸν ἐκ τούτων ὑπάρχει τὸ Α τινὶ τῷ Β υπάρχειν. ὡμοίως δὲ καὶ εἰ τινὶ τῷ Γ ληθειν ὑπάρχον τῷ Β η τῷ Α.

20 Πάλιν εὖ τῷ μέσῳ σχῆματι δεδείχθω τὸ Α παντὶ τῷ Β υπάρχον. οὖκοιν ἡ μὲν υπόθεσις ἡν μὴ παντὶ τῷ Β τῷ Α υπάρχειν, εἰληπται δὲ τὸ Α παντὶ τῷ Γ καὶ τὸ Γ παντὶ τῷ Β· οὔτω γὰρ ἐσται τὸ ἀδύνατον. τούτῳ δὲ τῷ πρῶτον σχῆμα, τὸ Α παντὶ τῷ Γ καὶ τὸ Γ παντὶ τῷ Β. ὡμοίως δὲ καὶ εἰ τινὶ δεδεικταί υπάρχον· ἡ μὲν γὰρ υπόθεσις ἡν μηδενὶ τῷ Β τῷ Α υπάρχειν, εἰληπται δὲ τὸ Α παντὶ τῷ Γ καὶ τὸ Γ τινὶ τῷ Β· εἰ δὲ στερητικὸς ὁ συνλογισμός, ἡ μὲν υπόθεσις τὸ Α τινὶ τῷ Β υπάρχειν, εἰληπται δὲ τὸ Α μηδενὶ τῷ Γ καὶ τὸ Γ παντὶ τῷ Β, ὅστε γίγνεται τῷ πρῶτον σχῆμα. καὶ εἰ μή καθόλου ὁ συνλογισμός, ἀλλὰ τὸ Α τινὶ τῷ Β δεδεικται μὴ 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
γὰρ παντὶ τῷ Β τὸ Α ύπάρχειν, εἰληπταὶ δὲ τὸ Α μηδενὶ τῷ Γ καὶ τὸ Γ των τῷ Β· οὔτω γὰρ τὸ πρώτον σχῆμα.

Πάλιν ἐν τῷ τρίτῳ σχῆματι δεδείχθω τὸ Α παντὶ τῷ Β ύπάρχειν. οὐκοῦν ἡ μὲν ὑπόθεσις ἢς μὴν παντὶ τῷ Β τὸ Α ύπάρχειν, εἰληπταὶ δὲ τὸ Γ παντὶ τῷ Β καὶ τὸ Α παντὶ τῷ Γ· οὔτω γὰρ ἐστὶ τὸ ἀδύνατον. τούτῳ δὲ τὸ πρώτον σχῆμα. ὡσαύτως δὲ καὶ εἰ ἐπὶ τύνος ἡ ἀπόδειξις· ἡ μὲν γὰρ ὑπόθεσις μηδενὶ τῷ Β τὸ Α ύπάρχειν, εἰληπταὶ δὲ τὸ Γ των τῷ Β καὶ τὸ Α παντὶ τῷ Γ. εἰ δὲ στερητικὸς ὁ συλλογισμὸς, ὑπόθεσις μὲν τὸ Α των τῷ Β ύπάρχειν, εἰληπταὶ δὲ τὸ Γ τῳ μὲν Α μηδενὶ τῷ Β παντὶ· τούτῳ δὲ τὸ μέσου σχῆμα. ὡμοίως δὲ καὶ εἰ μὴ καθόλου ἡ ἀπόδειξις. ὑπόθεσις μὲν γὰρ ἐστὶ παντὶ τῷ Β τὸ Α ύπάρχειν, εἰληπταὶ δὲ τὸ Γ τῳ μὲν Α μηδενὶ τῷ Β των· τούτῳ δὲ τὸ μέσου σχῆμα.

Φανερὸν οὖν ὅτι διὰ τῶν αὐτῶν ὅρων καὶ δεικτικῶς ἐστὶ δεικνύναι τῶν προβλημάτων ἐκαστὸν [καὶ διὰ τοῦ ἀδύνατου]. ὡμοίως δὲ ἐστὶ καὶ δεικτικῶς οὕτων τῶν συλλογισμῶν εἰς ἀδύνατον ἀπάγειν ἐν τοῖς εἰλημένοις ὅροις, ὅταν ἡ ἀντικειμένη πρότασις τῷ συμπεράσματι ληφθῇ. γίγνονται γὰρ οἱ αὐτοὶ συλλογισμοὶ τοῖς διὰ τῆς ἀντιστροφῆς, ὡστε εὐθὺς ἔχομεν καὶ τὰ σχήματα δι᾽ ὑπακοὴν ἐστιν. δὴν οὖν ὅτι πάν πρόβλημα δεικνυται κατ᾽ ἀμφότεροις τοὺς τρόπους, διὰ τό τοῦ ἀδύνατου καὶ δεικτικῶς, καὶ οὐκ ἐνδέχεται χωρίζεσθαι τὸν ἑτερον.

XV. Ἕν ποιώ δὲ σχήματι ἐστίν εἰς ἀντικειμένων

1 καὶ . . . ἀδύνατον 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
γραμμάτων, καὶ ἐν ποιῷ οὐκ ἔστιν, ὥδ' ἐσται φανερὸν. λέγω δ' ἀντικειμένας εἶναι
προτάσεων συνολογίσασθαι καὶ ἐν ποιῷ οὐκ ἔστιν, ὥδ' ἐσται φανερὸν. λέγω δ' ἀντικειμένας εἶναι
25 προτάσεως κατὰ μὲν τῆν λέξιν τέτταρας, ὅλον τὸ
παντὶ τῷ οὐδὲνι, καὶ τὸ παντὶ τῷ ὑπὲρ τοῦ παντὶ, καὶ τὸ
tivν τῷ οὐδὲνι, καὶ τὸ tivν τῷ οὐ τινὶ, κατ' ἀλήθειαν
dὲ τρεῖς, τὸ γὰρ τινὶ τῷ οὐ τινὶ κατὰ τὴν λέξιν
ἀντικηται μόνον. τούτων δ' ἐναντίας μὲν τὰς
καθολοῦ, τὸ παντὶ τῷ μηδενὶ ὑπάρχειν (ὅλον τὸ
30 πᾶσαν ἐπιστήμην εἶναι σπουδαίαν τῷ μηδεμίῳ
eíναι σπουδαίαν), τὰς δ' ἄλλας ἀντικειμένας.
'Εν μὲν οὖν τῷ πρῶτῳ σχήματι οὐκ ἔστιν εἰς
ἀντικειμένων προτάσεων συνολογισμὸς οὔτε κατα-
φατικός οὔτε ἀποφασικός, καταφατικὸς μὲν ὁτι
ἀμφοτέρας δὲ καταφατικάς εἶναι τὰς προτάσεις.
35 αἱ δ' ἀντικειμέναι φάσις καὶ ἀπόφασις, στερητικὸς
de ὅτι αἱ μὲν ἀντικειμέναι τὸ αὐτὸ τοῦ αὐτοῦ
κατηγοροῦσι καὶ ἀπαρνοῦνται, τὸ δ' ἐν τῷ πρῶτῳ
μέσῳ οὐ λέγεται κατ' ἀμφοῖν, ἀλλ' ἐκείνου μὲν
ἀλλο ἀπαρνεῖται, αὐτὸ δὲ ἄλλου κατηγορεῖται
αὐτὰ τί οὐκ ἀντικειται.
40 Ἐν δὲ τῷ μέσῳ σχήματι καὶ ἐκ τῶν ἀντικει-
μένων καὶ ἐκ τῶν ἑναντίων ἐνδεχεσθαι συνολογισμὸν. ἔστω γὰρ ἀγαθὸν μὲν ἐφ' οὖν Α,
ἐπιστήμη δὲ ἐφ' οὖ Β καὶ Γ. εἰ δὴ πᾶσαν ἐπι-
στήμην σπουδαίαν ἔλαβε καὶ μηδεμίαν, τὸ Α τῷ
παντὶ ὑπάρχει καὶ τῷ Γ οὐδὲνι, ὥστε τὸ Β τῷ
ὁμοίως δὲ καὶ εἰ πᾶσαν λαβὼν σπουδαίαν τὴν
ἰατρικὴν μὴ σπουδαίαν ἔλαβε· τῷ μὲν γὰρ Β παντὶ
tὸ Α τῷ δὲ Γ οὐδὲνι, ὥστε ἡ τις ἐπιστήμην οὐκ
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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
Άριστοτέλης

έσται ἐπιστήμη. καὶ εἰ τῷ μὲν Γ παντὶ τῷ Α τῷ
dὲ Β μηδὲν, ἔστι δὲ τῷ μὲν Β ἐπιστήμη τῷ δὲ Γ
ιατρικῇ τῷ δὲ Α ύπόληψις οὐδεμίαν γὰρ ἐπιστήμην
ὑπόληψιν λαβῶν εἰλήφη τινὰ ἐπιστήμην εἶναι
ὑπόληψιν. διαφέρει δὲ τοῦ πάλαι τῷ ἐπὶ τῶν ὅρων
ἀντιστρέφοντας πρότερον μὲν γὰρ πρὸς τῷ Β, νῦν
dὲ πρὸς τῷ Γ τὸ καταφατικόν. καὶ ἃν η ὑὐ καθόλου ἡ ἑτέρα πρότασις ὑσαύτως· ἀεὶ γὰρ τὸ
μέσον ἔστιν ὁ ἀπὸ θατέρου μὲν ἀποφατικῶς λέγεται
κατὰ θατέρου δὲ καταφατικώς.

