NEW ESSAYS ON ARISTOTLE'S *ORGANON*

Edited by
António Pedro Mesquita and Ricardo Santos

New Essays on Aristotle's *Organon*

This collection of new essays by an international group of scholars closely examines the works of Aristotle's *Organon*.

The *Organon* is the general title given to the collection of Aristotle's logical works: *Categories*, *De Interpretatione*, *Prior Analytics*, *Posterior Analytics*, *Topics*, and *Sophistical Refutations*. This extremely influential collection gave Aristotle the reputation of being the founder of logic and has helped shape the development of logic for over two millennia. The chapters in this volume cover topics pertaining to each of the six works traditionally included in the *Organon* as well as its manuscript tradition. In addition, a comprehensive introduction by the editors discusses Aristotle and logic, the composition and order of the *Organon*, and the authenticity, title, and chronology of the treatises that make up these works. As an appendix, the volume includes a new critical edition of the Greek text of Book 8 of the *Topics*.

New Essays on Aristotle's Organon offers a valuable insight into this collection for students and scholars working on Aristotle, the works of the *Organon*, or the philosophy of logic more broadly.

António Pedro Mesquita is Professor at the Department of Philosophy and Member of the HPhil Research Group of the Centre of Philosophy of the University of Lisbon.

Ricardo Santos is Associate Professor at the Department of Philosophy and Member of the LanCog Research Group of the Centre of Philosophy of the University of Lisbon.

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Contributors

Francesco Ademollo is Associate Professor of Ancient Philosophy at the University of Florence and Visiting Professor at the Scuola Normale Superiore in Pisa.

David Bronstein is Associate Professor and Senior Research Fellow in the Institute for Ethics and Society at the University of Notre Dame Australia.

Paolo Crivelli is Professor at the Department of Philosophy of the University of Geneva.

Paolo Fait is the Anthony Quinton Fellow and a Tutor in Classical Philosophy at New College, University of Oxford.

Paulo Fernando Tadeu Ferreira is Assistant Professor of Ancient Philosophy at the Federal University of São Paulo.

Pieter Sjoerd Hasper is Associate Professor at the Department of Philosophy, University of Hamburg.

Katerina Ierodiakonou is Professor of Ancient Philosophy at the Department of the History and Philosophy of Science of the National and Kapodistrian University of Athens and Associate Professor at the Department of Philosophy of the University of Geneva.

Colin Guthrie King is Associate Professor of Philosophy at Providence College.

António Pedro Mesquita is Professor at the Department of Philosophy and Member of the HPhil Research Group of the Centre of Philosophy of the University of Lisbon.

Pierre-Marie Morel is Professor of Philosophy at the University of Paris 1 Panthéon-Sorbonne.

Pierre Pellegrin is Emeritus Senior Researcher at the CNRS in Paris.

Ricardo Santos is Associate Professor at the Department of Philosophy and Member of the LanCog Research Group of the Centre of Philosophy of the University of Lisbon.

Hermann Weidemann is Professor Emeritus of Philosophy at the University of Münster.

Marco Zingano is Professor of Philosophy at the University of São Paulo.

Breno Zuppolini is Assistant Professor of Philosophy at the Federal University of São Paulo.

Abbreviations of Titles of Aristotle's Works

APo.	*Posterior Analytics*
APr.	*Prior Analytics*
Cael.	*On the Heavens*
Cat.	*Categories*
De an.	*On the Soul*
EE	*Eudemian Ethics*
EN	*Nicomachean Ethics*
GA	*Generation of Animals*
Int.	*De Interpretatione*
Mem.	*On Memory*
Metaph.	*Metaphysics*
MM	*Magna Moralia*
PA	*Parts of Animals*
Ph.	*Physics*
Po.	*Poetics*
Rh.	*Rhetoric*
SE	*Sophistical Refutations*
SomnVig.	*On Sleep*
Top.	*Topics*

An Introduction to Aristotle's *Organon*

António Pedro Mesquita and Ricardo Santos

I.   Aristotle's *Organon*

1.   *Aristotle and Logic*

Aristotle was the creator of logic in the West – so we are constantly reminded. This trivial historical truth makes it all the more difficult to accommodate a couple of facts about the way he deals with logic. However, these facts are intrinsically linked to the peculiar status of logic within Aristotle's philosophy, at least as tradition came to construe it.

To begin with, Aristotle has no general fixed name for logic. Aristotle's logical interests cover a wide range of topics, which extend from (to cite just some of the main ones) conceptual analysis (in the *Categories*) to semantics and theory of propositions (in the *De Interpretatione*), formal logic, both assertoric and modal (in the *Prior Analytics*), theory of science (in the *Posterior Analytics*), dialectics or argumentation theory (in the *Topics*), and fallacy theory (in the *Sophistical Refutations*). Aristotle's corpus does not testify to any common designation for this lot. He certainly did not use the noun λογική in this sense. In all evidence, it was the Stoics who first applied this designation to logic as a whole, in their own (also very broad) interpretation of the concept.[1] Aristotle did quite often use the adjective λογικός and the adverb λογικῶς, but these words do not mean "logical" or "logically" in the contexts where they occur;[2] rather, they bear special senses there, even slightly deprecatory ones, most commonly indicating that whatever they qualify must be taken in a general, abstract, or merely verbal way.[3] On occasion, one may find him using the term ἀναλυτικός in relation to logical studies, but it seems to have in these cases a more restricted sense, closer, as a matter of fact, to our modern conception of logic than to the broader collection of subjects encompassed by Aristotle's logical writings.[4]

So Aristotle created logic, and he may even have himself been aware of this, if the final statement of the *Sophistical Refutations*, where he claims, in the most vigorous terms, to have been pioneering a line of research that was never pursued before, was intended to cover the whole cycle of studies he develops in his logical treatises.[5] However, he could not have said it quite the way we do – and surely not in so few words.

A second fact that thickens the mystery around the Aristotelian status of logic is that Aristotle does not seem to have a place for it within his general conception of knowledge either. With striking consistency throughout the corpus, Aristotle says that all sciences fall under three types only, being either theoretical, practical, or productive.[6] As far as we can guess from the somewhat scattered remarks he makes in this regard, this threefold classification results from a teleological conception of knowledge and, in particular, of the different types of goals it can aim at. Roughly, the idea seems to be that either knowledge is sought in view of knowledge itself, irrespective of what may result from it (in which case it is theoretical knowledge), or it is sought in view of something else, and that, if the latter, either it is sought in order to inform and guide human action (in which case it is practical knowledge) or it is sought in order to produce some concrete object or effect, such as a house or a healthy condition of the body (in which case it is productive knowledge).[7] Now, logic, as Aristotle views it, does not seem to fit into this scheme, because, unlike the sciences that fall under the classification, it quite simply lacks any specific goal, be it either the production of something, human action, or knowledge itself: it is structurally *a means* to achieve the goals sought by the other sciences. To this extent, logic, although contributing somehow to human knowledge, has no place in the threefold classification, on account of its teleological nature. This perspective can be translated into more technical terms by appealing to a basic principle of Aristotle's theory of science: each well-formed science studies one genus – that is to say, it has as its object some delimited portion of reality[8] – and logic has none. Logic is, as it were, intrinsically general – λογικός in one of the preferred senses that the word carries in Aristotle's idiolect.

This line of reasoning is obviously at the root of the notion that logic is *an instrument*, an ὄργανον, of knowledge. In fact, if you follow such line, you will eventually conclude that logic is not a proper science or scientific field (a "part of philosophy", as it came to be technically called in Hellenistic times), but a mere tool for building scientific knowledge in *any* domain (an "instrument of philosophy", in the same jargon).

Aristotle himself never fully develops this line of reasoning, nor does he use the word ὄργανον to describe logic. He may or may not have thought that logic was the instrument of philosophy, but, if he did, he never put it in writing, as far as his extant works allow us to ascertain. There are, however, a few passages in the *Topics* where a suggestive vocabulary is used in this regard. In two of them, Aristotle does not refer to logic or even dialectics as an instrument, but he does speak of the instruments of dialectics, that is to say, the tools by which the dialectician is able to build arguments for and against a given thesis. The six final chapters of Book I are dedicated to describing those tools, and the word ὄργανον occurs at the beginning of the first one and at the end of the last one.[9] A reference, in the treatise's final chapter, to the fact that discerning the consequences of two opposite assumptions is "no mean instrument" (οὐ μικρὸν ὄργανον), because "it then only remains to make a right choice of one of them", goes apparently in the same direction.[10]

A fourth passage, where we do not find the word ὄργανον, but something of its bouquet can be detected, is more complex. In this passage, Aristotle describes

dialectical problems as being concerned either with choice and avoidance or with truth and knowledge, either – he adds – on their own (ἢ αὐτὸ) or as "auxiliary to some other such problem" (ἢ ὡς συνεργὸν πρός τι ἕτερον τῶν τοιούτων).[11] The text is difficult and uncertain, and so it admits of several interpretations. In the most straightforward reading, Aristotle has in mind *two* types of dialectical problems – let us call them "practical" and "theoretical", respectively – and considers that, in both cases, such problems are sometimes concerned directly with these matters – namely, with things to choose or avoid (like whether pleasure is to be chosen or not) and things to know just for the sake of knowledge (like whether the world is eternal or not) – and sometimes they are only *indirectly* concerned with them, insofar as solving such problems helps the former, "pure" practical and theoretical problems, to be eventually solved as well. However, an influential line of interpretation saw it otherwise. According to this interpretation, Aristotle is considering here *three* types of dialectical problems, namely, theoretical, practical, and *logical* (i.e. "auxiliary") problems. This is the reading adopted by Alexander of Aphrodisias.[12] He adopts it in connection with another text of the *Topics*, where Aristotle states that there are roughly three kinds of premises and problems, namely ethical, physical and "logical" (αἱ μὲν γὰρ ἠθικαὶ προτάσεις εἰσίν, αἱ δὲ φυσικαί, αἱ δὲ λογικαί).[13] In Alexander's view, what Aristotle is saying in the latter passage is essentially what he had already said in the former.[14]

If Alexander were right, then Aristotle would have used the word λογικός in the sense of "logical" after all, and he would have come very close to acknowledging the instrumental nature of logic.[15] But is Alexander right? Not necessarily. In the first place, as we have seen, the text allows for a different, more natural and direct reading. Alexander's alternative reading probably results from a kind of unwitting contamination by the later passage in which Aristotle distinguishes the three types of dialectical premises. But this passage, in turn, also does not necessarily have the sense that Alexander gives it. In fact, the word λογικαί used to discriminate one of the three types of premises seems to retain here the usual Aristotelian sense of "general": "logical" premises are not those that have a logical content, as opposed to a physical or ethical content, but those that do not have any particular content at all, in the sense that they can be indifferently applied to physical matters as well as to ethical matters, and simply cut across scientific disciplines. The example of λογικὴ πρότασις given in the text ("whether the same science studies contraries or not") is a pretty eloquent illustration of such general premise. That said, considering that in Aristotelian terms logic is itself λογικός in this sense, one can perhaps find in this text a remote ancestor of the Stoics' use of the expression λογική to designate logic – and of our own, for that matter.

One final word on this issue: whether or not Aristotle was persuaded of the instrumental nature of logic, he was certainly very much convinced of its propaedeutic character. In fact, he warns the reader on occasion about the priority of the "analytics" over the study of particular disciplines[16] and seems to regard the former as an essential part of the education of a cultivated person, let alone of any philosopher.[17] As we will see right away, this fact is not without consequences for the history of logic, and more to the point for the history of Aristotle's logical treatises.

2.   *Logic as an* **Organon**

If Aristotle never uses the word ὄργανον to describe logic, it was not him either who attributed this title to the set of his logical works, in particular the six that still fall under this designation today: *Categories*, *De Interpretatione*, *Prior Analytics*, *Posterior Analytics*, *Topics*, and *Sophistical Refutations*.[18] As a matter of fact, it was not even Aristotle who organised this set as such, just as he was not, in general, responsible for proposing any kind of ordering and succession of his works – although sometimes the incipit and/or the explicit of some of them do give indications in this respect (it remains to be seen, in each case, whether they were written by him). The organisation of the treatises and, in the case of the logical writings, their gathering into a collection entitled *Organon*, which came to be placed at the beginning of his extant works, were tasks accomplished by the later tradition.

Clearly, from a time that is difficult to determine with precision, successors, followers, and commentators of Aristotle began to increasingly value the idea of logic as an ὄργανον of knowledge and to take it as a basic and core notion of the Aristotelian canon. The motivation for this, as far as we can tell in retrospect, was apparently threefold. First of all, no doubt, a genuinely conceptual concern about how logic should be conceived and how it should be related to philosophical knowledge as a whole. On the other hand, a bibliographical interest in the organisation of the treatises that Aristotle devoted to logical topics within the set of his known works. Finally, a philosophical and didactic motivation, aimed at establishing the most appropriate reading order for the whole of those works and, within them, for that particular set. All these different lines of thought were eventually connected: the idea that logic is an instrument of philosophy has as a consequence that it must be learned first (before learning anything that requires an instrument to be done, one must learn how to handle that instrument), and, therefore, that the books dealing with logic ought to come first in the well-organised succession of the master's works.[19] And they all surely arose from intellectual debates on these issues, very lively at the time, between Peripatetics and adherents of other philosophical schools, as well as amongst the Peripatetics themselves, which today can only be guessed at.

One such debate, motivated by the first concern pointed out earlier, seems historically indisputable: the polemic between Stoics and Peripatetics on the true nature of logic, either as a part, among others, of philosophy or as an instrument of philosophy.[20] However, the concept of ὄργανον applied to logic appears to have increased its relevance especially in the framework of the bibliographic and pedagogical motivations just mentioned.

It is likely that Andronicus of Rhodes already made use, at least implicitly, of this concept in his (lost) book on the catalogue of Aristotle's works,[21] if indeed he reserved the first section of scholarly titles in this catalogue for the set of logical treatises he considered authentic (the six referred to earlier, minus the *De Interpretatione* and, perhaps, the last six chapters of the *Categories*, known collectively as the *Postpredicaments*),[22] and maybe even explicitly, in view of the fact that, according to late Neoplatonic commentators, he recommended that the student of

Aristotle should begin his study by them.[23] Be that as it may, any of these facts would be enough to attest that, at least starting from Andronicus, *a certain Organon* was already constituted – a certain subset of Aristotle's works grouping together those that dealt with logic, in the Aristotelian sense, to which some kind of pedagogical priority over the others was given. Now, by advocating that the study of Aristotle should begin with the logical treatises, Andronicus was most likely also entering into an ongoing debate, or even initiating one. In fact, we know that other authors, more or less at the same time, defended different perspectives in this regard. This is the case of Boethus of Sidon,[24] who advocated that the student should rather start with the physical treatises, because, so Philoponus explains, physics "is more familiar and well-known, and it is always necessary to start from things that are clearer and well-known"[25] – a distinctively Aristotelian remark, which bears witness to the fact that antiquity knew of different, well-informed positions on the starting point of philosophical studies within Peripatetic circles. A little further on, Philoponus says that others still advocated starting with ethics; he does not clarify who though, and so does not allow one to ascertain whether these were also Andronicus' contemporaries.[26] It is, however, likely that he had in mind people within Platonic[27] and/or Stoic circles.[28] Among Aristotle's commentators, Aspasius, more than a century after Andronicus, seems to share the latter point of view.[29] The reasoning he develops in his commentary appears to be somehow at the basis of the thesis assumed by the Alexandrian commentators (which we will shortly return to) according to which some kind of "character-building" must be presupposed even before the student devotes himself to the study of the logical "instrument".

To sum up, Andronicus undoubtedly knew an *Organon* (if he did not himself invent it),[30] and he may even have assumed the concept of and used the word ὄργανον to ground his defence of the pedagogical priority of logic.[31] It is nevertheless not credible that Andronicus was the first to use such a concept in this context since the doxographic section of Diogenes Laertius' notice on Aristotle, which is usually deemed to come from an early Hellenistic source and therefore to predate him, expressly states that logic is an instrument and not a part of philosophy.[32]

Among the authors whose texts on this subject we know directly, Alexander of Aphrodisias, in the second to third century AD, is the first to expressly spell out this idea and to set forth the principle according to which logic, by virtue of having the purpose of contributing "to the discovery and construction of other things",[33] must be understood as an instrument of science.[34] By the time of the Alexandrian commentary, from the fifth century on, this thesis is already perfectly assimilated and is simply assumed, regardless of how each commentator presents and justifies it.[35] With a twist though, for Ammonius, the founder of this exegetical school, considers logic to be both an instrument *and* a part of philosophy: an instrument when considered formally and abstractly, a part when applied to a particular content. This view, which became prevalent in the later commentary within the school (and is also present in Boethius),[36] may have originally come from Proclus, who had been Ammonius' teacher in Athens.[37] From the instrumental character of logic, they too justify the priority given to it in the ordering of Aristotle's treatises and in the recommended succession for their reading.[38] However, they generally recognise the

importance of some preliminary moral education, for, as Simplicius puts it, "instruments belong to the category of intermediary things, and it is possible to use them either well or badly, as is illustrated by the majority of Sophists and rhetoricians";[39] so, to avoid circularity, this moral education should be of a pre-philosophical nature, "through unwritten habituation and non-technical exhortations, which rectify our characters by means both written and unwritten".[40]

It is a particularly telling sign of the deep and long-lasting influence exerted by the Aristotelian reception we have been following that the medieval manuscripts all preserve the priority of the *Organon* within the Aristotelian corpus, a habit that has lasted since the invention of the printing press until our days.

3.   *Composition of the* Organon

Let us now turn to the internal composition of the *Organon*. We are already aware that this was not the work of Aristotle himself. How was it that it came to acquire the stable content that is today its own? The story has many gaps, but it may be fairly (and to some extent conjecturally) reconstructed as follows.[41]

To all appearances, upon his death, Aristotle left the gigantic work he had written in a state substantially different from that in which we now have it. This original state is hinted at by two of the three ancient catalogues of Aristotle's writings we possess – namely, those preserved by Diogenes Laertius (third century AD) and by Hesychius of Miletus (sixth century AD), whose ultimate common source probably dates back to the third century BC.[42] In fact, these two catalogues testify to what appears to be the independent existence of what we now know as parts of our modern treatises (books or collections of books), sometimes, but not always, alongside the complete treatises themselves.[43] For instance, Moraux, in his seminal study on the ancient lists of Aristotle's works, records at least nine partial editions of the *Topics* with different titles,[44] in addition to the complete treatise itself, probably under two different designations.[45] And the examples could be multiplied, using, for instance, the case of the *Physics*, the *Metaphysics*, the *Rhetoric*, etc.

On the other hand, within the logical section of the catalogues, titles that tell us nothing today proliferate,[46] and the six traditional works of our *Organon* appear scattered and in unexpected and somewhat incongruous places. Thus, in Diogenes' catalogue, the *Categories* and *De Interpretatione* stand together, but out of context with the others, namely, in places 141–2, relegated to the distant section of collections, between a collection of laws in four books and that of the constitutions of 158 city-states. The other four can be found in the logical section, but with numerous titles in between: the two *Analytics* are in positions 49–50, the *Topics* seems to appear under number 55 and perhaps under number 52, and the *Sophistical Refutations* occurs in position 27 (if it is actually this treatise that is referred to by the title Περὶ ἐριστικῶν, in two books).

On the contrary, in the third catalogue, the one by Ptolemy al-Garib (sometime between the first and the third century AD), bizarre titles and titles seemingly corresponding to parts of larger treatises are almost entirely absent, and the order of the logical corpus is already practically that of the modern *Organon*. The only

difference concerns the *Topics* placement between the *Prior* and the *Posterior Analytics*, facilitated by the fact that only the former is there entitled *Analytics*, the latter appearing under the title *Apodictics*.

This discrepancy between the two groups of ancient catalogues can only be accounted for by the fact that something happened between the time when the archetypes of Diogenes' and Hesychius' were composed and the time of the source or sources that Ptolemy used to compose his own. Someone must have interfered during this time interval in such a way as to cause this palpable change in the state of the received corpus. Tradition points to Andronicus of Rhodes. Porphyry's testimony according to which Andronicus "divided the works of Aristotle and Theophrastus into treatises (πραγματείας), collecting related material into the same place",[47] is a particular strong point for this historical identification since the disappearance of the partial versions and the massive arrival on the scene of the treatises that are now part of the corpus, particularly, but not only, in what concerns the logical works, is precisely one of the distinguishing features of Ptolemy's catalogue in comparison to its earlier counterparts.[48]

As we saw earlier, it was probably also Andronicus who for the first time put together five out of the six treatises of our *Organon*, thus constituting its aboriginal version. These were joined sometime later by the *De Interpretatione*, which he considered spurious. This *Organon* with six treatises – the short *Organon*, as it is known, and which is the one we have today – was Alexander's favourite, a fact which surely contributed to its historical success.

However, antiquity knew of other hypotheses for the composition of the *Organon*, the Neoplatonic school of Alexandria having been particularly prolific in testing them.[49] Ammonius did not innovate on this matter, remaining faithful to Alexander's preference for the short *Organon*.[50] But Simplicius made another choice, by adding the *Rhetoric* to the six treatises already collected.[51] This was a perfectly sensible and justifiable choice, from an Aristotelian viewpoint. On the one hand, Aristotle frequently relates rhetoric to dialectics and logic in general, both in the *Rhetoric* itself and in other treatises.[52] On the other hand, although the distinction between demonstrative, dialectical and eristic syllogisms – on which since Alexander the preference for the short *Organon* is mainly based[53] – is characteristically Aristotelian,[54] it is no less certain that Aristotle also speaks of rhetorical syllogisms in his logical treatises,[55] as well as in the *Rhetoric*,[56] whose syllogistic form he even explains in the *Prior Analytics*.[57] Moreover, the addition of rhetoric to the cycle of logical studies adopted by Simplicius had reputable antecedents. Clearly, it had a distant Stoic pedigree, since the Stoics famously divided logic into dialectics and rhetoric.[58] However, one need not go as far back in time or as far away from the Aristotelian tradition as ancient Stoicism to find sources that might have more directly inspired Simplicius. In Middle-Platonic times, authors who welcomed Aristotle as one of their predecessors provide grounds for a more generous conception of logic's scope, such as the one underlying Simplicius' choice. One of these authors is Alcinous (second century AD). In his division of philosophy, three major sections are distinguished (theoretical, practical, and dialectical), in the last of which the part concerning syllogism enumerates apodictic syllogisms, dialectical syllogisms,

sophisms, *and rhetorical syllogisms* (or enthymemes).[59] A similar quadripartite classification of syllogisms, also including the rhetorical syllogisms, more or less contemporary to that of Alcinous, is found in Galen.[60] Converted into terms of the organisation of Aristotle's works, the conception of the general scope of logic shared by these two authors matches Simplicius' *Organon* encompassing seven parts, among which is the *Rhetoric*.

Gourinat calls this *Organon* "semi-long" to distinguish it from the one proposed by the later Alexandrian commentators (Olympiodorus and Elias), which is known as the "long *Organon*", insofar as an eighth treatise, the *Poetics*, is added to the seven treatises already recognised by Simplicius.[61] Elias gives two ingenious explanations for this choice, the first of which is partially similar to that given by his predecessors within the school for opting for either the short *Organon* or the semi-long one. The first explanation is that logic has three divisions, one that precedes demonstration (developed in the *Categories*, *De Interpretatione*, and *Prior Analytics*), another that concerns demonstration itself (studied by the *Posterior Analytics*), and a third that deals with what "poses as" (ὑποδύεται) or imitates demonstration, which has various forms, examined by the *Topics*, the *Sophistical Refutations*, the *Rhetoric*, and, he adds, the *Poetics*. The second explanation, which additionally gives partial support to the previous one, is that there are, according to Elias, five types of syllogism, namely, the demonstrative, the dialectical, the rhetorical, the sophistical, and the poetic. The demonstrative syllogism has completely true premises; the poetic has completely false premises; the others three types of syllogism have premises some of which are true and some of which are false: if more true than false, then the syllogism is dialectical; if more false than true, the syllogism is sophistical; if equally true and false, the syllogism is rhetorical. This latter explanation, and therefore the former, does not appear to have any grounds in Aristotle's texts. The most that could be said (and it is very little) is that one can find in these texts some sporadic approximations between the *Rhetoric* and the *Poetics*.[62]

The conclusion is, therefore, that at the end of antiquity Aristotle's *Organon* consisted of eight treatises, namely, *Categories*, *De Interpretatione*, *Prior Analytics*, *Posterior Analytics*, *Topics*, *Sophistical Refutations*, *Rhetoric*, and *Poetics* (already in this order – to which we will turn right away).[63] Curiously enough though, all of the *Organon*'s earliest manuscripts already contain the short version.[64]

4.   Order of the Organon

The internal order that we find today in the *Organon* seems to have been fixed by the Alexandrian authors, where we find it for the first time explicitly assumed. However, between at least Andronicus, in the first century BC, and the time of Ammonius, in the fifth century AD, several alternative orderings may have been tried. One of them, by the Peripatetic philosopher Adrastus of Aphrodisias (second century AD), is well-known. According to the testimony of the commentators, in Adrastus' lost work *On the Order of Aristotle's Treatises* (Περὶ τῆς τάξεως τῶν Ἀριστοτέλους συγγραμμάγτων), he argued that the *Topics* should come right after the *Categories*,[65] which is why he presumably attributed the title Πρὸ τῶν τοπικῶν

("before the *Topics*") or Πρὸ τῶν τόπων ("before the [common] places") to the latter treatise.[66] In his testimony, Simplicius does not state outright that Adrastus gave it this title as a result of his decision of ordering the treatise immediately before the *Topics*, but, given the context in which it is set, which has precisely to do with the different titles given to the treatise in antiquity (in the case, Πρὸ τῶν τοπικῶν), this is a fair assumption, which seems moreover confirmed by Ammonius' reference to this issue.

The motivation behind Adrastus' opinion regarding the order of these two treatises is described by Simplicius as follows:

> Knowledge of simple words, as provided by the book of the *Categories,* must at any rate come first. Before proceeding to the demonstrative method, however, and the syllogisms and premises which necessarily precede it, he [Aristotle] transmits to us the method which reasons syllogistically from widely-held and plausible beliefs. . . . For if we must proceed from the widely-held to the demonstrative, and from the plausible to the unconditionally true, then, Adrastus would say, it is right that the study of the *Topics* should precede the study both of demonstration and of those matters which are necessarily taken up before demonstration.[67]

So, as Kupreeva puts it, "according to Simplicius, Adrastus ordered the logical corpus by increasing certainty: from the mostly descriptive *Categories* and the *Topics* which operates with dialectical reasoning to the rigorous theories of demonstration and syllogism in the *Analytics*".[68]

However, this ordering led to a few dilemmas. To begin with, as to where the *Sophistical Refutations* should be placed: should it be put right after the *Topics*, as the close relationship between these two works recommends (many even go as far as to consider that the former is no more than the ninth book of the latter), or should it be located at the end of the whole cycle, as its particular subject matter as well as its concluding remarks, to which we have already referred, seem to favour? Secondly, this ordering breaks the connection that seems natural between the *Categories* and the *De Interpretatione*, insofar as these treatises can both be seen as introductory to the treatment of formal logic and the theory of demonstration that Aristotle carries out in the *Analytics*, and which, in any case, they neither develop nor presuppose. Should this natural connection be simply ignored? Adrastus' own solution seems to have involved sacrificing the link between the *Categories* and the *De Interpretatione*, by adopting the following succession: Cat. → Top. → SE → Int. → APr. → APo.[69] The solution adopted in Ptolemy's catalogue is, as we have seen, informed by the opposite decision, since it opts instead for the succession: Cat. → Int. → APr. → Top. → APo. → SE. We ignore what decision Andronicus had already taken in this matter, if any, but he had in any case an easier task since he did not recognise the authenticity of the *De Interpretatione*.

In this context, the solution adopted by the Alexandrians, which accepted both the sequence *Categories*/*De Interpretatione* and the sequence *Topics*/*Sophistical Refutations* and rejected only the idea that the *Categories* should be seen as some

kind of prologue to the *Topics*, had particularly good conditions for success. And success it had, as we can witness today, considering that it became the canonical ordering of the treatises within the *Organon*.

The suggestive wording of Ptolemy's catalogue when introducing the *Categories* ("his book known as *Categories*, *which is the first book of logic*, one book") and the *De Interpretatione* ("his book known as *Perihermeneias*, *which is the second*, one book") implies that at least the succession of these two books and their placing at the beginning of the logical corpus was already accepted by some scholars long before the Alexandrians, sometime between Andronicus, who did not acknowledge the latter treatise as a legitimate member of the set, and Ptolemy's time, which, according to Rashed, can be tentatively dated not later than the third century AD.[70] As to the priority of the *Categories* within the whole logical corpus, everything suggests it was the work of Andronicus.[71] It is worth noting that if, by any chance, the interpolation of the *Topics* between the *Prior* and the *Posterior Analytics* in Ptolemy's catalogue were to be shown to have resulted from an accident of transmission, as, for instance, a copyist's error, having occurred somewhere along the Syriac or Arabic receptions of the text, then the complete cycle itself would already appear, in its present order, in this catalogue.

The Alexandrians, however, based this ordering on a philosophical and pedagogical justification that made it very attractive. On the one hand, it allowed the treatises to be arranged in a logical order, from the simple to the complex and from the most general to the most particular. So you would start with "simple terms", in the *Categories*, then you would move on to propositions, in the *De Interpretatione*, and finally you would arrive to syllogisms, in the *Prior Analytics*; once there, the various types of syllogism could be studied: apodictic in the *Posterior Analytics*, dialectic in the *Topics*, eristic in the *Sophistical Refutations*, and so on (if any other types of syllogism were recognised). On the other hand, the ordering was in line with the organic conception they had of Aristotle's logical project: the centre of the *Organon* was, for them, occupied by the *Posterior Analytics*, where the study of "the method of philosophy", that is, demonstration, is carried out; the other treatises were arranged according to how they relate to this centre, either leading to it or departing from it. The former treatises deal with what is presupposed in the demonstration (namely, its logical structure, that is, the syllogism; the constituent parts of syllogisms, which are propositions; and the constituent parts of these, which are terms – respectively dealt with in the *Prior Analytics*, *De Interpretatione*, and *Categories*). The latter concern methods "auxiliary" to demonstration, as Philoponus neutrally describes them, or which have only the "appearance of demonstration", as most of the commentators preferred to depict them (and should therefore be avoided, some of them add), which are studied by the remaining treatises of the *Organon*. So, basically, with the centre duly fixed, they simply went backwards to the simplest and most primitive elements presupposed by it, arriving at the *Categories*, and then forwards, following the "imitations of the method", as many as each of them thought were represented in Aristotle's work, thus ultimately arriving either at the *Sophistical Refutations*, the *Rhetoric*, or the *Poetics*.[72]

It should be recognised, however, that scattered and occasional references by Aristotle himself seem already to point in the direction of this ordering. Thus, the sequence in which he indicates the various types of syllogism at the beginning of the *Topics*, after having recalled the definition of syllogism given in the *Prior Analytics*,[73] prefigures the succession of the last four treatises of our *Organon*, from this treatise onwards. On the other hand, the beginning of the *Prior Analytics* and the end of the *Posterior* seem to have been written to draw attention to the fact that they make up a single inquiry, on syllogism and demonstration, pursued in that order.[74] Finally, as we noted earlier, the final words of the *Sophistical Refutations* are consistent with the closing of a cycle – which, if applied to the whole of Aristotle's logical treatises, would favour not only its current order, which was already the Alexandrian, but also likely its current content, i.e. the short *Organon*.

5.   *Authenticity, Title, and Chronology of the Treatises in the* Organon

To conclude, a few words on the authenticity and title of the treatises that compose this *Organon*, as well as on their relative and absolute chronology.

The authenticity of the treatises in the short *Organon* was never put into question in antiquity, with the exception of the *De Interpretatione*, whose reference, in the opening lines, to the *On the Soul* Andronicus took to be inaccurate and unfounded, leading him, as we already know, to athetising the whole treatise.[75] He also considered the *Postpredicaments* to be misplaced at the end of the *Categories*, but this does not necessarily imply that he doubted or refused the authenticity of the text.[76] According to the solitary testimony of Olympiodorus, the authenticity of the *Categories* had been under attack as well;[77] Ammonius, however, maintains that "everyone agrees that the treatise is a genuine work by the philosopher".[78] In modern times, only the authenticity of the *Categories* was seriously questioned, and even several authors who accept it have consistently suspected that the *Postpredicaments*, its traditional final six chapters, did not come from the hand of Aristotle.[79]

The titles of Aristotle works were not officially given by him, following the common practise at his time, although, in some cases, we can find him using preferred expressions to refer to them. In general, titles of scientific and scholarly writings such as Aristotle's came to be adopted thanks to consolidated common usage, and, unless the author himself gave any indications on the subject, normally originated in the habit of referring to the work in question either by some expressions occurring in the incipit, or by what was more or less consensually considered for a relatively long period of time to be its subject matter. The six treatises' established titles predominantly follow Aristotle's own usages, though, as we will shortly see, in one case the title comes directly from the incipit, and in another its origin remains rather mysterious.