"Ὡστ' εἰδέχεται τάντικείμενα περαίνονται, πλὴν
οὐκ οἳ οὐδὲ πάντως, ἀλλ' εἰς εἰς τὰ ὑπὸ
tῷ μέσῳ ὡς η ταύτα εἶναι ἡ ὅλον πρὸς μέρος.
ἀλλ' δ' ἀδύνατον οὐ γὰρ ἑσοντιο οὐδαμῶς αἱ
προτάσεις οὐτ' ἐναντία αὐτ' ἀντικείμεναι.

Ἐν δὲ τῷ πρῶτῳ σχῆματι καταφατικός μὲν
συλλογισμὸς οὐδέποτ' ἔσται εἰς ἀντικείμενων προ-
tάσεων διὰ τὴν εἰρημένην αἰτίαν καὶ ἐπὶ τοῦ
πρῶτου σχῆματος, ἀποφατικὸς δ' ἔσται, καὶ
καθόλου καὶ μη καθόλου τῶν ὅρων ὅντων. ἔστω
γὰρ ἐπιστήμη ἐφ' οὖ τῷ Β καὶ Γ, ἱατρικῇ δ' ἐφ' οὖ

Α. εἰ οὐν λάβοι πᾶσαν ἱατρικῆν ἐπιστήμην καὶ
μηδεμίαν ἱατρικῆν ἐπιστήμην, τοῦ Β παντὶ τῷ Α
εἰλήφη καὶ τῷ Γ οὐδὲν, ὡς τ' ἔσται τις ἐπιστήμη
οὐκ ἐπιστήμη. ὀμοίως δὲ καὶ ἃν μη καθόλου
ληθῆ ἡ ΒΑ' πρότασις· εἰ γὰρ ἔστι τις ἱατρικῆ
ἐπιστήμη καὶ πάλιν μηδεμία ἱατρικῆ ἐπιστήμη,

συμβαίνει ἐπιστήμην τινὰ μη εἶναι ἐπιστήμην.
εἰς δὲ καθόλου μὲν τῶν ὅρων λαμβανομένων
ἐναντία αἱ προτάσεις, εὰν δ' ἐν μέρει ἀτέρου
ἀντικείμεναι.

1 ΒΑ 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.

* 63 b 33.
Δεί δέ κατανοεῖν ὅτι εἰσέχεται μὲν οὖτω τὰ ἀντικείμενα λαμβάνειν, ὡσπερ εἰσπομον πᾶσιν ἐπιστήμην σπουδαίαν εἶναι καὶ πάλιν μηδεμίαν ἢ τινὰ μὴ σπουδαίαν (ὅπερ οὐκ εἰσῳδε λανθάνειν), ἐστι δὲ δὴ ἄλλων ἑρωτημάτων συλλογίσασθαι βάτερον, ἢ ὡς ἐν Τοπικοῖς ἐλέχθη λαβεῖν.

'Επεὶ δὲ τῶν καταφάσεων αἱ ἀντιθέσεις τρεῖς, ἐξαχῶς συμβαίνει τὰ ἀντικείμενα λαμβάνειν, ἢ παντὶ καὶ μηδενὶ, ἢ παντὶ καὶ μὴ παντὶ, ἢ τινὶ καὶ μηδενὶ, καὶ τοῦτο ἀντιστρέφαι ἐπὶ τῶν ὀρῶν, οἷον τὸ Α παντὶ τῷ Β τῷ δὲ Γ μηδενὶ, ἢ τῷ Γ παντὶ τῷ δὲ Β μηδενὶ, ἢ τῷ μὲν παντὶ τῷ δὲ μὴ παντὶ, καὶ πάλιν τοῦτο ἀντιστρέφαι κατὰ τοὺς ὀροὺς. ὡμοίως δὲ καὶ ἐπὶ τοῦ τρίτου σχήματος: ὡστε φανερὸν ὅσαχαὶ τε καὶ ἐν ποιόις σχήμασιν εἰσέχεται διὰ τῶν ἀντικειμένων προτάσεων γενόμενα συλλογίσμοι.

Φανερὸν δὲ καὶ ὅτι ἐκ ψευδῶν μὲν ἐστὶν ἀληθὲς συλλογίσασθαι, καθάπερ εἰρήται πρότερον, ἐκ δὲ τῶν ἀντικειμένων οὐκ ἐστὶν: αἱ γὰρ ἐναντίοις οἱ συλλογισμοὶ γίγνεται τῷ πράγματι οἷον εἰ ἐστὶν ἁγαθὸν, μὴ εἶναι ἁγαθὸν, ἢ εἰ ζῷον, μὴ ζῷον, διὰ τὸ εὖ ἀντιφάσεως εἶναι τὸν συλλογισμὸν καὶ τοὺς ὑποκειμένους ὀροὺς ἢ τοὺς αὐτοὺς εἶναι ἢ τὸν μὲν ὀλον τὸν δὲ μέρος. δὴ μὲν δὲ καὶ ὅτι εἴν τοῖς παράλογοις οὐδὲν κωλὺς γίγνεσθαι τῆς ὑποθέσεως ἀντιφασιν, οἷον εἰ ἐστὶν περίττον, μὴ εἶναι περίττον· ἐκ γὰρ τῶν ἀντικειμένων προτάσεων ἐναντίοις ἢν ὁ

* Topics, VIII. i.

© Chs. ii.-iv. supra.
PRIOR ANALYTICS, II. xv

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.*

Since there are three forms of opposition to an affirmative statement, it follows that there are six ways of assuming opposite propositions. The predicate 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 premisses.

It is evident also that whereas we can draw a true inference from false premisses, as we have explained above, 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 contradictory 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
ARISTOTLE

συλλογισμός: ἕαν οὖν λάβῃ τοιαύτας, ἔσται τῆς ὑποθέσεως ἀντίφασις.

Δεῖ δὲ κατανοεῖν ὅτι οὕτω μὲν οὐκ ἔστιν ἑναντία συμπεράνασθαι εἰς ἐνός συλλογισμοῦ, ὥστε εἶναι τὸ συμπέρασμα τὸ μὴ ὁν ἀγαθὸν ἀγαθὸν ἢ ἄλλο τι τοιοῦτον, ἕαν μὴ εὑρίσῃ ἡ πρότασις τοιαύτη ληθηθῇ, οἷον πᾶν ζωὸν λευκὸν εἶναι καὶ μὴ λευκὸν, τὸν δ' ἀνθρωπον ζώον· ἀλλ' ἡ προσλαβεῖν δεῖ τὴν ἀντίφασιν (οἷον ὅτι πᾶσα ἑπιστήμη ὑπόληψις, εἶτα λαβεῖν ὅτι ἡ ἰατρική ἑπιστήμη μὲν ἔστιν οὐδεμία δ' ὑπόληψις, ὡσπερ οἱ ἔλεγχοι γίγνονται), ἢ ἐκ διὸ συλλογισμῶν ἀπὸ τῆς δ' εἶναι ἑναντία κατ' ἀλήθειαν τὰ εἰλημμένα οὐκ ἔστιν ἄλλον τρόπον ἢ τούτον, καθάπερ εἰρηται πρῶτον.

XVI. Τὸ δ' ἐν ἀρχῇ αἰτεῖσθαι καὶ λαμβάνειν ἔστι μὲν, ὡς ἐν γένει λαβεῖν, ἐν τῷ μὴ ἀποδεικνύειν τὸ προκειμένου, τούτῳ δὲ ἑπισυμβαίνει πολλαχώς· καὶ γὰρ εἰ ὅλως μὴ συλλογίζεται, καὶ εἰ δ' ἀγνωστοτέρων ἡ ὁμοίως ἀγνώστων, καὶ εἰ διὰ τῶν υστέρων τὸ πρῶτον· ἡ γὰρ ἀπόδειξις ἐκ πιστοτέρων τε καὶ προτέρων ἔστιν. τούτων μὲν οὖν οὐδὲν ἔστι τὸ αἰτεῖσθαι τὸ ἐκ ἀρχῆς· ἀλλ' ἐπεὶ τὰ μὲν δ' αὐτῶν πέρυκε γνωρίζονται τὰ δ' ἐκ δ' ἄλλων (αἱ μὲν γὰρ ἀρχαὶ δ' αὐτῶν, τὰ δ' ὑπὸ τὰς ἀρχάς δ' ἄλλων), οταν μὴ τὸ δ' δ' αὐτοῦ γνωστὸν δ' αὐτοῦ

1 ὑπόληψις B' n., Waitz: ὑπόληψις καὶ ὅχ ὑπόληψις οὐλογο. 2 μὴ τὸ] τὸ μὴ ἡ f, 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.

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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.