Antiquity knew of several different titles attributed to the *Categories*. Besides this very title, the commentators list the following:

- Περὶ τῶν κατηγοριῶν (*On the Categories*);[80]
- Δέκα κατηγορίας or Κατηγορίαι δέκα (*The Ten Categories*);[81]

- Περὶ τῶν δέκα γενῶν (*On the Ten Genera*);[82]
- Περὶ τῶν γενῶν τοῦ ὄντος (*On the Genera of Being*);[83]
- Περὶ τῶν δέκα γενῶν τοῦ ὄντος (*On the Ten Genera of Being*);[84]
- Πρὸ τῶν τοπικῶν or Πρὸ τῶν τοπῶν (*Before the Topics*).[85]

We know very little about the origin of these titles. Elias and the anonymous scho-liast make some less than credible assignments, even if one of them is histori-cally well-founded, namely, the attribution of Περὶ τῶν γενῶν τοῦ ὄντος (Elias) or Περὶ τῶν δέκα γενῶν τοῦ ὄντος (scholiast) to Plotinus.[86] As for the title Πρὸ τῶν τοπικῶν or Πρὸ τῶν τοπῶν, we already know that it became famous (or infamous) due to its use by Adrastus in the framework of his ordering of Aristotle's logical treatises. The anonymous scholiast attributes to him the very authorship of the designation.[87] This is hard to believe, though, since Simplicius, in a testimony we have quoted before,[88] says that Andronicus rejected the section of the *Categories* known as the *Postpredicaments* because he considered it to be a late addition made by those who had titled the treatise Πρὸ τῶν τόπων. This fact shows that such des-ignation was already known as an alternative title in the first century BC, about two centuries before Adrastus. So to accommodate all the testimonies on this subject without contradicting Simplicius', the reference of this alternative title to Adrastus made by the other commentators must be understood as the revival of an earlier attribution – a particularly authoritative and influential one, which strongly and enduringly linked the two together in people's minds. The most reasonable line of thought here is thus to suppose that the title Πρὸ τῶν τόπων/τοπικῶν was attributed to our *Categories* somewhere in Hellenistic times, having then fallen into disuse (perhaps through the intervention of Andronicus, as Bodéüs would have it) and later recovered by Adrastus, only to be then again defeated, and definitively, by the title by which we know it today. Note, moreover, that Olympiodorus suggests that this alternative title had been popular once, which is consistent with a disseminated and at least relatively prolonged usage of it.[89]

   As to the history of these several titles, the only true rivalry that appears to have ever existed is the one between the titles *Categories* and *Before the Topics*. And with good reason too, since these were allied to distinct, well-defined choices regarding the conception of the *Organon* and its internal ordering. As we have al-ready seen, Andronicus rejected the title *Before the Topics* while defending the title *Categories*, which may have even been his own invention.[90] For his part, Alexander of Aphrodisias generally refers to the *Categories* by this name, although he some-times also refers to it as *On the Ten Categories*;[91] and in Galen the latter title also occurs.[92] Porphyry, in his extant commentary on the treatise, undertakes a strenu-ous defence of the title *Categories*,[93] but he was convinced that this title came from Aristotle himself, as in general were the subsequent Neoplatonic commentators of the treatise.[94] By the time of later scholars within this exegetical tradition, the title was completely established as the canonical one.[95]

   The title Περὶ ἑρμενείας is our mystery: it does not come from the incipit of the treatise, and Aristotle never refers to it by this designation. Someone must have given it at some point in time and the designation stuck. However, the title

is ancient, since it appears in Diogenes' and Hesychius' catalogues (even if in implausible places), and Andronicus seems to have discussed it already under this designation.[96] Sedley makes two interesting suggestions in this regard. The first is that the title Περὶ ἑρμενείας should probably be understood as "On language", for which he gives a matching occurrence of the word ἑρμενεία in this sense in the *De anima*.[97] The second is that the original title, as intended by Aristotle himself, might have been *On Affirmation and Negation*, for which he argues with the parallel titles of Theophrastus' logical works corresponding to the ones in Aristotle's short *Organon* (all identical but in this case, where Περὶ καταφάσεως καὶ ἀποφάσεως seems to have been the correlative title).[98] Both suggestions, whose roots can be found in nineteenth century German scholarship,[99] are highly speculative, but clearly worthy of reflection. Aubenque holds a different perspective. He thinks that the title Περὶ ἑρμενείας does justice to and is the right one for the treatise, understood in the traditional sense attached to the word ἑρμενεία, in light of the symbolic nature of language that Aristotle describes in the treatise's first chapter, which involves processes of interpretation and translation. So, for all we know, this title could even have been Aristotle's own choice after all.[100] Plainly, modern controversy around the title does not help to clear the mystery up.

With regard to the *Prior* and *Posterior Analytics*, the situation is just the opposite. Aristotle often refers indistinctly to either of these treatises by the common plural τὰ ἀναλυτικά.[101] The word "analysis" is used in several senses by Aristotle, and he never explains which of them is the pertinent one for this designation. However, the ancient commentators, who attached much importance to this question, unanimously held, at least since Alexander, that, in general, all analysis consists in the reduction of a compound to that of which it is composed, the particular sense applicable here being the reduction of all arguments "to the three figures of the syllogism", that is, to their logical form – as is in fact done in the *Analytics*, specifically in the collection of books which came to be called *Prior*.[102] The distinction between the two *Analytics* as τῶν προτέρων (*analytica priora*) and τῶν ὑστέρων (*analytica posteriora*) is not attested in the Aristotelian corpus. However, it is certainly very old since it appears in the two catalogues of Aristotle's works that come from an earlier original (those of Diogenes and Hesychius), probably, again, from the third century BE.[103] This differentiation is, according to the commentators from Alexander on, due to the fact that the former deal with the syllogism in general while the latter deal with a particular type of syllogism, the demonstrative syllogism, so that the former should be studied before the latter.[104]

Interestingly enough, Aristotle refers on occasion to our *Prior Analytics* as the books *On Syllogism*,[105] and in one passage at least – a particularly important one since it occurs at the end of the investigation undertaken in the *two* treatises – it almost seems that, in his mind, our *Posterior Analytics* perhaps deserved rather the title *On Demonstration*.[106] Suggestively, these two titles survived as alternative titles until relatively late in antiquity. We have already seen that it is under a title close to the latter (*Apodictics*) that the *Posterior Analytics* appear in Ptolemy's catalogue. Later still, the same alternate use of the latter two titles is suggested by a passage in Ammonius' commentary on the *Categories*: "the same argument and

order [applies] all the way up to the *Posterior Analytics,* that is, the *Apodictics*".[107] However, Galen, who himself seems to favour the alternative titles, remarks that most people of his time referred to the treatise on syllogism as the *Prior Analytics* and the treatise on demonstration as the *Posterior Analytics*.[108] In fact, the modern titles can be found, for instance, in Aspasius' commentary on the *Nicomachean Ethics*,[109] as well as in the anonymous commentary on books II–V of the same work,[110] and the same is the case throughout Alexander's commentaries.[111]

Regarding the *Topics* – a designation that Aristotle himself used in cross-references[112] – Brunschwig provides an excellent synthesis of its origin:

> ["Topics"] is derived from the term τόπος ("place"), which . . . he uses to designate each of the argumentation schemes which should allow the dialectician to argue for or against a given proposition, and of which the *Topics* are, for the most part, a long enumeration: the term seems to be borrowed from the language of mnemonics, which recommended to its followers a kind of mental spatialization of the material to be memorized.[113]

Finally, the *Sophistical Refutations* (to which Aristotle refers at least once as if it were a part of the *Topics*)[114] owes its title to the incipit of the treatise.[115] However, there is reason to believe that Aristotle would also be willing to adopt the title *On Eristic Arguments* (Περὶ ἐριστικῶν) since this is how he refers to it later in the treatise itself, as well as elsewhere.[116] Moreover, it is likely that this title was actually assigned at one time to the treatise since Diogenes' catalogue mentions a Περὶ ἐριστικῶν, in two books, in number 27, which is generally considered to refer to this treatise.[117] It is therefore possible that, for a period, these two alternative titles coexisted, although the one that has lasted until our days was certainly the dominant and most common already in antiquity.

As to the chronology of the logical treatises, in spite of the attempts that have been made since Jaeger's seminal 1923 work on the evolution of Aristotle's thought to establish the date of at least his major works, prudence advises us to remain sceptical about the chances of ever being able to satisfactorily reach this goal. Aristotle's extant corpus is composed of scholarly treatises, written for the inner circle of his disciples and associates; as such, they were repeatedly revised, emended, and added to over time. So the best that we can expect, to expand Barnes' apt remarks on the *Analytics* to the whole of Aristotle's works, is to be able to conclude that this particular passage in this particular work is (probably) earlier or later than that particular passage in that particular work.[118] The strongest indication of the ultimate futility of chronological endeavours applied to the entire Aristotelian corpus is given by the fact that those already made largely contradict each other. Considering the particular nature of Aristotle's treatises, they all are, in fact, doomed to fail.

Concerning the logical corpus, there are, however, some aspects on which most scholars agree – namely, that the *Categories* and books II–VII of the *Topics* are early, probably dating from the beginning of Aristotle's autonomous career as a philosopher inside the walls of the Academy.[119] On the contrary, there is a prevalent tendency to consider the *De Interpretatione* a more recent work, with some

scholars dating it even to the last decade of Aristotle's life.[120] On the *Analytics*, authors diverge, defending almost every conceivable position. Ross and Düring, for example, maintain that both treatises are early;[121] Nuyens considers the *Prior Analytics* to be early but the *Posterior Analytics* late;[122] conversely, for Solmsen, it is the *Posterior Analytics* that is early, while the *Prior Analytics* is late.[123] Only the thesis of a late date for both works does not seem to have attracted any advocates. This being the case (and there is a big "if" here), it could be said that, within the logical corpus, the *Categories* and the central books of the *Topics* were the first works that began to be written and the *De Interpretatione* the last, with the *Analytics* somewhere in between.

The relative chronology within the *Organon*, as far as a sort of majority consensus can be established, corresponds with this general picture, except for that of the *Prior* and *Posterior Analytics*, which was a hot issue for contemporary criticism for much of the last century. Traditionally, it was accepted that the canonical sequence of the two treatises corresponded to the order of their actual writing.[124] This view was challenged by Solmsen, in his influential 1929 work on the evolution of Aristotelian logic and rhetoric (i.e. on the internal evolution of Simplicius' *Organon*, one might say), where he argued that the *Prior Analytics* was the last work of this corpus to be composed.[125] A polemic ensued, with ardent contention from both sides – and, as could be expected, with no conclusion at the end. All in all, the wisest position on this issue is probably Barnes', when he notes, in a passage already referred to, that

> the chronological question, if coarsely posed, assumes that Aristotle either wrote first the *Prior* and then the *Posterior Analytics*, or else vice versa; and this assumption is in all probability false. The two works, as we have them today, represent the latest stage in an uncompleted series of revisions: two sets of notes were worked at, added to, and emended over a period of years; and in the course of their long careers they enjoyed the benefits of a mutual influence. It is plainly silly to say that one treatise was "written" before or after the other. We can at best hope to show that passage X in treatise A was written, in its present form, after passage Y in treatise B.[126]

This is also the view of Brunschwig, who claims that, as they stand today, neither of the two treatises can be regarded as entirely prior or entirely posterior to the other.[127]

In conclusion, if caution is generally advisable in any course of action, it most certainly is concerning the question of the chronology of Aristotle's works. Thus, in this matter, it was perhaps Randall who came closest to the truth, when he remarked as follows:

> Jaeger's brilliant genetic hypothesis has revolutionized Aristotelian studies. For a generation it has indeed led to the expenditure of much time and effort in trying to determine just when Aristotle wrote a particular passage or book, effort that many scholars are beginning to suspect might well have been better spent in analysing what he said in it.[128]

II.   Contents of This Volume

Marco Zingano's contribution, "Aristotle's *Categories*: Ontology without Hylomorphism?", is concerned with the meaning of the ten categories listed by Aristotle in Chapter 4 of that work: substance, quantity, relatives, quality, where, when, position, having, doing, and being affected. Avoiding any mention of the distinction between matter and form (which takes central stage in the *Physics* and the *Metaphysics*), Zingano tries to understand the categories as being at the same time the ultimate predicates, the most general concepts, and the highest genera of being. Focusing primarily on Chapters 5 to 8 of the *Categories*, he uncovers their common structure, which includes a first part, where the kinds of being under the category are enumerated, and a second part, where the basic traits shared by every member of the category are examined. Those basic traits answer, for each category *X*, three main questions: Do members of *X* have contraries? Do they admit degrees? What is their *proprium*? On Zingano's view, contrariety, gradability, and the *proprium* are very important properties in Aristotle's ontology. They work as the basic tools with which one can locate everything there is in one of the ten categories, thus "charting" the realm of sensible being (leaving non-sensible substances out of the picture). In the received text of the *Categories* the project is obviously incomplete, and Zingano makes some conjectures about the location and possible content of the lacunas.

Katerina Ierodiakonou's essay, "Are the Same Thoughts Shared by All People?", focus on Aristotle's famous statement, in the first chapter of *De Interpretatione* (16a3–9), that, whereas written marks and spoken sounds are not the same for all people, affections of the soul and actual things are indeed the same for all. Many readers of those lines have identified affections of the soul with thoughts and wondered why does Aristotle claim that all people have the same thoughts. Ierodiakonou considers how the ancient commentators have interpreted that claim. As early as the second century CE, the Peripatetic commentator Aspasius pointed out the pervasiveness of moral disagreement among humans as problematic for such a claim, suggesting that Aristotle would not extend it to thoughts involving abstract concepts like justice, but was referring only to affections that result from sense perceptions. After reviewing the views of several Greek, Latin and Byzantine commentators, Ierodiakonou chooses Alexander of Aphrodisias (II-III centuries CE) as her main target. Though admitting a high degree of uncertainty, she conjectures that Alexander followed Aspasius' footsteps and drew a distinction between affections of the soul and thoughts, allowing him to maintain that it is only the former that are shared by all people. Relying on Alexander's distinction between forms and universals, Ierodiakonou finds plausible ascribing to him a view according to which thoughts involve concepts that are dependent on each individual's intellectual capacities, insofar as they result from a process of separation of the forms of perceived things that may be idiosyncratic.

Francesco Ademollo's essay, "*De Interpretatione* 3 on Isolated Verbs", offers a detailed analysis of lines 16b19–25, where Aristotle makes some brief remarks about what a verb means when it is uttered on its own (not as part of a sentence).

That difficult passage has two parts. First, Aristotle states his view of verbs uttered in isolation. He says that they signify something (and in that respect they work as a kind of name) but do not signify "whether it is or not". Ademollo thinks that this part is relatively straightforward. He calls what an isolated verb signifies a "predicate" and explains what it does not signify as whether such a predicate holds or does not hold of something. In the second part, Aristotle provides an argument for this last claim about what an isolated verb *does not signify*, and there it is much harder to see what the argument really is. Many readers think that the argument gives a description of the signification of the copula, while assuming that every verb can be replaced by a phrase composed of the copula plus a participle. Ademollo criticises that interpretation and proposes instead that Aristotle is there using "to be" in its existential sense, giving "to exist" as a revealing example of a verb that, when standing alone, is neither true nor false, even though it signifies a certain predicate. This leads him to address the difficult question of the relation between Aristotle's understanding of that predicate and his view that the several ways of being cannot be reduced to a unique genus.

Paolo Crivelli's essay, "Truth and Formal Validity in the *Prior Analytics*", concerns the definition of syllogism given in 24b18–22, where Aristotle says that a syllogism is "a discourse in which, certain things having been posited, something different from the things laid down results of necessity due to these things being there". Crivelli discerns four conditions in the definition. According to the first two, only inferences with multiple premises and one conclusion distinct from them are syllogisms. The third condition requires that syllogisms are valid inferences, in the sense that their conclusions follow necessarily from the premises. A passage in *APr*. I 32 shows that these three conditions are not jointly sufficient, because there are inferences satisfying them all which Aristotle does not count as syllogisms. Hence, the fourth condition is crucial, and Crivelli's main aim is to understand it. Relying on Aristotle's examples of non-syllogistic inferences and on his method of rejection by counterexamples, Crivelli argues that what it introduces is a condition of formality, requiring that all inferences of the same form be also valid. Though stressing that Aristotle's conception of logical form differs in important ways from the modern conception, the chapter ends up confirming his place as the first one to recognise that logic is formal.

Ricardo Santos' essay, "Aristotle on Negative Terms and Obversion", concerns a possible extension of the assertoric syllogistic that Aristotle seems to have considered at a certain point in the development of his logical thinking, of which Chapter 10 of *De Interpretatione* and Chapter I 46 of the *Prior Analytics* are witnesses. The extended system would make room for the negation of terms (in subject or predicate positions) besides standard copula negation. Santos asks how Aristotle understands negative terms and their contribution to the truth conditions of categorical propositions. He wants to use this question as a test case to help adjudicating the dispute between the main semantic approaches that interpreters have applied to the syllogistic, namely, the set-theoretic and the mereological approaches. An important constraint of the enterprise is that a satisfactory answer must accord with Aristotle's view that obverting an affirmative proposition is valid, but obverting a

negation is not. Santos criticises the dominant interpretation according to which Aristotle understands negative terms in a way that, similarly to privatives and contraries, can be modelled set-theoretically in terms of *restricted* complements. He also shows that the mereological approach faces serious difficulties in trying to accommodate Aristotle's views on obversion. As an alternative, Santos defends the simple view that a term like "not-just" is understood as applying to everything that is not just. To explain Aristotle's asymmetric judgements about obversion, he argues that the simple view should be coupled with a semantics in which negations have no existential import, while affirmations have it. The chapter discusses the extent to which those views are supported by the relevant texts.

Pierre-Marie Morel's essay, "Proof and Demonstration: the Meaning of δεικνύναι in the *Posterior Analytics*", concerns a question that translators of that work need to confront: if ἀπόδειξις and ἀποδεικνύναι are the technical terms for "demonstration" and "to demonstrate", how should one render the numerous and pretty varied uses of the verb δεικνύναι? The chapter surveys all the occurrences and argues that the verb covers a wide range of meanings. Sometimes it is synonymous with ἀποδεικνύναι, indicating a scientific deduction in the strict sense. In other occurrences, it has a more general sense, subsuming "demonstration" as a special case and conveying a looser notion of showing that something is the case by way of some kind of deductive inference. However, still in other cases, it is applied to non-deductive inferences, as when induction is presented as a way of "*showing* the universal" (71a8: δεικνύντες τὸ καθόλου). In its more relaxed uses, δεικνύναι can even be used for incorrect and unsuccessful attempts at proving something. Morel's essay shows that δεικνύναι, despite its meaning fluctuations, plays an important role in Aristotle's efforts to build a rich logical and epistemological vocabulary.

Pierre Pellegrin's essay, "Causal Explanation and Demonstration in *Posterior Analytics* II 11", concerns the relation between Aristotle's doctrine of the four kinds of cause and his views on demonstration and the demonstrative syllogism. For Aristotle, in every scientific inquiry, the search for the cause can be seen as a search for the middle term of a demonstrative syllogism. In *APo*. II 2, 90a6–7, he states that "the cause is the middle term", and in Chapter II 11 he develops that idea by considering each kind of cause. However, that chapter is full of difficulties and Pellegrin addresses many of them, starting with the curious fact of having the material cause exemplified by a geometrical proof. Pellegrin gives a reconstruction of the proof and of its recasting in the form of a syllogism, the middle term of which stands to its conclusion as a piece of marble stands to the statue that is made of it. In the syllogism given as example for the workings of the final cause, it seems that the final cause is represented by the major term, not by the middle one. Pellegrin accepts this appearance and explains it by describing teleological explanations as "second-order explanations", which require the cooperation of an efficient cause expressed by the middle term. In the last part of the chapter, he gives an explanation for the absence of a dedicated example of the formal cause, arguing that the causal middle term works always also as a formal cause.

David Bronstein and Breno Zuppolini's contribution, "Aristotle on Multiple Demonstration: A Reading of *Posterior Analytics* II 17–8", concerns the question of whether the same demonstrable attribute can be explained by more than one cause (of the same kind). Aristotle's discussion of that question in *APo.* II 17–8 has often been accused of inconsistency. Through a careful, line by line, analysis of those chapters, Bronstein and Zuppolini build an interpretation that manages to put all pieces together in a coherent view. The key to the interpretation is the distinction of different versions of the question, which receive different but compatible answers. Clearly, Aristotle favours a monistic view according to which, if P is a demonstrable attribute of a genus G, there is a unique causal middle term M explaining why G is P. (At various places he claims that M is the definition of P, i.e. that it gives an account of what being P is.) Also, if S1 and S2 are subordinate species of G, Aristotle thinks that there is a unique cause of their being P, which is just G itself. However, there are other special cases regarding which Aristotle gives a pluralistic answer. One is the case of homonymy, where what appears to be the same attribute turns out to be different attributes with the same name. A more interesting case is that in which S is a species of G and both have a demonstrable attribute P. Bronstein and Zuppolini argue that Aristotle holds that the explanation of why each of them is P must be different. They extract from the text the following example: fig trees shed their leaves because they are broad-leafed plants, which shed their leaves because their sap coagulates; and while it is true that coagulation of sap is responsible for leaf-shedding also in fig trees (as in other broad-leafed plants), it is not the appropriate cause of their doing so. At the end of the chapter they try to make good sense of this rejection of demonstrative status to a syllogism that results from a substitution of coextensive attributes.

Colin Guthrie King's essay, "Linguistic Theory and Dialectical Rules in the *Topics*", concerns the nature of the dialectical rules given by Aristotle in the *Topics*. One should bear in mind that, in that work, Aristotle assumes on the part of the reader a degree of familiarity with a specific type of argumentative practice for which he is trying to provide methodological instructions. It is a rather codified practice, a kind of game with conventions and well-defined rules, which takes place orally between two participants, who play the roles of questioner and answerer. An argument is thus constructed by way of questions and answers: the latter provide the premises that the questioner can use to draw a conclusion. Refutation is a prominent goal of those exchanges, but other more constructive ends are also contemplated. King's main aim is to show the beginnings of a linguistic theory, with logical, semantic, and pragmatic components, underlying Aristotle's instructions for dialectical argumentation. He puts special emphasis on the pragmatic significance of the theory of predicables, trying to show how they track different types of commitments that speakers may incur and how those commitments activate different norms or standards of correctness for the utterances they produce.

Hermann Weidemann's essay, "A Trouble-Maker for Translators: the Aristotelian Phrase τὸ τί ἦν εἶναι", deals primarily with a question of translation, but one that significantly affects the interpretation of Aristotle's metaphysics. The phrase τὸ τί ἦν εἶναι, which occurs already in the *Topics* and in the *Posterior Analytics*,

is clearly meant to express the essence – understood as the complete and specific essence – of something. Aristotle says there that the τί ἦν εἶναι of something is what its definition signifies and quite often he uses that expression interchangeably with τὸ τί ἐστιν (literally, "the what [something] is"). Granting all that, Weidemann goes on to ask what the literal translation of the special phrase could be. He starts by observing that the article τό nominalises the question τί ἦν εἶναι; and that the imperfect ἦν indicates (using a Greek idiom with no equivalent in English) that the answer to that question is regarded as having already been given. He argues that the infinitive εἶναι has there an existential sense and, finally, asks what question is introduced by the interrogative pronoun τί. On the view he defends, the relevant question presupposes a close connection between essence and existence, a connection that can be stated by saying that the essence of X is something Y such that, for X, to exist just is to be Y (existing is the same as being Y). The phrase τὸ τί ἦν εἶναι would be a formula that Aristotle devised to refer to the Y in this schema. Weidemann hypothesises that the formula is an abbreviation of the expression τὸ [τὸ] τί [εἶναι] ἦν [τὸ] εἶναι, whose literal translation could be "the what-to-be-it was to-be". In the chapter, Weidemann argues against alternative interpretations, supports his hypothesis with linguistic and textual evidence, and replies to objections.

António Pedro Mesquita's essay, "How Do Differentiae Fit into Aristotle's System of Predicables?", concerns the question of what predicable should differentiae like "terrestrial" or "two-footed" be regarded as falling under. In the *Topics* I 4, Aristotle states that every predicate that may occur in a proposition is either a genus, a definition, a distinctive property or an accident. These classes of predicates became known as the "four predicables". In *Top.* I 8, the classification is shown to be a principled one, based on the two criteria of "being convertible" with the subject and "signifying the essence" of the subject. In both texts, Aristotle remarks that the differentia, being (like the genus) a proper part of the definition and not convertible with the subject, should be classified together with the genus. One may call this the "official doctrine". Strangely enough, in several other texts, Aristotle seems to deviate from it, suggesting sometimes that differentiae are distinctive properties and, more often, that they are mere qualifications. Mesquita provides interpretations of the problematic passages, aiming at reconciling them with the official doctrine. He argues that Aristotle, even when drawing attention to important similarities they have with distinctive properties and qualifications, never abandons the view of differentiae as essential properties. As Mesquita understands him, Aristotle calls differentiae qualifications only in a very special sense, namely, as essential features that demarcate a species within a genus. Though Aristotle thinks that differentiae, as a rule, extend beyond the species they belong to, in *Top.* 122b39–123a1 he admits that they may in some cases have the same extension, a concession that could be regarded as bringing them closer to distinctive properties. Mesquita argues that, even in cases of coextensiveness, there is still a difference in their mode of predication, such that no differentia is ever interpreted as an *in itself* distinctive property.

Paolo Fait's essay, "Misplaced Trust and Blind Reasoning: Aristotle on the Fallacy of Equivocation", concerns the discussion of the fallacy of equivocation in

the *Sophistical Refutations*. Calling it "the paralogism depending on homonymy", Aristotle finds its source in the fact that some words, used in dialectical arguments, have more than one meaning – something he deems inevitable, given that words are finite, whereas things are infinite in number. Aristotle gives examples of the fallacy, provides insightful analyses in the course of examining them, draws important distinctions and gives advice on how to deal with homonymy in argumentation. From those scattered materials, Fait tries to reconstruct a more unified Aristotelian account of how the fallacy works, in the form of a two-component model. In the first part of the analysis, he finds at work a principle of truth maximisation according to which each premiss in an argument should be interpreted in a way that makes it more likely true. This principle, recommending the choice of the "best" meaning in each case, favours disambiguation. However, Fait also finds evidence of a second part, guided by a principle of "blind reasoning", in which words are used and inferentially manipulated, like pebbles on an abacus, without paying much attention to their meanings. The treatment of words as mere syntactic objects, in the process of drawing conclusions, explains how shifts of meaning in the premisses can often escape notice.

Paulo Fernando Tadeu Ferreira's essay, "On the Fallacy of Accident in Aristotle's *Sophistical Refutations*", criticises one fairly common understanding ("the received view") of the fallacy of accident and offers an alternative. Two well-known examples of the fallacy are "the dog father" and "the one approaching": in the first, someone tries to deduce that the dog is your father from premisses saying that the dog is yours and it is a father; in the second, from the fact that you know Coriscus but do not know the one approaching (who happens to be Coriscus), the conclusion is drawn that you both know and not know him. Aristotle defines the fallacy of accident as occurring "when any chance thing is held to belong in the same way to the object and to its accident" (*SE* 5, 166b29–30), and Ferreira starts by applying this definition to another example, where from the premisses "Coriscus is different from Socrates" and "Socrates is a man", the conclusion "Coriscus is different from man" is drawn: he identifies *Socrates* with "the object", *man* with "its accident", while the attribute belonging to them both is *being different from Coriscus*. This attribute belongs in itself to Socrates and, because Socrates is a man, it also belongs to man, but only by accident and not "in the same way". According to the proposed analysis of the fallacy, it is crucial that a relation is present in the argument, usually embedded in the major term: it can be the relation of being different, the relation of an owner to his possession or of a knower to something known. The terms of a relation must be properly specified (according to what is essential to their being in that relation), even if many other predicates apply (accidentally) to them. Thus, being a man is accidental to Socrates when he is taken in his relation – of difference – to Coriscus; likewise, being a father is accidental to the dog when he is taken as your possession and being Coriscus is accidental to the one approaching when he is taken as the object of your knowledge. The substitution of something accidental for one of the *relata* is, on Ferreira's view, the common mistake at the origin of all examples of the fallacy of accident.

Pieter Sjoerd Hasper's contribution, "'Those Searching for Gold Dig Up a Lot of Earth' – On Contamination and Insertion in the Early Manuscript Tradition of

the *Organon*: The Case of the *Topics* and the *Sophistical Refutations*", deals with the Greek text of the two last works in the *Organon*, of which we have modern critical editions by David Ross (1958) and Jacques Brunschwig (1967, 2007). Hasper thinks there is room for improvement and what he presents here is part of work in progress aiming at a new edition. His reconstruction of the textual tradition of the two works is based on a richer collection of 17 manuscripts, together with the Latin translation by Boethius, five Arabic translations from the ninth and tenth centuries and Alexander of Aphrodisias' commentary on the *Topics*. The relations of the manuscripts with one another can be described on the basis of a "stemma" (a tree of descent) that divides them in three main groups. Hasper gives several examples of passages where the manuscript tradition has very likely resulted in insertions and changes to the text, which have spread over a more or less inclusive group of manuscripts. Since the oldest extant manuscripts are from the ninth and tenth centuries, it remains possible that some changes happened before their common ancestor and that we will never recognise them. Hasper adds three appendices: one listing and discussing proposals by previous modern editors for deleting words from the text of the *Topics* and the *Sophistical Refutations*, one on the text of the *Analytics*, and one with a new critical edition of the Greek text of Book 8 of the *Topics*.

Acknowledgements

Notes

1 See, for instance, Aetius I, Pref. 2 (= SVF II.35 = LS 26A), and Diogenes Laertius VII 30.1–7 (= SVF II.37 = LS 26B.1).
2 It could be argued that *Top*. I 14, 105b19–25, is an exception. We will turn to this text in a moment.
3 Ierodiakonou (1998: 35) reminds us that "the first occurrence of λογική referring to Aristotle's logic is found in Alexander's commentary on the *Prior Analytics*" (1.3: ἡ λογική τε καὶ συλλογιστικὴ πραγματεία).

4 See, for instance, *Metaph*. IV 3, 1005b4. We will have something more to say about this term later on, when discussing the titles of Aristotle's logical treatises (Section 5).

5 Cf. *SE* 34, 183b15–184b8.

6 See *Top*. VI 6, 145a15–6; VIII 1, 157a10–1; *Metaph*. VI 1, 1025b25; VI 1, 1026b5; XI 7, 1064a16–9; *EN* VI 2, 1139a27–8; X 8, 1178b20–1. Cf. also *Protrepticus* 6R (= 6W, 59–70D, 55–66C). In addition to these complete occurrences of the triad, there are several references to the theoretical sciences as opposed to the practical sciences (for instance, *Metaph*. II 1, 993b20–3, and *EN* X 7, 1177b1–4; but cf. *EN* I 3, 1095a5–6; II 2, 1103b27–9; VI 13, 1143b28–33; X 10, 1179a35-b2; *EE* I 5, 1216b21–5), to the theoretical sciences as opposed to the productive sciences (see *Metaph*. I 1, 982a1; IX 8, 1050a23-b6; XII 9, 1074b38–1075a5; *EE* II 1, 1219a13–8), and to the practical sciences as opposed to the productive sciences (cf. *EN* I 1, 1094a3–6; VI 2, 1139b1–4; VI 4, 1140a1–20; VI 5, 1140a31-b7; *MM* I 34,1197a3–13).

7 See *Protrepticus*, 6R; *De an*. III 4, 430a2–5; *Metaph*. I 1, 981b13–25; II 1, 993b20–3; IX 8, 1050a23-b2; *EN* I 1, 1094a3–5; VI 2, 1139a31-b5; VI 5, 1140a31-b7; X 7, 1177b1–4; *MM* I 34,1197a3–13; *EE* I 5, 1216b10–9; II 1, 1219a13–7.