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


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tis épicheirή deikvnai, toî' aiteitai to ëx ãrçhits. touto d' éstî mên òutw poieîn òwò' evthús áxwssai to prōkeîmenov, éndèxetai dè kai metαbántas ep'
állass atrta twv peφukótwn di' ékeînov deikvnsvai
diâ twv òutwv apoddeikvnai to ëx ãrçhits, oîlon ei' to A
dekinùito diâ toû B to ëx òutw dè G
peφukos ei' deikvnsvai diâ toû A' svmbainve gar
auto' dè autoû to A deikvnai toûs òutw svlllogi-
ζomévous. òper poioûsin oî tâs parâllhlevs oîô-
mevov grâfein' laivânovi gar autoî éautouc
toûta laimvânoûtes a' oux oîlon te apoddeîeis mi'
oucîn twv parâllhlevn' woste svmbainei toûs òutw
svlllogiζomévous èkastov elivn lègenv, ei èstw
èkastov' òutw dè òpan èstai dè' autoû gnwstov'
òper âdûvaton.

64 b

Ei ouv tis âdîlou oucîs oti to A ùpárxei tiv G,
ômovos dè kai oti twv B, aiîtoî toû B ùpárxene to
A, ouwv dhîlou ei' to ën ãrçhî aiteitai, òll' oti ouk
apoddeiknsvi dhîlou' ou gar ãrçhî apoddeîeis to
ômovos âdîlou. ei meûtov toû B prôs toû G ouwvs
èxei woste taîtov elivn, ñ dhîlou oti antîstréfounv,
ñ ùpárxhe tháterov ñbatérov, to ën ãrçhî aiteitai.
kai gar an oti twv B toû A ùpárxhe di' ékeînov
dekvnv, ei antîstréfoi' nûn dè toûto kolvie, òll' oux
ò trôpov' ei dè taîto pouoi, to eîpîmenon ìn
pouoi kai antîstréfoi diâ' trîwv. òwovtovs dè kàv

1 diâ] ñs diâ C'.

• e.g., that the interior opposite angles are equal, which
depends upon the parallelism of the lines.
1 Sc. than the point to be proved.
• i.e. a premiss; cf. 53 a 3.
4 Sc. as genus to species.
• Assuming that B and C are not convertible.
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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 premiss,

'65 a 1-4.
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21. \( \textit{ei to } B \textit{ to } \Gamma \textit{ lambrivnou uparxeiv, omoiws adhlos on kai ei to } A, oupw to } \varepsilon \textit{ arxhs aieteitai, all' ouk apodeikonin. } \\
\textit{eain } \delta \textit{ taivon } \eta \textit{ to } A \textit{ kai } B \textit{ } \\
\eta \textit{ taiv aintistrephein } \eta \textit{ to } \varepsilon \textit{ epesihsaiv to } B \textit{ to } A, \textit{ to } \varepsilon \textit{ arxhs aieteitai dia tivn auvtan } \\
\textit{garr } \varepsilon \textit{ arxhs } \tau \textit{ dymeatai eirhetai } \eta \mu\nu, \alpha\nu\iota \textit{ to } \delta \textit{ aytou} \\
\tau \textit{ deikynai to } \mu\nu \textit{ de } \delta \textit{ aytou } \delta\iota\lambda\nu. \\
\textit{Ei oyn } \varepsilon \textit{ to } \varepsilon \textit{ arxhs aieteisbai to } \delta \textit{ aytou} \\
deikynai to \mu\nu \textit{ de } \delta \textit{ aytou } \delta\iota\lambda\nu, \textit{ touto } \delta \textit{ esti to } \\
\mu\nu \textit{ deikynai oyn } \varepsilon \textit{ omoiws adhlon } \varepsilon \textit{ ou } \textit{ deikynai } \eta \textit{ to } tauta to aytou } \\
\eta \textit{ taivon tois aytis uparxeiv, ev men to } \mu\nu \textit{ meson} \\
schymati kai tupto amfoterous an evdekonta to } \varepsilon \textit{ arxhs aieteisbai, ev } \delta \textit{ katagorikov sullologismov ev} \\
te to tupto kai to proptwn oyn } \delta \textit{ apofatikovs,} \\
\textit{ oyn } \textit{ tauta apo to aytou, kai oyn } \varepsilon \textit{ omoiws} \\
amfoterai ai protaseis (osautois } \delta \textit{ kai ev to } \\
\mu\nu \textit{ meso} \\
\textit{ dia to } \mu\nu \textit{ aintistrephein tous orous kat } \\
kata tois \\
apofatikous sullologismous.

"\textit{Esti } \delta \textit{ to } \varepsilon \textit{ arxhs aieteisbai ev } \mu\nu \textit{ tois ayo-} \\
deixeisai tauta alitheian ouwos exontai, ev } \delta \textit{ tois} \\
diakonikois tauta doxaiv.

XVII. \textit{To } \mu\nu \textit{ par } \tau \textit{ toto sumbainein to} \\

\textit{peudos, } \textit{ o polllakis ev } \mu\nu \textit{ tois logosi evwthamev } \gamma\eupsilon\epsilon\nu\iota\nu.

* 64 b 31-38.
* i.e. either in the minor or in the major premiss.
* Because the second figure does not permit affirmative syllogisms.
* Sc. ' or 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 fallacy,' 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).
prwton mev estin en tois eis to adunaton syllogismois, otan pros antipasa hip tou tov edeiktini to estin to adunaton. ouste gar me antiphasas erei to o para touto, all' oti pseudos ti eteth twn proteron, ouste en tis deiknoush ou gar tithson o antiphasas.

"Esti oti otan anairithi ti deiktikhs dia twn ABG, ouk estin eipein ws ou para to keimenon gegovetai o syllogismos. to gar me para touto gignetai tote legomein otan anairithentes tou tou mehen itton perainetai o syllogismos, oter ouk estin en tois deiktikois: anairithesis gar ti thseous oudei o pros taun estin syllogismos. fanevon ouin oti en tois eis to adunaton legetai to mei para touto, kai otan outhis ekh pros to adunaton eis arxhis upodeisic woste kai outhis kai mei outhis taunhs oudei itton sypbaivien to adunaton.

1 O mei ouin fanevoutatos trpois esti tov mei para thn thsein elai to pseudos otan apo thn upodeisic

asunaptoj e apo twn metov pros to adunaton o syllogismos, oter eirhetai kai en Topikois. to gar to anaitov ws aitov thnai touto estin, olyen ei boulomenos deizai oti asummetros e diammeteros epicheiroi ton Zimounos logon deiknina, ws ouk esti kineibai, kai eis touto apaioi to adunaton ouba-

1 o antiphason AB'BCu: o antiphason B: o antiphason A: antiphason n: tis antiphason ms.

* 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
65 b  
tη ἐξ ἀρχῆς. ἀλλος δὲ τρόπος εἰ συνεχεῖς μὲν εἰ ἡ τὸ ἀδύνατον τῇ ὑποθέσει, μὴ μέντοι δὲ ἐκεῖνην συμβαίνει. τούτο γὰρ ἐγχωρεῖ γενέσθαι καὶ ἐπὶ τὸ ἀνω καὶ ἐπὶ τὸ κάτω λαμβάνοντι τὸ συνεχές, οἷον εἰ τὸ Α τῷ Β κεῖται ὑπάρχον τὸ δὲ Β τῷ Γ τὸ δὲ Γ τῷ Δ, τούτο δὲ εἰ ὕφεδος, τὸ Β τῷ Δ ὑπάρχειν εἰ γὰρ ἀφαιρεθέντος τοῦ Α μὴν ἦττον ὑπάρχον τὸ Β τῷ Γ καὶ τὸ Γ τῷ Δ, οὐκ ἂν εἰ ὕφεδος διὰ τὴν ἐξ ἀρχῆς ὑποθέσεων. ἣ πάλιν εἰ τοῖς ἐπὶ τὸ ἀνω λαμβάνον τὸ συνεχές, οἷον εἰ τὸ μὲν Α τῷ Β τῷ Δ Β τῷ Ε καὶ τῷ Ε τῷ Ζ, ὕφεδος δὲ εἰ ὑπάρχειν τῷ Α τῷ Ζ· καὶ γὰρ οὕτως οὐδὲν ἂν ἦττον εἰ ὑπάρχει τὸ ἀδύνατον ἀναφεβεῖσθη τῆς ἐξ ἀρχῆς ὑποθέσεως.

'Αλλὰ δεῖ πρὸς τοὺς ἐξ ἀρχῆς ὅρους συνάπτειν τὸ ἀδύνατον· οὗτο γὰρ ἐσταὶ διὰ τὴν ὑποθέσειν, οἷον ἐπὶ μὲν τὸ κάτω λαμβάνοντι τὸ συνεχές πρὸς τὸν κατηγοροῦμενον τῶν ὅρων· εἰ γὰρ ἀδύνατον τὸ Α τῷ Δ ὑπάρχειν, ἀφαιρεθέντος τοῦ Α οὐκέτι ἐσται τὸ ὕφεδος. ἐπὶ δὲ τὸ ἀνω, καθ' οὖν κατηγορεῖται· εἰ γὰρ τῷ Β μὴ ἐγχωρεῖ τὸ Ζ ὑπάρχειν, ἀφαιρεθέντος τοῦ Β οὐκέτι ἐσται τὸ ἀδύνατον. ὁμοίως δὲ καὶ στερητικῶν τῶν συναγωγιμῶν ὄντων.