8 See *APo*. I 28, 87a38-b4; and cf. *APo*. I 7, 75a38-b20; *Metaph*. III 2, 997a18–25; XI 3, 1060b31–6; XI 7, 1063b36–1064a4.

9 Respectively, I 13, 105a21–2, and I 18, 108b32.

10 See *Top*. VIII 14, 163b9–11; the translations are by Pickard-Cambridge (1984).

11 *Top*. I 11, 104b1–3 (but see the whole passage, lines 1–12).

12 Cf. *In Top*. 74.11–75.3 Wallies.

13 *Top*. I 14, 105b19–21 (followed by examples of each, lines 21–5; the example he gives here of a physical problem is the same he had given in 104b7–8 for a theoretical problem, namely, "whether the world is eternal or not").

14 Cf. *In Top*. 93.22–7 Wallies.

15 Actually, Alexander maintains that he explicitly claims it: cf. *In Top*. 74.33–75.1 Wallies.

16 See *Metaph*. IV 3, 1005b2–5.

17 See *Metaph*. IV 4, 1006a5–7; cf. *PA* I 1, 639a1–6, and *EN* I 4, 1094b23–7.

18 As we shortly see (in Section 3), antiquity witnessed other *Organa*, with partially different components.

19 This connection is particularly clear in Elias, *In Cat*. 117.17–118.31 Busse.

20 The existence of such polemic was questioned: see Tae-Soo Lee (1984: 46) (referred to by Ierodiakonou 1998: 36). More recently, Griffin (2015: 34) ascribes the very origin of the Peripatetic notion of ὄργανον to their philosophical interchange with the Stoics on the status of logic, which he then tries to reconstruct. For the Stoic's position, see, again, Aetius, I, Pref. 2 (= SVF II.35 = LS 26A), and also Diogenes Laertius VII 39–41 (= LS 26B) and Plutarch, *De Stoicorum repugnantiis* 1035a (= SVF II.42 = LS 26C). According to Sextus Empiricus, the Stoic division of the parts of philosophy into logic, physics, and ethics can already be found in Xenocrates (cf. *Math*. VII 16). This does not mean, of course, that he was already using these terms. Cicero traces the division back to Plato himself (*Acad. Post*. I.v.19), as does Aristocles of Messene (fr. 1.6–9 Chiesara); but Sextus, in the same passage, states, with his usual sharpness, that it is found in Plato only potentially.

21 The figure and editorial work of Andronicus became controversial after the publication of Barnes' influential article (1997). For a very sensible and balanced reassessment of the situation leading to "some less minimalist conclusions than Barnes' own", see Hatzimichali (2013), and also her more recent (2016). For a summary of the available data on Andronicus and his work, see, in addition to the texts already indicated, Griffin (2015: 26, 29–32, and appendix 2).

22 An argument in favour of this being the case is the fact that this is what happens in Ptolemy al-Gharib's catalogue (except, of course, that the latter contains all the six

treatises of our *Organon*). In fact, even if this catalogue is not a simple transcription or summary of Andronicus' own, as Rashed, Ptolemy's most recent editor, maintains (and inter alia the exception referred to confirms), its comparison with the two other subsisting ancient catalogues shows that it expresses a much more modern state of the corpus than those, indeed much closer to the one we have now, which is only compatible with having a post-Andronican character. We will have more to say about this later on (Section 3). On Andronicus' athetised treatises, see infra (Section 5) the remarks on the authenticity of Aristotle's logical writings.

23 Cf. Philoponus, *In Cat*. 5.18–23 Busse, and Elias, *In Cat*. 117.22–4 Busse.

24 According to the preserved text of a passage from Philoponus' commentary (quoted in note 31), Boethus was Andronicus' pupil. Rashed (2021a) has recently given reasons to at least suspend judgement on this matter.

25 *In Cat*. 5.16–8 Busse (Sirkel, Tweedale, Harris, and King's translation (2015)).

26 Cf. *In Cat*. 5.23–7 Busse. See, in the same direction, Olympiodorus, *Prol*. 8.29–9.13 Busse, developed by Elias, *In Cat*. 117.15–119.25 Busse.

27 There is a suggestion to this effect in Ammonius, *In Cat*. 5.31–6.8 Busse, and Elias expressly states it in *In Cat*. 117.24 Busse.

28 A reference by Simplicius (*In Cat*. 5.16–8 Kalbfleisch, cited in the following, in the text) can be construed in this way. And see again on this Diogenes Laertius VII 39–41 (= LS 26B).

29 Cf. *In EN* 1.2–2.13 Heylbut and especially 2.6–7, which significantly refers to Socrates' authority (the Pythagoreans are also mentioned soon after: 2.10–1).

30 As Barnes (2005: 52) claims.

31 Philoponus' justification for this defence, in the context of the passages referred to earlier, leans heavily in this direction: "But his [Boethus'] teacher, Andronicus of Rhodes, examining the question more accurately, said it was necessary to begin with the logic, which is the one concerned with demonstration. Since, then, the Philosopher used the demonstrative method in all of his treatises, we have to first master this so that we might follow more easily his other works" (*In Cat*. 5.18–23 Busse; Sirkel, Tweedale, Harris, and King's translation (2015)). The question, of course, is whether this justification was already in Andronicus himself or whether it is an explanatory assumption by Philoponus.

32 See DL V 28.5–6. The terms of the statement strongly suggest the idea of a controversy between opposite conceptions of logic.

33 *In APr*. 2.14–5 Wallies.

34 See *In APr*. 1.3–4.29 Wallies; cf. *In Top*. 74.26–75.3 Wallies.

35 Cf. Ammonius, *In Cat*. 4.28–5.4 Busse; *In APr*. 8.15–11.21 Wallies; Philoponus, *In Cat*. 3.8–21 Busse; *In APr*. 6.19–9.20 Wallies; Simplicius, *In Cat*. 4.21–6 e 14.19–25 Kalbfleisch; Olympiodorus, *Prol*. 7.24–8, 14.13–18.12 Busse; Elias, *In Cat*. 115.14–117.14 Busse.

36 Cf. *In Isag*. 140.13–143.7 Brandt-Schepss.

37 See D'Hoine (2016: 379–80).

38 Cf. Ammonius, *In Cat*. 5.31–6.8 Busse; Simplicius, *In Cat*. 5.3–6.5 Kalbfleisch; Olympiodorus, *Prol*. 8.29–9.13 Busse; Elias, *In Cat*. 117.15–119.25 Busse. Philoponus is the most circumspect and the least committed on this issue: see *In Cat*. 5.15–33 Busse.

39 *In Cat*. 5.16–8 Kalbfleisch.

40 *In Cat*. 6.1–2 Kalbfleisch (both translations by Chase (2003)).

41 In the next few paragraphs, we follow sometimes very closely parts of Mesquita (2021). The same will occur again occasionally throughout the text.

42 Diogenes counts 146 titles in his catalogue of Aristotle's writings, and Hesychius' catalogue plus the appendix lists 197. Even accounting for spurious and repeated titles, this is indeed a gigantic production: compare, for instance, with Plato.

43 Barnes disputes this interpretation. For him, ancient catalogues reflect the items existent in certain private libraries, not necessarily the state of the corpus at that time (Barnes 1997: 64–5). But it seems rather doubtful that the latter does not somehow follow from

the former. If the ancient catalogues reflect the items existing in a private library, then they testify to the independent existence of parts of treatises that today we *only* know as a unit. Now, if this is so, then at some point these parts existed as independent books, and to this extent, their existence in private libraries does give us some insight into the state of the corpus at the time they entered those libraries. For a reflection somewhat confluent with ours, see Hatzimichali (2013: 25): "Diogenes' catalogue may not represent the exact books available to everyone across the Hellenistic world, but it is nevertheless indicative. It suggests that books from various treatises were circulating individually, many works had different titles and there was no thematic division into groups of works". Another feature of these two catalogues is that a significant number of our modern treatises are not mentioned in them; just by way of example, one cannot find in Diogenes' catalogue writings like the *On the Heavens*, *On the Soul*, *Metaphysics*, *Nicomachean Ethics*, all the biological treatises other than the *History of Animals*, etc.

44 Cf. DL 31; DL 32 = H 28; DL 39 = H 35; DL 44 = H 43; DL 53 = H 50; DL 57 = H 55; DL 58 = H 56; DL 59 = H 57; DL 60 = H 59.

45 In DL 52 = H 49 and DL 55; cf. H 51–52.

46 For instance, in Diogenes' catalogue: *Syllogisms*; *Propositions*; *Definitions*; *Divisions*; *Objections*; *On Question and Answer*; *On Dialectical Arguments*; *On Eristics*; *Eristical Propositions*; *Eristical Solutions*; *Sophistical Divisions*; and many others, all of them between titles 25 and 73, which corresponds to the logical section of the catalogue.

47 *Vita Plotini* 24.8–11; translation Barnes (1997: 37).

48 Barnes (1997) takes a strongly deflationary view of what would have been the innovative contributions introduced by Andronicus' edition. At present, however, there is a growing tendency to re-assign to him the more ambitious type of intervention that was consensual prior to that publication; in addition to the authors already cited in note 21, see more recently Rashed (2021b: CCCXLIV–XLVII). Again, nothing in what has been said in the text implies that Ptolemy's catalogue is a simple transcription of Andronicus' (from the prologue of his letter, the opposite can actually be inferred), but only that it is essentially indebted to a state of composition and ordering of the corpus that has already passed through Andronicus' hands. At this point, therefore, we depart from Rashed's conclusions, for whom Ptolemy's catalogue "reflète un état archaïque et non andronicien du *corpus*" (Rashed 2021b: CCCXXVI).

49 For this issue, Gourinat (2013) is particularly useful.

50 See *In Cat*. 5.13–30 Busse, and *In APr*. 1.9–2.18 and 3.36–4.7 Wallies.

51 Cf. *In Cat*. 4.28–5.1 Kalbfleisch.

52 See *Rh*. I 1, 1354a1–11 (where he famously declares that "rhetoric is the counterpart of dialectics"); 135513–8; I 2, 1356a20–33; 1358a10–4; I 4, 1359b2–18; II 24, 1402a3–28, and cf. *APr*. II 23, 68b8–14, and *SE* 15, 174b19–23.

53 See Alexander, *In APr*. 1.3–9 Wallies and *In Top*. 2.15–26 Wallies.

54 See *Top*. I 1, 100a25–101a17; cf. *SE* 2, 165a38-b11.

55 See, for example: *APr*. II 23, 68b8–14; *APo*. I 1, 71a9–11, *SE* 5, 167b8–9; 15, 174b19–23.

56 See *Rh*. I 1, 1355a4–10; 2, 1356a34-b18.

57 Cf. *APr*. II 27, 70a10–24.

58 Cf. Diogenes Laertius VII 41–44.

59 Cf. *Didaskalikos*, III.2, 153.30–7 Hermann = 3.21–4.2 Whittaker.

60 See *De placitis Hippocratis et Platonis* II.3.7–12.

61 See Olympiodorus, *Prol*. 8.4–10 Busse, and Elias, *In Cat*. 116.29–117.14 Busse. Philoponous, who seems to adhere to Simplicius' solution, is also aware of this particular arrangement: cf. *In Cat*. 5.8–14 Busse.

62 Both treatises are mentioned together in *Int*. 4, 17a4–7, and there are a number of cross-references between them: the *Rhetoric* refers to the *Poetics* six times (far less than the references to the *Topics*, and just a little bit more than the references to the *Analytics*), and the latter refers to the former once.

63 The order is slightly subverted in the case of Olympiodorus, who places the *Topics* after the *Sophistical Refutations* (an incoherent succession, which can only be accounted for as result of some kind of lapse), and Elias, who separates the *Sophistical Refutations* from the *Topics* by placing it after the *Rhetoric*, thus matching the grading of syllogisms with mixed alethic premises that has just been mentioned and that in his text immediately follows the ordered listing of the logical treatises. This long *Organon* was preserved in the medieval Arabic reception: see Black (1990); regarding the presence of Elias' scheme in Al-Farabi, see Mandosio (2013: 299); and, for the influence of this model on the medieval Latin West in the period of high scholasticism, see Brumberg-Chaumont (2013).

64 As Brunschwig (1989: 486) aptly remarks. For an even shorter *Organon* in the Syriac tradition (restricted to the *Categories*, *De Interpretatione*, and *Prior Analytics* – or even only the part concerning the assertoric syllogism), see Hugonnard-Roche (2013).

65 Cf. Simplicius, *In Cat*. 15.36–16.4 Kalbfleisch.

66 Ancient commentators alternate regarding the title: Porphyry uses the former in his commentary (*In Cat*. 56.14–31 Busse: twice, in 56.18 and 56.23–4), as does Simplicius (*In Cat*. 15.26–16.16 Kalbfleisch: three times, in 15.28, 15.30, and 16.14), and Boethius (*In Cat*. 263b Migne); but Ammonius uses the latter (*In Cat*. 14.18–20 Busse), as does Simplicius later in his commentary (In *Cat*. 379.8–10 Kalbfleisch), and also Olympiodorus (*Prol*. 22.34–5 Busse, and *In Cat*. 134.2–7 Busse), Elias (*In Cat*. 132.22–133.8 Busse – two occurrences, in 132.26 and 133.3 – and 241.30–3), and the anonymous scholiast of the *Categories* (*Scholia* 32b36 Brandis). For simplicity's sake, we will from now on use the title "Before the *Topics*" for both Greek variants.

67 *In Cat*. 16.4–13 Kalbfleisch; Chase's translation (2003). We will see in a moment which are the matters "necessarily taken up before demonstration" that Simplicius has in mind.

68 Kupreeva (2016: 140).

69 Cf. Moraux (1973: 93). Note that this succession agrees well with the interpretation of the *De Interpretatione* set forth by Whitaker, for whom this treatise "should be viewed as closely connected to the *Topics* and *Sophistici Elenchi*, rather than as the middle treatise between the *Categories* and *Prior Analytics*, as it has traditionally been seen" (Whitaker (1996: 4); and cf. Sedley (1996: 88–9)).

70 Cf. Rashed (2021b: CCXXXII–XXXIV).

71 See Griffin (2015: 7–11, 22, 26, 29–32, 32–5, and in general Chapter 2).

72 This philosophical and pedagogical justification of the ordering of the *Organon* is particularly clear in Ammonius (*In Cat*. 5.8–29, and 14.18–15.2 Busse), Simplicius (*In Cat*. 14.33–15.25 Kalbfleisch), Elias (*In Cat*. 116.29–117.14 Busse), and Boethius (*In Isag.1* 12.23–14.25 Brandt-Schepss). See also Arethas of Caesarea, *In Cat*. 135.35–136.3 Share.

73 *Top*. I 1, 100a25–101a24; and cf. *SE* 2, 165a38-b11.

74 See *APr*. I 1, 24a10–1 (and I 4, 25b26–31); *APo*. II 19, 99b15–7. And recall that this succession is preserved in all the ancient catalogues but Ptolemy's.

75 See Ammonius, *In Int*. 5.24–6.4 Busse; Philoponus, *In De an*. 27.21–9, 45.8–14 Hayduck; Boethius, *In Int.* II 11.13–13.11 Meiser; cf. Alexandre, *In APr*. 160.31–161.1 Wallies. On this, see also Moraux (1973: 117–19). The lines in question are 16a3–9.

76 Cf. Simplicius, *In Cat*. 379.8–10 Kalbfleisch. Simplicius says that Andronicus was only one among several that thought this way: "for some, among whom Andronicus is one, say that these matters have been appended by someone against the purpose of the book, namely by the man who inscribed the book of the *Categories* with the title Πρὸ τῶν τόπων" (Chase's translation (2003)). Boethius (*In Cat*. 263b Migne) gives a testimony more or less in the same terms, as does Ammonius (*In Cat*. 14.18–20 Busse), though the latter does not specifically refer to Andronicus.

77 But he does not say by whom: cf. *Prol.* 22.38–24.20 Busse. He enumerates four arguments given against the authenticity of the *Categories*, which also appear in the anonymous scholia (33a28-b34 Brandis) and partially in the Arabic medieval scholarship (see Georr (1948: 152–3)).