66 a  
Φανερῶν οὖν ὅτι τοῦ ἀδύνατον μὴ πρὸς τοὺς ἐξ ἀρχῆς ὅρους ὄντος οὐ παρά τὴν θεσίν συμβαίνει τὸ ὑφέδος· ἡ οὕτως οὗτος αἰε διὰ τὴν ὑποθέσιν ἐσται τὸ ὕφεδος· καὶ γὰρ εἰ μὴ τῷ Β ἀλλὰ τῷ Α ἐλεύθη τὸ ὑπάρχειν, τὸ δὲ Κ τῷ Γ καὶ τούτῳ τῷ Δ, καὶ οὕτω μένει τὸ ἀδύνατον· ὁμοίως δὲ καὶ ἐπὶ τὸ ἀνω

* i.e. working towards or away from the most universal term.
* i.e. that A applies to D.

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assertion. We have another form when the impossible 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 hypothesis. \(E.g.,\) if we are regarding the connexion in the downward direction, the impossible conclusion must be connected to the term which is the predicate.\(b\) 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 conclusion 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

\(a\) or (2) connected with it, but not dependent upon it.

\(b\) To avoid the objection of False Cause the conclusion must proceed from the original premisses.

\(c\) Even so the objection may sometimes be made,
λαμβάνοντι τοὺς ὤρους, ὡστ' ἐπει καὶ ὄντος καὶ μὴ 10 ὄντος τοῦτον συμβαίνει τὸ ἁδύνατον, οὐκ ἂν εἰ ἔ ἄρα τὴν θέσιν. ἦ τὸ μὴ ὄντος τοῦτον μηδὲν ἦττον γίγνεσθαί τὸ ψεῦδος οὐχ οὕτω ληπτέον ὡστ' ἀλλ' ὅταν ἀφαιρεθέντος τοῦτον διὰ τῶν λοιπῶν προτάσεων ταύτῳ περαιτήται ἁδύνατον, ἐπεὶ ταύτῳ γε ψεῦδος συμβαίνει διὰ πλειόνων ὑποθέσεων οὐδὲν ἵσως ἀτοπον, οἷον τὰς παραλλήλους συμπίπτειν καὶ εἰ μείζων ἔστιν ἡ ὄντος τῆς ἔκτος καὶ εἰ τὸ τρίγωνον 15 ἔχει πλείους ὀρθὰς δυνιν.

XVIII. Ὁ δὲ ψεύδης λόγος γίγνεται παρὰ τὸ πρῶτον ψεῦδος. ἦ γὰρ ἐκ τῶν δύο προτάσεων ἦ ἐκ πλειόνων πᾶς ἐστὶ συλλογισμός. εἰ μὲν οὖν ἐκ τῶν δύο, τούτων ἀνάγκη τὴν ἐτέραν ἦ καὶ ἀμφότερα εἰσὶν ψευδείς. εἰ ἀληθῶν γὰρ οὐκ ἦν ψευδής συλλογισμός. εἰ δ' ἐκ πλειόνων, οἷον τὸ μὲν Γ διὰ τῶν AB, ταῦτα δὲ διὰ τῶν ΔΕΖΗ, τούτων τι ἐσται τῶν ἐπάνω ψεῦδος, καὶ παρὰ τούτῳ ὁ λόγος τὸ γὰρ A καὶ B δὲ ἐκείνων περαιτήται· ὡστε παρ' ἐκείνων τι συμβαίνει τὸ συμπέρασμα καὶ τὸ ψεῦδος.

XIX. Πρὸς δὲ τὸ μή κατασυλλογίζεσθαι παρατηρητέον, ὅταν ἀνευ τῶν συμπερασμάτων ἑρωταὶ

* 53 b 11-25.
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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 a 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.

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ARISTOTLE

tὸν λόγον, ὅπως μὴ δοθῇ δις ταῦτον ἐν ταῖς προτάσεσιν, ἐπειδὴ ἦπερ ἵσμεν ὅτι ἀνευ μέσου συλλογισμὸς οὐ γίγνεται, μέσον δ' ἐστὶ τὸ πλεονάκι λεγόμενον. ὥς δὲ δεὶ πρὸς ἕκαστον συμπέρασμα ὑπηρεῖν τὸ μέσον, φανερὸν ἐκ τοῦ εἰδέναι ποῖον ἐν ἑκάστῳ σχήματι δεῖκνυται. τοῦτο δ' ἦμασ οὐ λήςεται διὰ τὸ εἰδέναι πῶς ὑπέχομεν τὸν λόγον.

Χρῆ δ' ὅπερ φυλάττεσθαι παραγγέλλομεν ἀποκρινόμενοι, αὐτοὺς ἐπιχειροῦντας πειρᾶσθαι λανθάνων. τοῦτο δ' ἕσται πρῶτον, εὰν τὰ συμπεράσματα μὴ προσυλλογίζωνται ἀλλ' εἰλημένων τῶν ἀναγκαίων ἀδηλα, ἦτο δὲ ἂν μὴ τὰ σύνεγγυς ἐρωτᾶ ἄλλ' ὅτι μάλιστα ἁμέσα. οἷον ἐστώ δόλιν συμπεράνθει σὺν τὸ Α κατὰ τοῦ Ζ· μέσα ΒΓΔΕ. δεὶ οὖν ἐρωτάν εἰ τὸ Α τῷ Β, καὶ πάλιν μὴ εἰ τὸ Β τῷ Γ, καὶ οὐτώ τὰ λοιπά. καὶ δὲ εἰνός μέσου γίγνεται ὁ συλλογισμὸς, ἀπὸ τοῦ μέσου ἀρχεσθαι μάλιστα γὰρ ἂν οὐτως λαθάνων τὸν ἀποκρινόμενον.

XX. Ἑπεὶ δ' ἔχομεν πότε καὶ πῶς ἐχόντων τῶν ὅρων γίγνεται συλλογισμὸς, φανερὸν καὶ ποτ' ἐσται καὶ ποτ' οὐκ ἐσται ἐλεγχος. πάντων μὲν γὰρ συγχρωμιμένων ἡ ἐναλλαξ τιθεμένων τῶν ἀποκρίσεων (οἷον τῆς μὲν ἀποφασικῆς τῆς δὲ κατα-

1 ἁμέσα ΒΓΔΕ': 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

and how to employ them.
ARISTOTLE

66 b

fatkece) éγχωρεί γίγνεσθαί ἐλεγχον· ἦν γὰρ συλ-
λογισμός καὶ οὕτω καὶ ἐκείνως ἔχοντων τῶν ὅρων.

10 ὅστ' εἰ τὸ κείμενον εἰπῆ ἐναντίον τῷ συμπεράσματι,
ἀνάγκη γίγνεσθαί ἐλεγχον· ὃ γὰρ ἐλεγχὸς ἀντι-
φάσεως συλλογισμός. εἰ δὲ μηδέν συγχωροῖτο,
ἀδύνατον γίγνεσθαι ἐλεγχον· ὃ γὰρ ἦν συλλογισμὸς
πάντων τῶν ὅρων στερητικῶν ὦτων, ὅστ' ο.LogInformation is not available for this page.
PRIOR ANALYTICS, II. xx–xxi

seen that a syllogism results both with the former and with the latter arrangement of terms.\(^a\) 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 \(^b\) that when all the terms \(^c\) 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.\(^d\)

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; 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 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,\(^e\) 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

\(^a\) i.e. both premisses.

\(^b\) 41 b 6.

\(^c\) i.e. terms contained in the same genus and subordinate one to another. Cf. Bonitz, *Index Arist.* 736 b 33.
ARISTOTLE

τούτων ἡ ὁ ἐπίσταται, τούτῳ μὴ ὑπολαμβάνειν; ἐπίσταται γὰρ πως ὅτι τὸ Α τῷ Γ ὑπάρχει διὰ τοῦ Β, ὡς ἡ καθολοῦ τὸ κατὰ μέρος, ὡστε ὁ πως ἐπίσταται, τούτῳ ὅλως ἄξιοι μὴ ὑπολαμβάνειν ὅπερ ἀδύνατον.

66 Ἐπὶ δὲ τοῦ πρῶτον λεχθέντος, εἰ μὴ ἐκ τῆς αὐτῆς συνατοχίας τὸ μέσον, καθ ἐκάτερον μὲν τῶν μέσων ἀμφοτέρας τὰς προτάσεις οὐκ ἐγχωρεῖ ὑπολαμβάνειν, οἷον τὸ Α τῷ μὲν Β παντὶ τῷ δὲ Γ μηδενὶ, ταῦτα δ’ ἀμφότερα παντὶ τῷ Δ. συμβαίνει γὰρ ἡ ἀπλώς ἡ ἐπὶ τι εἰναντίαν λαμβάνεσθαι τὴν πρώτην προτάσιν. εἰ γὰρ ὁ τὸ Β ὑπάρχει, παντὶ τὸ Α ὑπολαμβάνει ὑπάρχειν, τὸ δὲ Β τῷ Δ οἴδε, καὶ ὅτι τῷ Δ τὸ Α οἴδεν ὡστ’ εἰ πάλιν ὁ τῷ Γ μηδενὶ οἰεται τὸ Α ὑπάρχειν, ὡ τοῦ Β τινί ὑπάρχει, τούτῳ οὐκ οἰεται τὸ Α ὑπάρχειν. τὸ δὲ παντὶ οἰόμενον ὁ τὸ Β πάλιν τινι μὴ οἰεσθαι ὁ τὸ Β ἡ ἀπλώς ἡ ἐπὶ τι εἰναντίον ἔστιν.

67 Οὕτω μὲν οἷν οὐκ ἐνδεχεται ὑπολαβεῖν. καθ’ ἐκάτερον δὲ την μιὰν ἡ κατὰ θάτερον ἀμφοτέρας οὐδεν κωλύει, οἷον τὸ Α παντὶ τῷ Β και τῷ Γ τῷ Δ, καὶ πάλιν τῷ Α μηδενὶ τῷ Γ. ὁμοία γὰρ ἡ τοιαύτη ἀπάτη καὶ ὡς ἀπατώμεθα περὶ τὰ ἐν μέρει. οἷον εἰ τῷ Β παντὶ τῷ Α ὑπάρχει τὸ δὲ Β τῷ Γ παντὶ, τῷ Α παντὶ τῷ Γ ὑπάρξει. εἰ οὖν τε οἰδεν ὅτι τῷ Α ὁ τῷ Β ὑπάρχει παντὶ. οἴδε καὶ ὅτι τῷ Γ. ἀλλ’ οὐδεν κωλύει ἀγνοεῖν τῷ Γ ὅτι ἔστιν, οἷον εἰ τῷ μὲν Α δύο ὁρθαὶ τῷ δ’ ἐφ’ ὁ Β τρίγωνον τῷ δ’

* l. 22 supra.  
* Viz. C.
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, 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 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,'
ARISTOTLE

15 ἀφ' ὅ Γ αἰσθητὸν τρίγωνον ὑπολάβοι γὰρ ἀν τὰς μήτ' εἶναι τὸ Γ', εἰδώς ὅτι πάν τρίγωνον ἔχει δύο ὀρθάς, ὥστε ἁμα εἰσεται καὶ ἀγνοήσει ταύταν. τὸ γὰρ εἰδέναι πάν τρίγωνον ὅτι δύο ὀρθαὶς οὐχ ἀ- πλοὺς ἐστὶν, ἀλλὰ τὸ μὲν τῷ τὴν καθόλου ἔχειν ἐπιστήμην τὸ δὲ τὴν καθ' ἐκαστον. οὕτω μὲν οὖν 20 ὡς τῇ καθόλου οἶδε τὸ Γ ὁτι δύο ὀρθαί, ὡς δὲ τῇ καθ' ἐκαστον οὐκ οἶδεν, ὡστ' οὐχ ἐξει τὰς ἐναντίας.

'Ομοίως δὲ καὶ ὅ ἐν τῷ Μένωνι λόγος ὅτι η' μάθησις ἀνάμμησις. οὐδαμοῦ γὰρ συμβαίνει πρε- επιστάσθαι τὸ καθ' ἐκαστον, ἀλλ' ἁμα τῇ ἐπαγωγῇ λαμβάνειν τὴν τῶν κατὰ μέρος ἐπιστήμην ὑπερ 25 ἀναγνωρίζοντας. ἐνα γὰρ εἰδὼς ἵσμεν, οἶον ὅτι δύο ὀρθαίς, εἰν εἰδώμεν ὅτι τρίγωνον. ὁμοίως δὲ καὶ ἐπὶ τῶν ἄλλων.

Τῇ μὲν οὖν καθόλου θεωροῦμεν τὰ ἐν μέρει, τῇ δ' οἰκεία οὐκ ἵσμεν, ὡστ' ἐνδεχεται καὶ ἀπατάσθαι περὶ αὐτά, πλὴν οὐκ ἐναντίως, ἀλλ' ἔχεις μὲν τὴν 30 καθόλου ἀπατάσθαι δὲ τῇ κατὰ μέρος.

'Ομοίως οὖν καὶ ἐπὶ τῶν προειρημένων οὐ γὰρ ἐναντία ἡ κατὰ τὸ μέσον ἀπάτη τῇ κατὰ τὸν συλ- λογισμόν ἐπιστήμην, οὐδ' ἡ καθ' ἐκατέρου τῶν

* 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.

* Sc. of immediate apprehension.

* 66 b 20-30.
PRIOR ANALYTICS, II. xxi

B for ‘triangle’ and C for ‘sensible triangle,’ a 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. b 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. c

Similarly too with the theory in the Meno d 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. e

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. f 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

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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.

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
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.
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67 b
to auton upoleipetai agatho einai kai kakw. eiston
gar to men agatho einai ef' ou A, to de kakw einai
15 ef' ou B, palin de to agatho einai ef' ou G. eite
ouin taivon upolambaini to B kai to G, kai einai
to G to B upoleipetai, kai palin to B to A einai
omegaus, oste kai to G to A. wopener gar ei h
alphares kath' ou to G to B kai kath' ou to B to A,
20 kai kata tou G to A altheis h, ouito kai epi tou
upolambanein. omoios de kai epi tou einai taivot
gar oitos tou G kai B, kai palin tou B kai A, kai
to G tw A taivot h, oste kai epi tou doxaies
omoios. ar' ouin touto men anagkaios, ei tis diwsei
to prwton; all' isos ekinein phidios, to upolam-
25 banein tin' kakw einai to agatho einai, ei mh
cata sunebein-kei polhikes gar egchorei touto
upolambanein. episkeptivon de touto belion.

XXII. "Otan di' antistrephi tis akra, anagky kai
to meson antistrefein pros amys. ei gar to A
kata tou G dia tou B uparchei, ei antistrepein kai
30 uparchei, ou to A, panti to G, kai to B tw A
antistrepein, kai uparchei, ou to A, panti to B dia
meson tou G, kai to G tw B antistrepein dia meson
tou A. kai epi tou mh uparchein omegaus, olon ei
to B tw G uparchei tw de B to A mh uparchei, oude
to A tw G oux uparchei. ei de to B tw A anti-
35 strepein, kai to G tw A antistrepein. eiston gar to

* There is no obvious reference either here or in I. 22.
* The obligation is not discharged in the logical works, but
  cf. Met. IV. (G) iv.
* i.e. have the same extension and so are interchangeable.

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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\(^d\) 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.\(^b\)

XXII. When the extreme terms are convertible,\(^c\) 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.\(^d\)

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-

\(^d\) The syllogisms are as follows:

\[
\begin{align*}
(a) \text{ BaA} & \quad (b) \text{ CaB} & \quad (c') \text{ AaC} \\
(b) \text{ CaB} & \quad (c') \text{ AaC} & \quad (a) \text{ BaA} \\
(c) \text{ CaA} & \quad (a') \text{ AaB} & \quad (b') \text{ BaC}
\end{align*}
\]
ARISTOTLE

67 b  

B μὴ ὑπάρχου τῷ A· οὐδ' ἀρα τὸ Γ· παντὶ γὰρ τῷ Γ τὸ B ὑπήρχειν. καὶ εἰ τῷ B τὸ Γ ἀντιστρέφειν, καὶ τῷ A ἀντιστρέφειν· καθ' οὐ γὰρ ἀπαρτος τὸ B, καὶ τῷ Γ. καὶ εἰ τῷ Γ πρὸς τῷ Α ἀντιστρέφειν, καὶ τῷ B ἀντιστρέφειν [πρὸς τῷ A].  3 ω γὰρ τῷ B τῷ Γ, ὅ δ' τὸ A τῷ Γ' οὐκ ὑπάρχειν. καὶ μόνον τούτῳ ἀπὸ τοῦ συμπεράσματος ἀρχεταί, τὰ δ' ἅλλα οὐκ ἀμοίως καὶ ἐπὶ τοῦ κατηγορικοῦ συλλογισμοῦ.

Πάλιν εἰ τῷ A καὶ τῷ B ἀντιστρέφει καὶ τῷ Γ καὶ τῷ Δ ὡσαύτως, ἀπαντή δ' ἀνάγκη τῷ A ἦ τῷ Γ ὑπάρχειν, καὶ τῷ B καὶ Δ οὔτως ἐξεῖ ὡστε παντὶ θάτερον ὑπάρχειν. ἐπει γὰρ ω τῷ A τῷ B, καὶ ω τῷ Γ τῷ Δ, παντὶ δὲ τῷ A ἦ τῷ Γ καὶ οὐχ ἀμα, φανερὸν ὃτι καὶ τῷ B ἦ τῷ Δ παντὶ καὶ οὐχ ἀμα. οἷον εἰ τῷ ἀγένητον ἀφθαρτον καὶ τῷ ἀφθαρτον ἀγένητον, ἀνάγκη τῷ γενόμενον φθαρτόν καὶ τῷ φθαρτόν γεγονέναι· δύο γὰρ συλλογισμοὶ συγκειται. πάλιν εἰ παντὶ μὲν τῷ A ἦ τῷ B καὶ τῷ Γ ἦ τῷ Δ, ἀμα δὲ μὴ ὑπάρχειν, εἰ ἀντιστρέφει τῷ A καὶ τῷ Γ, καὶ τῷ B καὶ τῷ Δ ἀντιστρέφει· εἰ γὰρ των μὴ ὑπάρχει τῷ B ω τῷ Δ, δὴ οὖτι τῷ A ὑπάρχει· εἰ

3 πρὸς τῷ A f, πρὸς τῷ A δηλοῦτι supra lineam C: om. cet.