78 Ὅτι δὲ γνήσιον τοῦ φιλοσόφου τὸ σύγγραμμα πάντες ὁμολογοῦσι: *In Cat.* 13.25 Busse; an additional reason for thinking so based on the pervasiveness of its doctrines throughout the corpus is given in the immediate sequence: 13.26–14.1. Philoponus' testimony is essentially the same (cf. *In Cat.* 12.34–13.5 Busse). See also Simplicius, *In Cat.* 18.11–2 Kalbfleisch, and Elias, *In Cat.* 133.9–19 Busse.

79 Regarding all textual and historical issues on the *Categories* addressed in this section, Frede (1987) is still paramount. For brief summaries of the polemics surrounding the authorship of this treatise from the 19th century on, see Bodéüs (2001: XCIVnn1–3) (who leans towards suspecting the authenticity: CIII-CX), and Griffin (2015: 3n7–8). Brunschwig (1989: 500) also mentions scholarly criticism of Book V of the *Topics* in the early 20th century.

80 Cf. Elias, *In Cat.* 132.24 Busse, and *Scholia* 32b32–3 Brandis. But compare Porphyry, *In Cat.* 57.15 Busse, where this title seems to occur as an involuntary slip.

81 Respectively, Porphyry, *In Cat.* 56.15 Busse, and Simplicius, *In Cat.* 15.29 Kalbfleisch.

82 See Porphyry, *In Cat.* 56.19 Busse; Simplicius, *In Cat.* 15.29 Kalbfleisch; *Scholia* 32b33 Brandis.

83 See Porphyry, *In Cat.* 56.18–9 Busse; Simplicius, *In Cat.* 15.28–9 Kalbfleisch; *Scholia* 32b35 Brandis.

84 See Porphyry, *In Cat.* 57.14 Busse; Elias, *In Cat.*, 132.25 Busse.

85 See Porphyry, *In Cat.* 56.18 Busse; Simplicius, *In Cat.* 15.28 Kalbfleisch; Elias, *In Cat.* 132.26 Busse; *Scholia* 32b36 Brandis. For the two variants of this title, see note 66. Elias (*In Cat.* 132.27 Busse) and the anonymous scholiast (32b38) add another title, namely Περὶ τῶν καθόλου λόγων, which they assign to Archytas of Tarentum, a contemporary of Plato (assuming that a switch of names occurred in lines 26–7 of Elias' text, as Moraux (1951: 63) suspected, and makes perfect sense), whom they regarded as having written the archetype of Aristotle's *Categories* under such title – actually a Neopythagorean forgery from the turn of the first century BC to the first century AD (see on this Ulacco (2016)).

86 *On the Genera of Being* is actually the title of the three treatises that Plotinus devotes to the categories (42–4 = *Enneads* 6.1–6.3).

87 Cf. *Scholia* 32b36–37 Brandis.

88 *In Cat.* 379.8–10 Kalbfleish (see note 76). Moraux (1951: 61) tries to discredit this testimony.

89 Cf. *Prol.* 22.34–5 Busse. On the other hand, this disseminated usage may also account for the passage where Elias assigns the title to Adrastus' contemporary and fellow Peripatetic Herminus (*In Cat.* 241.30–3 Busse), when earlier he had attributed it to Adrastus himself (132.26–7: again, accepting the names' switch we have mentioned in note 85). Note further that in Diogenes' and Hesychius' catalogues the title Τὰ πρὸ τῶν τόπων in one book can be found, respectively, under numbers 59 and 57; this title may either refer to our treatise, under a different designation, or to the first book of the *Topics*, existing in an independent state, as Moraux (1951: 58–65) argued for.

90 See Bodéüs (2001: XXIV–XLI), and Griffin (2015: 7–11; cf. 36–41).

91 For example, in *In Top.* 65.15 Wallies (ἐν τῷ Περὶ τῶν δέκα κατηγοριῶν); cf. *In Top.* 93.11 Wallies (ἐν ταῖς δέκα κατηγορίαις).

92 Cf. *De libris propriis* XIX.42.12–3 (τῶν δέκα κατηγοριῶν).

93 Cf. *In Cat.* 56.14–58.20 Busse. See also Ammonius, *In Cat.* 13.12–9 Busse; Philoponus, *In Cat.* 12.17–27 Busse; Simplicius, *In Cat.* 15.26–18.6 Kalbfleisch; Olympiodorus, *Prol.* 22.13–37; Elias, *In Cat.* 132.22–133.8 Busse.

94 See the passages quoted in the previous note. Elias and the anonymous scholiast even go as far as to say that some other similar titles, namely, *On the Categories* (both) and *On the Ten Genera* (only the scholiast), were given to the treatise by "companions" (ἑταῖροι) of Aristotle.

95 This is particularly visible in Dexippus, *In Cat*. 5.17–8 Busse, and Simplicius, *In Cat*. 15.26–30 Kalbfleisch.

96 For further discussion of this title, see Weidemann (1994: 41–4) and Whitaker (1996: 5–7).

97 *De an*. II 8, 420b19–21. Whitaker (1996: 6) subscribes to this suggestion as well, for which he gives two other occurrences: *PA* II 17, 660a35–6, and *Po*. 6, 1450b13–5. These references are also partially given by Aubenque, who adds still a few others (Aubenque (2009a: 104–5); see also Weidemann (1994: 42–3)).

98 See Sedley (1996: 88, 104n6). It should be noted that Sedley explicitly adheres to Whitaker's view that the *De Interpretatione* has mainly to do with contradictory pairs and that his hypothesis about the treatise's original title is advanced as an argument in favour of such a view.

99 Cf. Weidemann (1994: 42–4).

100 See Aubenque (2009b: 37–44) and already Aubenque (2009a), which is a text originally published in 1991.

101 For instance, to the *Prior Analytics* in: *Int*. 10, 19b31; *Top*. VIII 12, 162b32; *Rh*. I 2, 1357b24; II 25, 1403a5; and to the *Posterior Analytics* in: *SE* 2, 165b9; VII 12, 1037b8–9; *EN* VI 3, 1139b27; *EE* II 10, 1227a10.

102 Full references are given in Ierodiakonou and Agiotis (2019). Some of the texts considered in their article appear in English translation in Sorabji (2012: 268–70); see especially texts 2, 4, and 5. It is worth mentioning that, according to Ierodiakonou and Agiotis (2019: 147–9), Byzantine commentators sometimes referred to the *Prior Analytics* under the alternative title *On the Three Figures*.

103 In Diogenes' catalogue, they appear in numbers 49–50, with the following designations: Προτέρων ἀναλυτικῶν θ' (*Prior Analytics* in 9 books) and Ἀναλυτικῶν ὑστέρων μεγάλων β' (*Great Posterior Analytics* in 2 books); in Hesychius' catalogue, they appear in numbers 46–7, already with their modern titles (the *Posterior Analytics* appears again in the appendix, under number 134). Moraux (1951: 87–8) gives an explanation for the discrepancy in the titles and number of books assigned by Diogenes' catalogue to the treatises, which has not convinced Barnes (1997: 42n176).

104 See again Ierodiakonou and Agiotis (2019).

105 Cf. *APo*. I 3, 73a14, and 11, 77a34–5.

106 Cf. *APo*. II 19, 99b15–7.

107 *In Cat*. 15.1–2 Busse; translation by Matthews and Cohen (2014). And cf. Olympiodorus, *Prol*. 8.6–7 Busse.

108 See *De libris propriis* XIX.41.22–42.5; cf. *De placitis Hippocratis et Platonis* II, 222.3–9.

109 Cf. *In EN* 49.1 Heylbut.

110 Cf. *In EN* 152.26 Heylbut.

111 See, for example: *In APr*. 6.14–5; 6.29–34; 42.22–5 Wallies; *In Top*. 2.9; 8.11–2; 26.18–20; 150.21–2 Wallies. However, he also refers to the *Posterior Analytics* as the *On Demonstration*: see *In Metaph*. 266.22, and 268.5–6 Hayduck.

112 For instance, in: *Int*. 11, 20b26; *APr*. I 1, 24b12; II 15, 64a37; *Rh*. I 1, 1355a28; I 2, 1356b13; I 2, 1358a29; II 22, 1396b4; II 23, 1398a28; II 23, 1399a7; II 25, 1402a35; II 26, 1403a31; III 18, 1419a24.

113 Brunschwig (1989: 499). He gives as references *Top*. VIII 14, 163b28–33, and *Mem*. 2, 452a12–6.

114 Cf. *APr*. II 17, 65b16.

115 See *SE* 1, 164a20; and cf. 11, 172b5.
116 Cf. *SE* 2, 165b8–11, and *Rh*. II 24, 1402a3.
117 And if Rashed is right in the argument he develops concerning the title that would occur in position 34 of the original Greek version of Ptolemy's catalogue (Rashed 2021b: CCLXXXIX–XCIII), the same conclusion could be drawn from this catalogue too.
118 Cf. Barnes (1994: xv), quoted in the following, in the text. And see also Barnes (1995: 17).
119 Some even date Aristotle's entire logical work to this period. This is famously the case of Düring (1966: 49), who considered that the entire *Organon* was written between 360 and 355 BC. In more balanced terms, Gisela Striker claimed that "there are good reasons to think that most or all of these treatises were written early in Aristotle's career, beginning when he was still a member of Plato's Academy" (Striker 2009: xi). Brunschwig (1989: 487–8) had already pointed in the same direction.
120 See, for instance, Mansion (1945: 10); Riondato (1957: 7); Gauthier (1970: 55); Rist (1989); Louis (1990: 95). But there are important exceptions here, as is the case with the following: Case ([1911] 1996); Bochenski (1951: 23); Corcoran (1974: 88); Graham (1987: 298n10); and, of course, Düring (1966).
121 Cf. Ross (1949: 22–3), and Düring (1966: 54).
122 Cf. Nuyens (1948: 111–15).
123 Cf. Solmsen (1929: 78–150). Barnes (1981: 55–7) expressly follows him here.
124 This is the position that we find, for example, in Maier (1900: 78–82), and that was later defended by Ross (1939: 251–72, 1949: 6–23), already in reply to Solmsen (whom we will discuss in a moment). More recently, Rist (1989: 82–3) again welcomed the traditional chronology.
125 In controversy with Ross, he again defended this position in Solmsen (1941: 410–11) and (1951: 563–77). In modern times, Barnes (1981) returned to this thesis, which was also shared by Smith (1982), among others.
126 Barnes (1994: xv).
127 Cf. Brunschwig (1981: 81).
128 Randall (1962: 21).

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1 Aristotle's *Categories*

Ontology Without Hylomorphism

Marco Zingano

In examining Aristotle's *Categories*, I will mainly focus on attempting to understand what Aristotle means to do with the list of categories he provides us with in Chapter 4 of this treatise, some of which he goes on to examine in detail.[1] This is a classical topic and a hotly debated one since antiquity as well. My goal is limited, for I only want to see whether the text as it now stands can give us clues about this issue when we pay attention to its formal structure and put aside – even if only momentarily – other works, especially his *Metaphysics*, in which hylomorphism is the key notion on which to ground the categories. Hylomorphism is absent from the *Categories*, and I will try to read this treatise neither as announcing it nor as being conceived under its shadow. Whether or not such an enterprise pays off depends on how far we are willing to read the *Categories* free from Aristotle's favoured and most celebrated view of matter and form as the principles of what there is.

My proposal is thus to read the *Categories* free from any shadow of hylomorphism. Avoiding hylomorphism requires one not only to abandon the search for the concepts of matter and form, or their antecedents, but also, and more importantly, not to seek for a causal link between primary substances and the secondary substances or the other categories. Hylomorphism, in effect, is doctrine in which form is the cause of this piece of matter being the determinate object it is. In the *Categories*, in contrast, Aristotle is keen on emphasising his grounding thesis as he reiterates six times in Chapter 5 that individuals or primary substances are the basic ontological items because everything else is either said of them (secondary substances) or inhere in them (all the other categories) but eschews from engaging in any causal explanation of his dependency doctrine. He does speak of soul and body in the *Categories* but does not take them as pieces of an explanatory scheme of what a thing is, nor is he interested in examining the nature of soul or its relation to the body. When writing the *Categories*, Aristotle is, or so I will argue, innocent of hylomorphism; and I would like to see how successful such an enterprise can be, and to which extent.

1. The Backbone of the *Categories*' Central Chapters

Some considerations about the way the categories have been interpreted are helpful at the outset of our investigation. The categories are traditionally envisaged

through a three-faceted approach. As predicates, they share a linguistic aspect, but they are not exhausted by this linguistic aspect, for these predicates convey notions or concepts, and these concepts, as they are the most general ones, chart being in its ultimate kinds. Porphyry reports that Boethus already held the opinion that the *Categories* concerns "simple significant words as they signify things" (*In Cat.* 58, 5–6 Busse; see also *In Cat.* 59, 17–8 Busse), which entails that these words convey notions that signify things in their utmost generality. Simplicius says that Alexander of Aphrodisias also took it that the treatise is about "the simple and most generic parts of speech which signify simple realities, that is, which signify the simple notions about these simple realities" (*In Cat.* 10, 17–9 Kalbfleisch). This is what we may now call the classical view: the categories are not predicates, concepts, or genera taken separately, but are these three aspects woven together, for the categories are the simple words that convey the notions that signify the most general divisions of being. This three-faceted approach settles a previously hotly debated topic and is clearly meant to align the *Categories* with the three-dimensional approach *De Interpretatione* introduces us to right in its first chapter (namely, words are sounds that are tokens of the concepts that stand for things), with the proviso that the words in question are the most general ones.[2]

So far so good, and we can share this consensus. What I intend to do here is to understand what motivates Aristotle to collect these ultimate predicates as one focuses solely on the treatise itself. Despite the fragmentary state of our text, we are not totally clueless, for some useful hints can be gleaned in this respect from the current text provided we pay close attention to the way Chapters 5 to 8 are formally constructed, and there is even some hope that we can also have a better understanding of the sort of lacuna that affects Chapter 9. These signs strongly suggest a systematic examination of the categories in terms of a set of formal features, and thus run counter to the hegemonic view, championed by Kant, according to which Aristotle gathered them in a haphazard fashion.

To disclose these formal features, let me begin with some well-known notes about this treatise. It is clearly divided into three parts: (a) the first three chapters make preliminary points, beginning in an unusually abrupt way, with no introductory paragraph (1a1 – b24); (b) the second part is the most important one, running from 1b25 to 11b7, followed by the third and last section (c), traditionally called the *Postpraedicamenta* (11b17 – 15b32). Section (c) examines notions that have not been previously announced but play a significant role in the discussion: opposition, contrariety, priority, simultaneity, and change. Then comes the last chapter of the treatise, which examines the notion of having, a notion that figured in the list of categories provided in Chapter 4, but, as we will see later, the treatment it receives shows traces of being curtailed, a bit like what happens in Chapter 9. Between sections (b) and (c) there stand the lines 11b8–14, which have clearly been interpolated by a later editor in the hope of giving the reader the impression of a certain completeness and smoothness in the treatise: it is said in these lines that the category of *position* has already been examined in the chapter on the relatives, whereas those of *where*, *when* and *having* need no special treatment, owing to their obviousness. These lines manifestly try to fill a lacuna, the dimension of which is a matter of conjecture.

Section (b) will be the focus of our attention. In section (b), the ten categories are enumerated in Chapter 4 and examples are given by way of illustration; in the sequence, substance, quantity, relatives, and quality are fully examined, and there is the beginning of an analysis of two categories taken together, doing and being affected, in Chapter 9, but this chapter is clearly mutilated. Section (b) is therefore incomplete, but this fact should not make us lose track of a remarkable feature all the non-mutilated chapters have in common. For these chapters present a very peculiar structure. In the first part of each of these chapters, the different kinds that belong to the notion at issue are listed, and examples are furnished, whenever pertinent; then comes a second part, which discloses which are the basic traits an item has to satisfy in order to be a member of the category under examination and, whenever apposite, further remarks are added in a sort of coda (we will return to this point). Therefore, the entries in section (b) have two parts neatly separated from one another (I leave aside for the moment Chapter 9, for it is clearly mutilated):

Cat. 5 – <i> substance: kinds (2a11–3b23); <ii> basic traits (3b24–4b19)
Cat. 6 – <i> quantity: kinds (4b20–5b10); <ii> basic traits (5b11–6a35)
Cat. 7 – <i> relatives: kinds (6a36–b14); <ii> basic traits (6b15–8b24)
Cat. 8 – <i> quality: kinds (8b25–10b11); <ii> basic traits (10b12–11a38)

So, Chapters 5 to 8 in section (b) are clearly structured into the two parts we mentioned: (i) listing the main items the term refers to; (ii) the disclosure of the basic traits any item must comply with in order to belong to a given category. Let us first focus on part (i). In the category of substance, for instance, part (i) lists individuals, under the title of primary substance, and species and genera, under the title of secondary substance; in the category of quality, part (i) mentions four cases: states and dispositions; capacities; affective qualities and affections; and the shape or external pattern of a thing. Part (i) is designed to enumerate the *kinds* into which each category is divided. Substance is *said* (2a12: λεγομένη) according to two types, primary and secondary substances; of quantities, *some* are discrete, *others* continuous (4b20: τὸ μέν . . . τὸ δέ); there are four *kinds* of quality (8b27: ἓν εἶδος; 9a14: ἕτερον γένος; 9a28: τρίτον γένος; 10a11: τέταρτον γένος); relatives, in contrast, belong to only one kind, as they are all such things that are *said* to be just what they are of other things (6a36: τὰ τοιαῦτα λέγεται ὅσα . . .). The terminology varies (things *are* or *are said*), and Aristotle also speaks of τρόποι, *manners*, as when he says about qualities that "perhaps some other manner <ἄλλος τρόπος> might come to light, but we have made a pretty complete list of those most spoken of" (10a25–6), but he clearly means to list the main kinds into which a category is divided, even if he does not close off the listings, as new cases may be added to them, as might be the case for quality.