* AecC may be proved by a syllogism in Camestres, but cf. the following note.
* It seems better to keep the ms. reading τῷ A than to accept τῷ A τῷ B on the authority of Paeius. His reading requires a proof that no A is B, 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 Ἀ, καὶ τὸ Γ· ἀντιστρέφει γάρ· ὡστε ἀμα τὸ Γ καὶ Δ. τοῦτο δ` ἀδύνατον.

"Οταν δὲ τὸ Α ὅλω τῷ Β καὶ τῷ Γ ὑπάρχῃ καὶ μηδενὸς ἄλλου κατηγορηταί, ὑπάρχῃ δὲ καὶ τὸ Β παντὶ τῷ Γ, ἀνάγκη τὸ Α καὶ Β ἀντιστρέφειν· ἐπεὶ γὰρ κατὰ μόνων τῶν ΒΓ λέγεται τὸ Α, κατηγο-

ῥεῖται δὲ τὸ Β καὶ αὐτὸ αὐτοῦ καὶ τοῦ Γ, φανερῶν ὅτι καθ` ὅν τὸ Α καὶ τὸ Β λεχθήσεται πάντων πλήρως αὐτοῦ τοῦ Α.

Πάλιν ὅταν τὸ Α καὶ τὸ Β ὅλω τῷ Γ ὑπάρχῃ, ἀντιστρέφη δὲ τὸ Γ τῷ Β, ἀνάγκη τὸ Α παντὶ τῷ Β ὑπάρχειν· ἐπεὶ γὰρ παντὶ τῷ Γ τὸ Α, τὸ δὲ Γ τῷ Β διὰ τὸ ἀντιστρέφειν, καὶ τὸ Α παντὶ τῷ Β ὑπάρξει.

"Οταν δὲ δυοῖν ὄντων τὸ Α τοῦ Β αἱρετώτερον ἡ, ὄντων ἀντικειμένων, καὶ τὸ Δ τοῦ Γ ὄσιτως, εἰ αἱρετῶτερα τὰ ΑΓ τῶν ΒΔ, τὸ Α τοῦ Δ αἱρετώτερον. ὀμοίως γὰρ διωκτὸν τὸ Α καὶ φευκτὸν τὸ Β (ἀντικείμενα γὰρ), καὶ τὸ Γ τοῦ Δ (καὶ γὰρ ταῦτα ἀντικειμένα). εἰ οὖν τὸ Α τῷ Δ ὀμοίως αἱρετόν, καὶ τὸ Β τῷ Γ φευκτόν· ἐκάτερον γὰρ ἐκάτερον ὀμοίως, φευκτόν διωκτῷ· ὡστε καὶ τὰ ἀμφῶ τὰ ΑΓ τοῖς ΒΔ. ἐπεὶ δὲ μάλλον, οὐχ ὁλὸν τε ὀμοίως· καὶ γὰρ ἃν τὰ ΒΔ ὀμοίως ἢσαν. εἰ δὲ τὸ Δ τοῦ Α αἱρετῶτερον, καὶ τὸ Β τοῦ Γ ἢπτον φευκτόν· τὸ γὰρ ἐλαττον τῷ ἐλάττοις ἀντικειμένα. αἱρετῶτερον δὲ τὸ μεῖζον ἀγαθὸν καὶ ἐλαττον κακὸν ἢ τὸ ἐλαττον ἀγαθὸν καὶ μεῖζον κακὸν· καὶ τὸ ἀπαν ἁρὰ τὸ ΒΔ αἱρετῶτερον τοῦ ΑΓ· νῦν δ` οὐκ ἑστίν. τὸ Α ἁρὰ 510
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.\(^a\)

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

\(^a\) See. 'and therefore B applies to all D. Similarly D applies to all B. Therefore B and D are convertible.'
Aristotle

68 a

aιρετώτερον τού Δ, καί τό Γ ἀρα τού B ἦττον

φευκτόν.

40 Ἐι δὴ ἐλοίτο πᾶς ο ἔρων κατά τον ἔρωτα τό Α
to οὔτως ἔχειν ὡστε χαριζεσθαι καὶ το μὴ χαριζε-

σθαι το ἕφ' οὐ Γ, η το χαριζεσθαι το ἕφ' οδ Α καί

68 b το μὴ τοιούτων εἶναι οἶνον χαριζεσθαι το ἕφ' οδ B,

δήλων ὅτι τό Α το τοιούτων εἶναι aἱρετώτερὸν ἐστιν

η το χαριζασθαι.1 το ἀρα φιλείσθαι τῆς συνουσίας

aἱρετώτερον κατά τον ἔρωτα. μᾶλλον ἀρα ο ἔρως

5 ἐστι τῆς φιλίας η τού συνιναι: ει δε μάλιστα τούτου,

καὶ τέλος τούτο. το ἀρα συνιναι η οὐκ ἐστιν

ὅλως η το φιλείσθαι ἑνεκεν καὶ γαρ αἱ ἀλλα ἐπιθυμίαι καὶ τέχναι οὔτως.

XXIII. Πώς μὲν οὖν ἔχουσιν οἱ ὅροι κατὰ τὰς

αὐτιστροφὰς καὶ τὸ φευκτότερον ἢ aἱρετώτερον

10 εἶναι, φανερῶν ὅτι δ' οὐ μόνον οἱ διαλεκτικοὶ καὶ

ἀποδεικτικοὶ συλλογισμοὶ διὰ τῶν προειρημένων

γίνονται σχηματων, ἀλλὰ καὶ οἱ ρητορικοὶ καὶ οἱ

πλῆς ἠτίσον πότις καὶ η καθ' ὀποιανοῖν μέθο-

δοῖον, νῦν ἂν εἰς λεκτέων ἀπαντα γάρ πιστεύομεν ἡ

διὰ συλλογισμοῦ ἡ ἐξ ἐπαγωγῆς.

15 Ἐπαγωγὴ μὲν οὖν ἐστι καὶ ὁ ἐξ ἐπαγωγῆς

συλλογισμὸς τὸ διὰ τοῦ ἐτέρου θάτερον ἀκρον τῷ

μέσῳ συλλογίσασθαι, οἷον εἰ τῶν ΑΓ μέσον τῷ B,

διὰ τοῦ Γ δειξαὶ τὸ Α τῷ Β ὑπάρχων ὡς γάρ

ποιοῦμεθα τὰς ἐπαγωγάς. οἷον ἐστὶ τῷ Α μακρό-

20 βιον, τὸ δ' ἕφ' ω B τὸ χολὴν μὴ ἔχουν, ἕφ' ὥ δὲ Γ

प For the distinction between dialectical and demonstra-

tive reasoning cf. 24 a 22.

512
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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\[\text{\textsuperscript{b} For rhetorical arguments cf. An. Post. 71 a 9-11.}\]
ARISTOTLE

88 b

to kal' ekauston makrobdion, olon anbraptes cal
ippos kai hmiouos. tw de' G alw uparxhei to A:
apn gar to akhlon makrobdion, alla kai to B, to
mu' egen xohin, panti uparxhe to G. ei oon
antistrefei to G tw B kai mu' uperentei to meson,
anagky to A tw B uparxein: diadeixtai gar pro-
terox oti an diw atta tw autw uparxhi kai prois
bateron autoyn antistrefi to akron, oti tw
antistrefontai kai bateron uparxei tw on kathgoreu-
menvon. dei de noein to G to ex apantw tov kal'
ekauston synkeimevon: h gar epagwgh dia pantwn.

"Esti di' o tovoutos sullogismos ths prwtis kai
amous protasewos: oin men gar esti meson dia to
meson o sullogismos, oin de' mi' esti, di' epagwgh.

kai trpoum tiv aitikeitai h epagwgh tw sul-
logismwv: o men gar dia tov meson to akron tw
35 tritw dekynes, h de' dia tov tritou to akron tw
mesw. fisei men oivn proteros kai geomegaferos
o dia tov meson sullogismos, hmi' di' enargesteros
o dia ths epagwghs.

XXIV. Paradeigma di' estin othan tw mesw to
akron uparxhon deixh th dia tov hmoiou tw tritw:
40 dei de' kai to meson tw tritw kai to prwton tw


* 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 Jenkin-
son 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.

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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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a 68 a 21-25.

Induction supplies, without the aid of a middle term, the universal proposition which stands as major premiss for purposes of inference.

Because the abstract logical process is from universal to particular, but the human mind proceeds from particular to universal. Cf. Met. VII. (Z) iv. 1029 b 3-12.

ομοῖοι γνώριμοι εἶναι ὑπάρχον, οἷον ἕστω τὸ Α
κακὸν, τὸ δὲ Β πρὸς ὀμόροις ἀναφεύχθαι πόλεμον,
ἐφ’ ὦ καὶ τὸ 'Ἀθηναῖοι πρὸς Θηβαῖους, τὸ δ’
ἐφ’ ὦ Δ Θηβαῖους πρὸς Φωκεῖς. οἶνον οὖν βουλαμμεθα
dείξατο τῷ Θηβαῖοι πολεμεῖν κακὸν ἔστι, ληπ-
tέον τοῖς πρὸς τοὺς ὀμόρους πολεμεῖν κακὸν
τούτων δὲ πίστις ἐκ τῶν ὀμοίων, οἷον οἷον Θηβαῖους
ὁ πρὸς Φωκεῖς. ἐπεὶ οὖν τὸ πρὸς τοὺς ὀμόρους
κακὸν, τὸ δὲ πρὸς Θηβαῖους πρὸς ὀμόρους ἔστι,
φανερὸν ὅτι τὸ πρὸς Θηβαῖους πολεμεῖν κακὸν,
ὅτι μὲν οὖν τὸ Β τῷ Γ καὶ τῷ Δ ὑπάρχει φανερὸν
(ἀμφὶ γὰρ ἔστι πρὸς τοὺς ὀμόρους ἀναφεύξαι
πόλεμον), καὶ ὅτι τὸ Α τῷ Δ (Θηβαῖους γὰρ οὐ
cυνήγηκεν ὁ πρὸς Φωκεῖς πόλεμος). ὅτι δὲ τὸ Α
τῷ Β ὑπάρχει διὰ τοῦ Δ διεξόθεται, τὸν αὐτὸν
dὲ τρόπον καὶ εἰ διὰ πλεῖότων τῶν ὀμοίων ἡ πίστις
γίγνετο τοῦ μέσου πρὸς τὸ ἀκρον.
Φανερὸν οὖν ὅτι τὸ παράδειγμα ἐστὶν οὗτε ὡς
μέρος πρὸς οἷον οὗτε ὡς οἷον πρὸς μέρος, ἀλλ’ ὡς
μέρος πρὸς μέρος, ὅταν ἄμφοι μὲν ἢ ὑπὸ ταῦτο,
γνώριμοι δὲ θάτερον. καὶ διαφέρει τῆς ἐπαγωγῆς
ὅτι ἡ μὲν εἰς ἀπάντων τῶν ἀτόμων τὸ ἀκρον ἑδι-
kυνεῖ ὑπάρχειν τῷ μέσῳ καὶ πρὸς τὸ ἀκρον οὐ
συνήπτε τὸν συνλογισμὸν, τὸ δὲ καὶ συνάπτει καὶ
οὔκ εἰς ἀπάντων διέκκυσιν.
XXV. Ἀπαγωγή δ’ ἐστὶν ὅταν τῷ μὲν μέσῳ τὸ
πρῶτον δῆλον ἢ ὑπάρχον τῷ δ’ ἐσχάτῳ τὸ μέσον
ἀδηλοῦ μὲν, ὀμοίως δὲ πιστῶν ἡ μᾶλλον τοῦ συμ-

* Example proceeds neither (like induction) from particular 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. \textit{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, \textit{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.\(^a\) It differs from induction in that the latter, as we saw,\(^b\) shows from an examination of all the individual cases that the \(\langle\text{major}\rangle\) extreme applies to the middle, and does not connect the conclusion with the \(\langle\text{minor}\rangle\) extreme; whereas the example does connect it\(^c\) 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

\(^a\) 69 a 7.
περάσματος, ἐτὶ ἀν ὀλίγα ἤ τὰ μέσα τοῦ ἑσχάτου καὶ τοῦ μέσου πάντως γὰρ ἐγγύτερον εἶναι συμβαίνει τῆς ἐπιστήμης. οἷον ἔστω τὸ Α τὸ διδακτὸν, 25 ἐφ’ οὐ Β ἐπιστήμη, τὸ Γ δικαίωσθη. ἤ μὲν οὖν ἐπιστήμη ὅτι διδακτὸν φανερὸν. ἢ δ’ ἄρετη εἰ ἐπιστήμη ἀδηλον. εἰ οὖν ὁμιῶς ἢ μάλλον πιστὸν τὸ ΒΓ τοῦ ΑΓ, ἀπαγωγὴ ἐστὶν ἐγγύτερον γὰρ τοῦ ἐπιστασθαι διὰ τὸ προσεληφθέναι, τὴν ΑΓ’ ἐπιστήμην πρότερον οὐκ ἔχωντας.

20 Ἡ πάλιν εἰ ὀλίγα τὰ μέσα των ΒΓ· καὶ γὰρ οὕτως ἐγγύτερον τοῦ εἰδέναι. οἷον εἰ τὸ Δ εἰ ἐπὶ πετράγωνιζοθαί, τὸ δ’ ἐφ’ ὦ Γ. εὐθύγραμμον, τὸ δ’ ἐφ’ ὦ Ζ κύκλος· εἰ τοῦ Ε7· ἐν μόνον εἰ ἐπὶ μέσον, τὸ μετὰ μηνίσκων ἦσον γίγνεται εὐθύγραμμον τὸν κύκλον, ἐγγὺς ἃν εἰ ἔπει τοῦ εἰδέναι. ὅταν δὲ μὴν 25 πιστότερον ή τὸ ΒΓ τοῦ ΑΓ μὴν ὀλίγα τὰ μέσα, οὐ λέγω ἀπαγωγὴν οὐδέ όταν ἀμεσον ἡ τὸ ΒΓ’ ἐπιστήμη γάρ τὸ τοιοῦτον.

XXVI. Ἐνοτασίας δ’ ἐστὶ πρότασις προτάσει ἐναντία. διαφέρει δὲ τῆς προτάσεως ὅτι τὴν μὲν ἐνοτασίαν εἰδέχεται εἰναι ἐπὶ μέρους, τὴν δὲ προτάσιαν ἡ οἷς οὐκ εἰδέχεται ἡ οὐκ ἐν τοῖς καθόλου συλλογισμοῖς.

Φέρεται δὲ ἡ ἐνοτασία διχὼς καὶ διὰ δύο σχημάτων, διχὼς μὲν ὅτι ἡ καθόλου ἡ ἐν μέρει πάσα ἐνοτασία, ἐκ δύο δὲ σχημάτων ὅτι ἀντικείμενα φέρονται τὴν προτάσει, τὰ δ’ ἀντικείμενα ἐν τῷ

1 προσεληφθέναι, τὴν ΑΓ’ προσεληφθέναι τῇ ΑΓ τῇ ΒΓ,
Pacius, Tricot.


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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 E and F there is only one intermediate term—that the circle becomes equal to a rectilinear figure by means of lunules—a—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.
69 b

5 πρῶτον καὶ τῷ τρίτῳ σχῆματι περαινονται μόνοις.
οταν γαρ ἀξιωσθη παντὶ ὑπάρχειν, ἐπιστάμεθα ὅτι
ούδεν η ὅτι ταύτας οὐχ ὑπάρχει τούτων δὲ τὸ μὲν
μὴ δεν ἐκ τοῦ πρῶτον σχῆματος, τὸ δὲ τοῦ μὴ ἐκ
τοῦ ἑσχάτου. οἶνον ἐστι τὸ Α μίαν εἶναι ἐπι-
στήμην, ὥς ὥς τὸ Β ἐνεντία· προτείνατος δὴ μίαν
10 εἶναι τῶν ἐνεντίων ἐπιστήμην ἢ ὅτι ὅλος οὐχ ἢ
αὐτή τῶν ἀντικειμένων ἐνίσταται, τὰ δ΄ ἐνεντία
ἀντικεῖμενα, ὥστε γίγνεται τὸ πρῶτον σχῆμα, ἢ ὅτι
τοῦ γνωστοῦ καὶ ἀγνώστου ou μία· τούτο δὲ τὸ
τρίτων· κατὰ γὰρ τοῦ Γ, τοῦ γνωστοῦ καὶ ἀγνώ-
στοι, τὸ μὲν ἐνεντία εἶναι ἀληθὲς, τὸ δὲ μίαν ἀυτῶν
15 ἐπιστήμην εἶναι ψεῦδος.

Πάλιν ἐπὶ τῆς στερητικῆς προτάσεως ὧσαντως.
ἀξιοῦντος γὰρ μή εἶναι μίαν τῶν ἐνεντίων ἢ ὅτι
πάντων τῶν ἀντικειμένων ἢ ὅτι τινῶν ἐνεντίων ἢ
αὐτή λέγομεν, οἶνον ὑγιεινοῦ καὶ νοσώδους· τὸ μὲν
οὐν πάντων ἐκ τοῦ πρῶτου, τὸ δὲ τινῶν ἐκ τοῦ
τρίτου σχῆματος.

20 Ἀπλῶς γὰρ ἐν πᾶσι καθόλου μὲν ἐπιστάμενον
ἀνάγκη πρὸς τὸ καθόλου τῶν προτεινομένων τήν
ἀντίθεσιν εἰπεῖν· οἶνον εἰ μή τὴν αὐτὴν ἀξίοι τῶν
ἐνεντίων, πάντων εἰποντα τῶν ἀντικειμένων μίαν
(οὔτω δ’ ἀνάγκη τὸ πρῶτον εἶναι σχῆμα, μέσον γὰρ
γίγνεται τὸ καθόλου πρὸς τὸ ε’ ἀρχης)· ἐν μέρει
25 δὲ, πρὸς ὅ ἐστι καθόλου καθ’ οὐ λέγεται ἡ πρό-

* Because the second figure gives only negative conclusions; 28 a 7.

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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;
tasis, ολον γνωστον και ἀγνωστου μη την αυτην·
dα γαρ ειναιτη καθολου προς ταυτα (και γεννεται
to τριτον σχημα· μεσον γαρ το εν μερει λαμβανο
dον, ολον το γνωστον και το ἀγνωστον). εξ ον
gαρ απο συλλογισασθαι τοιναιτιον, εκ τοιτων και
tas ενστασις επιχειρομεν λεγειν. διο και εκ
μονων τοιτων των σχηματων φερομεν· εν μονοις
gαρ οι αντικειμενοι συλλογισμοι (δια γαρ τοι μεσον
ουτ ην καταφατικως).