Section (i), as it lists the kinds in question, is relatively straightforward, or almost so. As regards quality, Aristotle adds a note (10a27–b11) to explain that things called paronymously after the qualities are not themselves qualities, but qualified things named after the qualities they have. But a considerable effort is done to make things plain about the kinds of substance, as five notes are added with a view

to securing two points: (a) primary and secondary substances are the only two members of this category, and (b) primary substances play a pivotal ontological role as they are the ultimate substrata (ὑποκείμενα) for both secondary substances and the other categories. The first note (i.a) runs from 2b7 to 2b28 and explains why the species is more substance than the genus (this is so because the species is closer than the genus to the individuals that belong to them). The second note (i.b) covers the chunk 2b29–3a6 and means to reassure that these two kinds are the only kinds of substance there are. The third observation (i.c), from 3a7 to 3a21, hammers the same point home by showing that substances are not in other things, and that the name and the definition of genera are both said of their species, and the name and the definition of the secondary substances are also both said of the primary substances. Then comes note (i.d) from 3a21 to b9 to tackle the problem of the status of differentiae: no substances are in a subject, but this is not peculiar to them, for the differentiae also are not in a subject, and substances and differentiae alike share the characteristic according to which all things called from them are so called synonymously. It is then shown that differentiae and substances are in close vicinity, but it is emphasised that only individuals (substantial particulars), species and genera are the members of the category of substance.[3] Aristotle adds a fifth point (i.e) still, developed through lines 3b10 to 23, in which he introduces the notion of τόδε τι and aims at showing that there is an important difference between primary and secondary substances. This chunk closes section (i) on substance as it endeavours to make plain the key ontological distance between the only two kinds of substance, primary and secondary substances, soon after differentiae have been shown to be lying – or maybe lurking – in their vicinity.[4] There are thus two intertwined problems, which explains this convoluted structure: on the one hand, there is the crucially decisive ontological difference between primary substances and, in the other side, secondary substances and the other categories, in the light of which primary substances are shown to be the basic ontological items, of which the secondary substances are said and in which things belonging to the other categories in here; on the other hand, primary and secondary substances are opposed en bloc to the differentiae, which should not be envisaged as substances, despite their close nature to the cases of substance. Section (i) is therefore straightforward, except for Chapter 5, in which those five notes are marshalled to highlight the pivotal place individuals have as regards both secondary substances and the other categories and to set apart the differentiae from both kinds of substance. Aristotle hammers home the privileged ontological status of individuals without recourse to any causal explanation, nor does he embark on any distinction between soul and body as form and matter of the individual things. The main lesson is clearly asserted: individuals are the substrata of which the species and genera are said and in which the things belonging to the other categories in here. Consequently, the primary substances thus conceived occupy the centre stage in the *Categories'* ontology, and their privileged status is secured without any talk of causal relationship.[5]

Section (ii), in contrast, is much trickier, for it exhibits a good number of intricacies. Still, there is a point which is crystal clear and constant in all these chapters as regards section (ii). Aristotle gives in a fixed order three characteristics. The first

two – to have or not to have contraries, to admit or not to admit degrees – are common in the sense of belonging in the same combination to more than one category. Then comes a third characteristic, which is the *proprium* of each category, necessarily belonging to all and only to the items of that category, in accordance with the technical notion of ἴδιον introduced in *Topics* I 5. I dub the three-characteristic distribution across the categories the thesis of the basic traits of being: any item that is responds to the common-traits in a determinate fashion, and has as its *proprium* this or that characteristic. When one looks at how they are distributed across the categories of substance, quantity, relatives, and quality, the outcome is as follows:

Substance:

(b1) common-traits

  (i)   has no contrary <3b24–7>
  (ii) does not admit of more and less <3b33–4a9>

(b2) ἴδιον-trait: to be able to receive contraries while remaining numerically one and the same <4a10–21>

Quantity:

(b1) common-traits

  (i)   has no contrary <5b11–14> [?]
  (ii) does not admit of more and less <6a19–25>

(b2) ἴδιον-trait: to be called equal and unequal <6a26–35>

Relatives:

(b1) common-traits

  (i)   not all of them have contraries <6b15–19> [*]
  (ii) not all of them admit of more and less <6b19–27> [*]

(b2) ἴδιον-trait: to reciprocate <6b28–36>

Quality:

(b1) common-traits

  (i)   not all of them have contraries <10b12–7> [*]
  (ii) not all of them admit of more and less <10b26–30; 11a5–14> [*]

(b2) ἴδιον-trait: to be called similar and dissimilar <11a15–9>

This table immediately brings forward three observations. Firstly, there is room for controversy, which is signalled by a question mark in my table. Regarding quantities, it is said that they have no contraries: the number ten has no contrary,

neither has the number two. But it may seem that quantities have contraries, for *many* seems to count as a quantity, and *many* has as contrary *few; large* also seems to count as a quantity, and *large* is contrary to *small*. To dissipate the doubts about contrary quantities, Aristotle argues extensively, from 5b14 to 6a18, that they do not have contraries. It is shown that none of these allegedly contraries are quantities, but relatives. Moreover, not even as relatives do they have contraries, for, even if most of the relatives have contraries, Aristotle claims that *relative quantities* have none (6b17–9), arguing that, if they did, it would turn out that things are contrary to themselves, for if large is contrary to small, and the same thing is large (in relation to *x*) and small (in relation to *y*), it would be its own contrary, large and small – but "it is impossible for a thing to be its own contrary" (6a7–8). There thus is room for controversy, but these controversies are supposed to have some sort of solution within the framework of *Categories*.

Second observation: some traits characterise most of the items within a category, but not necessarily all of them – this was signalled by * in my table. In the case of relatives, some of them certainly have contraries, as virtue is the contrary of vice, or knowledge is the contrary of ignorance. However, as we have seen, some relatives have no contraries, as in the case of all relative quantities – otherwise, there will be things that are their own contrary, as Aristotle contends. The same happens with degrees, for some relatives admit degrees, as a thing can resemble more or less another one, and every resemblance is a relation between things, but again, other relatives, to wit, relative quantities, such as double and half, do not admit degrees. Qualities also have traits satisfied by some members, but not by all: bright is contrary to dark, but yellow or blue have no contrary. In the same vein, three sorts of quality admit degrees (disposition, capacity, affection), but its fourth type does not, for "triangle and square do not seem to admit of a more, nor does any other shape" (11a5–6). So these traits may be true for all members, or only for most of them.

The third observation will lead us to a new schema. We see that two traits go across all the categories, either positively or negatively satisfied: (1) to have or not to have contraries, (2) to admit or not to admit degrees. Focusing on these traits, one can draw the following diagram:

	Substance	Quantity	Relatives	Quality
Contrariety	-	-	+ [*]	+ [*]
To admit degrees	-	-	+ [*]	+ [*]

It stands out quite clearly from this table that contrariety and having degrees do not serve to distinguish the categories, for, on the one hand, substance and quantity satisfy both negatively, and, on the other hand, relatives and quality satisfy both positively. So what job do having degrees and contrariety do? To see this, one has to take into account another strategy part (ii) deploys concerning each category. Just after introducing his characterisation of the categories based on the satisfaction or nonsatisfaction of this set of traits (contrariety and admitting degrees), Aristotle brings in a particular trait, a property which belongs to a category alone and is

predicated convertibly of it, that is, the ἴδιον in Aristotelian technical terminology. If an item satisfies such a property, it is thereby lifted up as a member of the category to which such a property is an ἴδιον. To recall them:

1 substance: to be able to receive contraries while remaining numerically one and the same
2 quantity: to be equal or unequal
3 relatives: to reciprocate
4 quality: to be similar and dissimilar

This is quite a distinct pattern from the previous one. In the first one, a set of traits is established, such that the satisfaction or non-satisfaction regarding each trait, when taken collectively, characterises the belonging of an item to a determined category, but these traits can also be invalid to some of the items of a same category or be valid to items of another category. Now one has to identify one and only one trait for each category, which, if it applies to an item, immediately lifts it up as a member of that category, for it is valid only for the items of that category and for all of them. Both patterns are used, one after the other. In fact, the second pattern, the ἴδιον-pattern, always comes after the disclosure of those traits whose joint satisfaction characterises more than one category.[6] We are now in position to see which job each pattern is supposed to do. The categories are outlined by the way they satisfy (negatively or positively) the common-traits of admitting degrees and contrariety. This means that to be an item in one category requires it to satisfy in some way both traits; substance and quantity, for instance, satisfy both of them negatively, while relatives and quality satisfy both of them positively. But the way in which items comply with them in a same category is not mandatory, for some items can comply differently with them. More importantly, these common-traits cannot distinguish the categories, for different categories can equally satisfy them, as we have seen. To sort them out, one has to resort to the ἴδιον-pattern. These patterns are thus doing different but complementary jobs. The satisfaction-pattern maps the province of being as it is spread across the different categories. To be for a thing is to stand in some relation to these two traits. On the other hand, the ἴδιον-pattern sorts out everything that finds a place within that province and locates it in one and only one category.[7]

Section (ii) tackles three sorts of controversy as well. One sort of controversy concerns whether the ἴδιον-trait has been correctly formulated. On substance, one might think that its ἴδιον-trait fails to single out only substances, for propositions seem also to receive contraries while remaining one and the same. Two responses are offered to reject the objection. Either propositions can only be said to change insofar as they mirror the changes that primarily occur in substances (4a28–b5), or, in a less conciliatory tone, propositions do not change at all (4b5–18). In both ways the ἴδιον-trait is secured. Again, doubt is voiced about reciprocation as the ἴδιον-trait of relatives. Reciprocation is introduced as its ἴδιον-trait at lines 6b28–36, just after the presentation of the common-traits, as one would expect. But then two notes follow. First, there is a long note (6b36–7b14) given over to showing that one

must give the correct correspondent term in a relation; otherwise, they will not reciprocate. Then some lines are inserted (7b15–8a12) which are devoted to discussing the simultaneity that naturally occurs among items that reciprocate, for it may sound reasonable to claim that simultaneity is the ἴδιον-trait of relatives. However, albeit simultaneity does obtain among some relative items, it does not do so for all, for sensation and knowledge are not simultaneous with their objects, nor does the destruction of the former imply the destruction of the latter. Simultaneity is thus discarded, and reciprocation is maintained as the ἴδιον-trait of relatives.

A second sort of controversy concerns items that seem to belong to more than one category under the same aspect. On this point, there is a discussion (8a13–b24) aiming to show that no substance is a relative, not even the parts of a living body when taken as secondary substances, even though one says that the (generic) head is head of something else, *e.g.* a lion's head. Bodily parts of substances are substances indeed (8b16) and seem also to belong to the category of relatives when taken as secondary substances. This problem motivates the search for a more robust criterion for relatives in order to rule out such a conflation, and a more refined definition of being a relative is brought in at 8a31–3. In consequence, relatives are no longer taken simply as things which are said to be precisely what they are of other things, as it was proposed at the beginning of this chapter (6a36–7), but, in a more restricted fashion, it is now required that relatives be in a more determinate relation, so that, if someone knows any relative, he will also know that in relation to which it is spoken of (8a36–7). Much has been said to account for this change; suffice it here to underline that this move is done in order to prevent that the same item, when taken under the same aspect, belong to two different categories. The upshot is that parts of substances are not relatives according to the stronger criterion: it is hence false that some substances are also relatives.

In the chapter on quality, there is also a discussion of how to distinguish qualities from relatives so that an item will not belong simultaneously to both (11a20–38). This time, however, the solution is more accommodating. States and dispositions, which make up one of the species of quality, are also said to be relatives, for knowledge is called precisely what it is of something else (knowledge *of* chemistry, for instance). This is true, but only for knowledge as a genus, for whenever one considers their more specific cases (here called *particulars*: τὰ καθ' ἕκαστα, 11a26), none of them is said of something else. Grammar, to stay with one of Aristotle's examples, is not called *grammar of* something, but if at all, it is relative to something else only as *knowledge of*, say, letters and sounds. It is not argued that states and dispositions are not both qualities and relatives, but it is emphasised that the more specific cases of states and dispositions are not relatives. The solution works on the assumption that if the more specific case is only a quality and not both a quality and a relative, even though the generic case is both a quality and a relative, the puzzle seems to be solved, or, if it is not considered to be totally dissolved, at least the threat of an item belonging to two categories subsides.[8]

A third sort of controversy concerns the common-traits, namely, whether the more-and-less trait can or cannot be applied to states and dispositions (10b30–11a5). The discussion is located right in between the statement that qualities do

accept degrees (10b26–30) and the statement that not all of them do, for shape and the external form of things do not admit degrees (11a5–14). According to some people (who are left unnamed), it seems odd to call one justice more a justice than another, or a health more a health than another. Aristotle is silent about whether he finds this worry justified or not; he limits himself to observing that we do call a person more just than another one, or healthier, and so forth. Maybe the qualities themselves cannot admit degrees, but the qualified things manifestly do, and thus, the difficulty is solved, again on the basis of the privileged status of individuals or the more specific cases over the more generic ones. This is not so crucial a controversy as the former two sorts were since the common-traits allow flexibility in their application as they may be valid only to some cases, but it is very instructive that the difficulty is disposed of in a similar fashion to the way the controversy over qualities and relatives was solved: the particular cases (here the qualified persons) do admit degrees, even though one may hesitate and not attribute degrees to the qualities themselves.

The outcome, then, is a very precise structure for Chapters 5 to 8:

(a) Part (i): list of cases (kinds and items that illustrate these kinds)

  Coda: different levels of items belonging to the category of substance; exclusion of items wrongly claimed to belong to a category

(b) Part (iia): the two basic traits (contrariety; degrees)

  Coda: discussion about whether all items satisfy these traits in the same way

(c) Part (iib): the ἴδιον-trait

  Coda: alleged failure of the ἴδιον-trait to distinguish one category from the others

(d) alleged conflation of items belonging to different categories

This seems to be a well-designed plan, which systematically runs through (a) to (d), as can be gleaned from the formal structure Chapters 5 to 8 adhere to. This picture discloses a systematic view on the categories – at least on the first four of them. The order is unchanging: part (i) has the listing of kinds and some examples to illustrate them; then comes part (ii), subdivided into the analysis of the common-traits, and the disclosure of the ἴδιον-trait; and within the discussion of the common-traits, contrariety is first examined, after which the admitting of degrees is examined. Whenever there are reasons for doubt, these doubts are spelt out and a solution is provided. At the end of each chapter, the alleged cases of an item belonging to more than one category are closely scrutinised, and a solution is given to the effect that either the alleged case is false or that the item is taken in different aspects. In the last resort, it is shown that, despite the fact that generic cases may belong to more than one category, the individual or more specific items do not. This well-structured analysis clearly indicates that Aristotle means to chart the categories via the common-traits and the ἴδιον-traits in a concerted effort to draw the ways of being in a systematic way.