"Ετι δε καιν λογου δειοτο πλειονος η δια του
μεσου σχήματος, ολον ει μη δοιη το Α τω Β υπάρ
χειν δια το μη άκολουθειν αυτω το Γ. τοιτο γαρ
δε άλλων προτάσεων δηλον· ου δει δε εις άλλα
εκτρέπεσθαι την ενστασιν, άλλ' ειδικες φανερων εγειρ
την ετεραν πρότασιν. διο και το σημειον εκ μονον
tοιτου του σχήματος ουκ έστιν.

'Επισκεπτεον δε και περι των άλλων ενστασεων,
ολον περι των εκ του ειναιτου και του ομοιου και
του κατα δοξαν, και ει την εν μερει εκ του πρωτου
η την στερητικην εκ του μεσου δυναταν λαβειν.

XXVII. Εικοσ δε και σημειον ου ταυτων έστιν,
αλλα το μεν εικοσ έστι πρότασις ένδοχος· ο γαρ ως
επι το πολυ ιςασιν ουτω γιγνομενον η μη γιγνο
μενον η ον η μη ον, τουτ έστιν εικοσ, ολον το
μυσειν τους φθονουντας η το φιλειν τους έρωμενων
σημειον δε βοιλεται εναι πρότασις άποδεικτικη

* 28 a 7.
* The argument is: AaC—BeC, .. BeA. But this de
pends upon the validity of the major AaC, which itself needs
proof.
* Cf. 70 a 34 ff. The remark is irrelevant here.
* Cf. Rhet. II. xxv.

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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.
ἀναγκαία ἡ ἐνδοξος· οὐ γὰρ ὤντος ἐστὶν ἡ ὁδ γενομένου πρότερον ἡ ὑστερον γέγονε τὸ πράγμα, τούτο
10 σημείον ἐστὶ τοῦ γεγονέναι ἡ εἶναι.

Ἐνθύμημα μὲν οὖν ἐστὶν συλλογισμὸς ἐκ εἰκότων ἡ σημείων, λαμβάνεται δὲ τὸ σημεῖον τριχώς, ὀσαχώς καὶ τὸ μέσον ἐν τοῖς σχήμασιν ἡ γὰρ ὡς ἐν τῷ πρῶτῳ ἡ ὡς ἐν τῷ μέσῳ ἡ ὡς ἐν τῷ τρίτω, οἷον τὸ μὲν δείξαι κύουσαν διὰ τὸ γάλα ἐχειν ἐκ
15 τοῦ πρῶτου σχήματος· μέσον γὰρ τὸ γάλα ἐχειν. ἐφ' ω τὸ Α κύιν, τὸ Β γάλα ἐχειν, γυνὴ ἐφ' ω Γ·
τὸ δ' ὅτι οἱ σοφοὶ σπουδαίοι, Πιττακός γὰρ σπουδαῖοι, διὰ τοῦ ἔσχατου. ἐφ' ω Α τὸ σπουδαίον, ἐφ' ω Β οἱ σοφοί, ἐφ' ω Γ Πιττακός. ἀλθέοις δὴ καὶ τὸ Α καὶ τὸ Β τοῦ Γ κατηγορήσαι, πλὴν τὸ
20 μὲν οὖν λέγουσι διὰ τὸ εἰδέναι, τὸ δὲ λαμβάνουσιν. τὸ δὲ κύιν ὅτι ὦχρα διὰ τοῦ μέσου σχήματος
βουλεταὶ εἶναι· ἐπεὶ γὰρ ἐπεται ταῖς κυουσαις τὸ ὦχρον, ἀκολούθει δὲ καὶ παῦτη, δεδεῖξθαι οἴονται ὅτι κύιν.
τὸ ὦχρον ἐφ' οὗ τὸ Α, τὸ κύιν ἐφ' οὗ Β, γυνὴ ἐφ' οὗ Γ.

Ἐὰν μὲν οὖν ἡ μία λεξῆ πρότασις, σημεῖον
25 γίγνεται μόνον, ἐὰν δὲ καὶ ἡ ἐτέρα προσλήψῃ, συλλογισμὸς, οἷον τοῖς Πιττακός ἐλευθέροις, οἱ γὰρ
φιλότιμοι ἐλευθέροι, Πιττακός δὲ φιλότιμος· ἡ
πάλιν ὅτι οἱ σοφοὶ ἁγαθοὶ, Πιττακός γὰρ ἁγαθὸς,
ἀλλὰ καὶ σοφός.

Ὅτως μὲν οὖν γίγνονται συλλογισμοί, πλὴν ὁ μὲν
30 διὰ τοῦ πρῶτου σχήματος ἄλτοσ, ἐν ἀλήθεις ἡ
(καθόλου γὰρ ἐστὶν), ὁ δὲ διὰ τοῦ ἐσχάτου λύσιμος.
sary or generally accepted. 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, 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

\[ \text{Strictly an enthymeme.} \]
If the signs of an enthymeme in the first figure are true, the conclusion is inevitable. Aristotle does not mean that the conclusion is universal, but that the universality of the major premiss implies the validity of the minor and conclusion. The example (*all* those who love honour, etc.) quoted for the third figure contains no universal premiss or sign, and fails to establish a universal conclusion.

* i.e. when both premisses are affirmative.

* Signs may be classified as irrefutable (1st figure) and
figure can be refuted even if the conclusion is true, because the syllogism is neither universal nor relevant to our purpose.\(^{a}\) 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 \(^{b}\); 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 \(^{c}\) (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 \(^{d}\) 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.

\(^{a}\) Alternatively the name 'sign' may be restricted to the 2nd and 3rd figures, and may be replaced by 'index' in the first.
ΑΡΙΣΤΟΤΛΗ

ίδιον ἐκάστου γένους πάθος καὶ σημεῖον, δυνασμέθα φυσιογνωμονεῖν. εἰ γὰρ ἐστιν ἰδία τινὶ γένει ὑπάρχον ἀτόμων πάθος, οἷον τοῖς λέονσιν ἄνδρεῖα, ἀνάγκη καὶ σημεῖον εἰναὶ τῷ συμπάσχειν γὰρ ἀλλήλοις ὑπόκειται. καὶ ἐστιν τοῦτο τὸ μεγάλα τὰ ἀκρωτήρια ἔχειν· ὃ καὶ ἄλλοις ὑπάρχειν γένεσι μὴ ἄλοις ἐνδεχεται. τὸ γὰρ σημεῖον οὕτως ἰδίων ἐστιν, ὅτι ἄλοις γένους ἰδίων ἐστὶ τὸ πάθος, καὶ οὐ μόνον ἰδίων, ἀλλὰ καὶ ἐν ἄλλω γένει ταύτῳ, καὶ οὕτως ἄνδρείως ὁ άνθρωπος καὶ ἄλλο τῷ ζῷων. ἐξει ἀρα τὸ σημεῖον ἐν γὰρ ἐνός ἓν, εἰ τοῖνυν ταύτῃ ἔστι, καὶ δυνασμέθα τοιαύτα σημεῖα συλλέξαι ἐπὶ τούτων τῶν ζῴων ἀ μόνον ἐν τῷ πάθος ἐχει ταῦτα, ἐκαστον δ' ἐχει σημεῖον, ἐπείπερ ἐν ἂν ἄναγκη, δυνασμέθα φυσιογνωμονεῖν. εἰ δὲ δυο ἐχει ἰδία ὅλου τὸ γένος, οἷον ὁ λεον ἄνδρειον καὶ μεταδοτικὸν, πώς γνωσομέθα πότερον ποτέρου σημείων τῶν ἰδίω ἀκολουθοῦντων σημείων; ἢ εἰ ἄλλω μη ὅλω τινὶ ἀμφω, καὶ ἐν ὁς μη ὅλως ἐκάστῳ τερον, ὅταν τὸ μὲν ἐχου τὸ δὲ μη' εἰ γὰρ ἄνδρειος μὲν ἐλευθεριος δὲ μη', ἐχει δὲ τῶν δυο τοδι, δηλον ὅτι καὶ ἐπὶ τοῦ λέοντος τοῦτο σημεῖον τῆς ἄνδρειας.

ο ἔστι δή τὸ φυσιογνωμονεῖν τῷ ἐν τῷ πρώτῳ σχέματι τὸ μέσον τῷ μὲν πρώτῳ ἀκρω ἀντιστρέφειν, τοῦ δὲ τρίτου ὑπερτείνειν καὶ μη ἀντιστρέ-
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.
ARISTOTLE

φειν, οὖν ἀνδρεία τὸ Α, τὰ ἀκρωτήρια μεγάλα ἐφ’ οὐ Β, τὸ δὲ Γ λέων. ψ δὴ τὸ Γ τὸ Β παντὶ, ἀλλὰ καὶ ἄλλους. ψ δὲ τὸ Β, τὸ Α παντὶ καὶ οὐ πλεῖον, ἀλλ’ ἀντιστρέφει· εἰ δὲ μή, οὔκ 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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