2.   A Map of Being in the Sensible World

Charting the realm of being is for its own sake a tantalising task Aristotle undertakes. It is worth noticing that such an ontological project may be useful for other purposes as well, notably for dialectical disputes, but this is a bonus it offers, while its main thrust is to set up the boundaries of being and to locate any item in one of the discovered pigeonholes, via the complementary jobs discharged by the common-traits pattern and the ἴδιον-pattern. A caveat is required, though. Primary substance is pivotal in such a charting, for it is the natural substratum for things in all the other categories: as Aristotle emphatically says in the *Categories*, individuals are basic in the sense that, without them, there is nothing to be said of them or to inhere in them. But what sort of individuals? The ἴδιον-trait of substance is to be able to receive contraries while remaining numerically one and the same. Now, only sensible substances can satisfy this ἴδιον-trait, for non-sensible substances have no potentiality for change. There is therefore grandeur in this enterprise, the charting of being, but it is restricted to sensible being. This is not to deny the reality of non-sensible substances. Nothing precludes them from existing; only, they do not belong to the scope of this investigation. Consider soul, for instance. Soul is mentioned four times in the extant text of *Categories*, but it is mentioned only to make it plain that some qualities are in men because they are in their souls, and nothing is said about its nature or how it is related to the human body.[9] The charting has tantalising ontological ambitions, but it is restricted to the regional ontology of sensible substances.

If this is correct, a pressing question is to ask to what extent the programme of *Categories* succeeds in charting the realm of sensible being. Is it limited to four categories, or is it supposed to expand over all of them? There are signs that it is supposed to cover all the categories. One of these is the fact that the analysis of the four categories is done in a fashion that is so abstract and formal that it naturally calls for its expansion into the other categories as well. A more concrete sign is the fact that, after introducing for the first time a common-trait (the trait of having contraries when examining substance), Aristotle remarks that this feature is surely not an ἴδιον-trait, for it is shared *by many other categories* (3b29: ἐπ' ἄλλων πολλῶν), but he gives only one example (the category of quantity). We are left to imagine which other categories share this trait, but this is a sort of avowal that the same pattern of analysis will or at least can be applied to more categories than the four extensively dealt with in the treatise. But will this programme succeed if it is expanded to all categories? Aristotle has singled out two common-traits only, and one may expect him to select more traits to do the job. One may also contest the selection of precisely these two traits: why pick having contraries and admitting degrees to chart the province of being? But Aristotle did pick precisely these two traits to work with in conjunction with the ἴδιον-trait. A comparison with what he does when explaining the nature of the four simple sensible bodies (*GC* II 2–3) may be helpful at this juncture. Fire, earth, air, and water are the possible combinations of two pairs of opposites that qualify matter as their substratum: hot and cold, on the one hand, and dry and moist, on the other. In our case, everything that is

must comply with the two common-traits in a determinate fashion, as we have seen in the case of four categories, and these common-traits are supposed to do the job of outlining the entire province of being in conjunction with the ἴδιον-trait, which sorts them out within this province. The outcome may not be as convincing as in the case of the simple bodies, but one can see an analogous way of tackling this kind of problem operating in the background.

Chapter 9, the last chapter we have for section (b), is clearly mutilated and incomplete, but it may give us some clues on this issue.[10] Minio-Paluello (1992) suggests to place lines 11b1–7 (which comprise the entire genuine part of the chapter) into Chapter 8 on quality, right after lines 10b26–11a14, based on the way he construes the opening line.[11] But there is another possibility, which Minio-Paluello also countenances. One may think of a lacuna before 11b1, not at the end of Chapter 8, as Minio-Paluello seems to presume, but at the beginning of our mutilated Chapter 9. We have no idea how long it might have been, but we do have an idea of what content it should contain. If a lacuna is placed at the beginning of Chapter 9, it would contain part (i): some of the missing lines would list the kinds that correspond to doing and being affected, illustrating them by some examples. Then come the extant lines on how these items comply with the common-traits in order to count as members of doing and being affected. This surely belongs to part (ii) of that chapter. As we have seen, part (ii) has its own divisions, and we may accordingly postulate a lacuna after 11b1–7, a lacuna which would contain the ἴδιον-traits that only items belonging to the categories of doing and being-affected satisfy. One can thus have an approximate idea of how mutilated it is. It lacks part (a) in which the species are enumerated; there is also no mention in part (b) of (b2), the ἴδιον-trait concerning each of them. And it is also likely that a note was appended at the end of the chapter concerning items that seem also to belong to the category of quality.[12] We cannot predict the content that is lacking. But we can be fairly sure of what kind of content is lacking.

Noticing that there must be a lacuna here, whatever be its content and size, a zealous editor tried to fill it in with the interpolated lines 11b8–14, attempting to make it look seamless. But this rests on a misunderstanding of the real structure of the preceding chapters. In fact, we may postulate a great loss of pages after Chapter 9, in which the remaining categories listed in Chapter 4 or at least some of them would have been examined in accordance with the pattern of the twofold division we have found in Chapters 5 to 8: namely, a first part listing the kinds and a second part disclosing how these kinds comply with the two common-traits and their ἴδιον-trait. And we may also conjecture a loss of pages before the beginning of Chapter 9 too (as Minio-Paluello also suggested), containing some other categories.[13] But this is speculation. All we know is that there is a very precise pattern of analysis carried out in Chapters 5 to 8, which allows us to think that the other chapters, if they were written, would also have followed the same pattern. As the texts stands, Chapter 15 is the last chapter of the entire treatise and it is devoted to examining the category of having, listed as such in Chapter 4. Now, this chapter clearly has part (i), the listing of the several kinds in which it is said (15b17: κατὰ πλείονας τρόπους λέγεται) and items that illustrate them, but has no corresponding part (ii). Thus, Chapter 15

can also be seen as considerably mutilated, as it currently stands, for it has only part (i), in contrast to Chapter 9, which has only part of part (ii). It is guesswork to try to figure out the content of the missing parts, but we can reasonably suppose which part each chapter lacks.

Maybe we can take advantage of what Chapter 9 says about doing and being-affected to complete our diagram as far as possible. As regards the common-traits, the result is as follows:

	Substance	Quantity	Relatives	Quality	Doing and Being-Affected
Contrariety	-	-	+ [*]	+ [*]	+
To admit degrees	-	-	+ [*]	+ [*]	+

Our diagram seems to suggest a possible explanation for the order in which the categories are examined. We have at the beginning the categories that respond negatively to both traits; then come the categories that respond positively to both traits, but do so only partially, as some of their items do not conform to this positive pattern. Then come the categories of doing and being-affected, in which both traits are treated positively, with no exception, since all their members conform to the same pattern. Maybe some of the missing categories have items that satisfy in a positive fashion, either totally or partially, one of the common-traits, but the other one in a negative fashion, either totally or partially. For instance, *being-in-a-position* and *having* seem to admit degrees but do not have contraries. It is too difficult to imagine how the ordering would continue, but one can think of a serial ordering arranged according to the way the items of each category satisfy the two common-traits, to have contraries and to admit degrees, beginning with those that comply negatively with both of them, then going along with those that comply positively with both of them, but having exceptions, then moving on to the categories whose items comply with the common-traits positively for all their members, and in the remaining part of the list mentioning those categories which comply with the common-traits in opposing ways, one way positively, the other way negatively, either entirely or only partially as regards their members. So seems to go the charting of the sensible world, as the common-traits come in several combinations and the number of items they apply to within the categories may vary. The province of being would thus be charted in its entirety, as being is dispersed into the ten categories the common-traits outline, and the categories encompass all there is, each thing that is being located in one and only one category according to the ἴδιον-trait it satisfies, alleged exceptions being disposed of as the analysis unfolds.

3.   The Categories and Hylomorphism

We can now see that the project Aristotle carries out in the extant parts of his *Categories* is most likely the beginning of a mapping of all sensible beings in their most general articulations, in their ultimate and basic joints, so to say, and such a charting is expected to go in its full dimension through all the categories. As the

text now stands, this charting is carried out only in Chapters 5 to 8, though. All the same, such a project betrays metaphysical ambitions, and considerable ones, even though it is conceived of as a sort of regional ontology, restricted as it is to the province of sensible substances. Quite significantly, it is carried out from a deflationary perspective, for it postulates that only individuals are the natural basis for everything that is since individuals are the substrata of which secondary substances are said and in which things that belong to the other categories inhere. Metaphysically speaking, it provides us with an ontology without hylomorphism: being is unveiled in its ultimate articulations, even though form and matter are not envisaged as the principles of substance, nor is there any explanatory scheme in terms of causation.

If all this makes sense, one may wonder why such a minutely construed, metaphysically ambitious, and apparently ontologically promising project remained fragmentary, transmitted only in its scaffolds, as if it were abandoned at some point. Perhaps this is all due to textual transmission, which made the treatise full of lacunas and rendered it too difficult to grasp its original intent. This may be the case, and we cannot take definite sides about this issue. But how to explain not only the lacunas in the *Categories*, but more importantly the silence about it in the extant works, in which references are constantly made to the *doctrine* of categories, albeit no clear reference is made to the *treatise* itself? We may never have an answer to this question either, constrained as we are to reckon its fragmentary state as an obstacle to any further investigation. However, we may think of a reason more fitting for a philosophical mind like Aristotle's. The reason would be that, albeit this is a grandiose programme, it has two flaws that become more and more salient as Aristotle's philosophy evolves towards a full-fledged system. On the one hand, its regional character makes it that Aristotle gradually loses interest in it and becomes more and more intrigued with another project, that of construing a unified doctrine of substance that might contemplate sensible substances and non-sensible substances alike at one fell swoop. A unified doctrine of substance requires a different conceptual framework in which the regional ontology of sensible substances is superseded by a more encompassing ontology. On the other hand, causation becomes one of the main subjects of Aristotle's thinking, as the *Posterior Analytics* makes plain. Now, causation is dramatically lacking in the project the *Categories* carries out, and once form is inserted into an explanatory scheme and is envisaged as the cause of this piece of matter being the determinate object it is, a new scenario emerges, to the unfolding of which the *Categories*' project is much less attractive. In other words, Aristotle becomes anxious to write *Metaphysics* Λ and Z-H and got so deeply entangled in them that he gives no more attention to his ontological charting of sensible substances. This is, of course, a conjecture, but, as I said, it is at least in line with Aristotle's mindset and makes us think of Aristotle's metaphysics as continuously evolving as he endeavours to answer the question about what there is in terms of a general science of being.

Notes

1 I take for granted the unity and authenticity of the *Categories.* For an illuminating study on this issue, see Michael Frede's paper (1987), originally published in 1983 and, more recently, Bodéüs (2001).

2 Albeit no explicit mention is made to *De Interpretatione* to ground this reading of the goal of *Categories*. For a survey on the issue of its σκοπός, see Hoffmann (1987).

3 The precise status of differentiae and where one ought to posit them amongst the categories is a topic hotly debated by the Greek commentators: see Porphyry (*In Cat.* 94, 20–96,2 Busse), Dexippus (*In Cat.* 47, 28–51,2 Busse), Ammonius (*In Cat.* 45,7- 48,11 Busse) and Simplicius (*In Cat.* 97,24 – 102,10 Kalbfleisch).

4 It should be noted that sandwiched in between section (i.d) there is a warning according to which one need not be disturbed by the fear that one might be forced to say that parts of a substance are not substances because they are in a subject (3a29–32). The reason adduced is that in 1a24 it has already been expressly stipulated that things are in subjects not as parts of substances (but it is not clearly said whether parts of substances are either the corporeal parts of a body or the incorporeal parts, like the parts of a definition).

5 *Cat.* 3b10–23 may be seen as an early stage for the thesis that form is the cause of what the individual thing is, since secondary substances are envisaged as that which marks off what primary substances are. But this is rather foresight through the benefit of hindsight; as such, the passage only posits secondary substances in a sort of ontological limbo, in-between individuals, which they are not, and qualities properly speaking, which they cannot be.

6 Some ἴδιον-traits are announced by a highlighting phrase, but not all of them. The ἴδιον-trait of substance is introduced by μάλιστα δὲ ἴδιον (4a11); quantity's ἴδιον-trait is announced by ἴδιον δὲ μάλιστα (6a26). But quality's ἴδιον-trait is simply said to be an ἴδιον (11a8), while the ἴδιον-trait of relatives is not introduced by any of these expressions. Actually, it has to be inferred from the text, for it has no introductory expression; the term that comes closest to this avowal is οἰκεία at 7a30. Still, that reciprocation is the ἴδιον-trait of relatives can be easily inferred from what is said in the passage.

7 It is worth noticing that the Greek commentators are at a loss when it comes to assess what the common-traits and the ἴδιον-traits are for. Their common strategy is to take these features as substituting for the inevitably missing definitions of the categories, given that one cannot produce a definition of the ultimate genera. The Greek commentators envisage thus the common- and the ἴδιον-traits as doing fundamentally the same job, which is to serve as a second best through which to circumscribe the categories. And if this is their common job, one should rather set aside the common-traits and search directly for the ἴδιον-traits, for only they, if anything, can properly substitute for the lacking definitions, as the common-traits are inconclusive, since sometimes they are not valid for all the items of the same category, sometimes they are equally valid for items belonging to different categories. In this sense, the περὶ τῶν καθόλου λόγων, a forgery wrongly attributed to Archytas, fares much better, for it endeavours to clearly indicate the common and the proper attributes of the categories, even though it has no clue what their original intent is.

8 This explains why it is said that "if it happens that the same thing is a quality and a relative there is nothing absurd in its being counted in both the genera" (11a37–8) – on the proviso that the particular cases be qualities but not relatives (11a35–6), the *same thing* here referring only to the same *generic* thing. Otherwise the assertion would clash with Aristotle's practice of distinguishing senses in order to prevent that the same item belong to more than one category under the same aspect.

9 Soul is mentioned at 2 1a26, 1b2, 8 9b34, 11 14a18, always in connection with qualities that are present in individuals because they are present in the soul of these individuals, without prompting Aristotle to investigate the nature of soul.

10 I leave aside the problem that Chapter 9 collects two categories together, doing and being-affected, whereas Chapters 5 to 8 deal each with only one category.

11 Minio-Paluello edits 11b1–2 as follows: ἐπιδέχεται δὲ καὶ τὸ ποιεῖν καὶ πάσχειν ἐναντιότητα καὶ τὸ μᾶλλον καὶ τὸ ἧττον. On his construal, the first καί is naturally taken

in the sense of "also", which favours the idea that this passage follows another one in which the same features are asserted. But other manuscripts and the Oxyrhynchus papyrus POxy 2403 have ἐπιδέχεται δὲ καὶ τὸ ποιεῖν καὶ τὸ πάσχειν, in which the first καί is correlated to the second one, referring to both doing and being-affected, and no longer points to a passage mentioned before.

12 When examining the third kind of quality (affective qualities and affections), Aristotle excludes from them affections that easily fade away, as when someone reddens through shame, or pales through fear (9b28–33). The person reddened through shame is said to be affected somehow (9b32: πεπονθέναι τι), which makes one wonder whether it should be classified within the category of being-affected.

13 The papyrus POxy 2403 has four fragments, the first of which runs from 8 11a25 to 9 11b2. It is quite interesting to note that there is a sign in front of b1 to indicate the beginning of a new chapter, which exactly corresponds to our division between Chapters 8 and 9. But this only proves that our current text is quite similar to the ones current in the third century of our era (the most likely date of this papyrus).

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2 Are the Same Thoughts Shared by All People?

Katerina Ierodiakonou

The abundance of books and articles discussing the first chapter of Aristotle's *De Interpretatione* is notable. Questions concerning how this chapter fits with the rest of the treatise and whether it actually presents the Aristotelian theory of signification have often been raised and various interpretations have been offered. There is an issue, however, that has drawn much less attention, although it concerns a genuinely puzzling statement right in the first lines (*Int.* 16a3–9). As is well known, Aristotle said that written marks and spoken sounds are not the same for all people, whereas affections of the soul and actual things are the same. Supposing, then, that when Aristotle talked of affections of the soul he meant thoughts – as many Aristotelian scholars seem to have assumed – was he correct to claim that the same thoughts are shared by all people? Did he really mean that any time, for instance, two people think of a horse or of justice, their thoughts are identical? John Ackrill (1963: 113–14) lists among the "grave weaknesses" in Aristotle's theory of signification the fact that "it is not true that all men meet the same things or have the same thoughts"; he even adds that "Aristotle would have made his point more cogently if he had said that different men *may* share the same thought".

But it is not only contemporary readers of Aristotle's logical treatise who have been perplexed by his statement. The Greek and Latin Aristotelian commentators of late antiquity were also intrigued by the opening lines of the *De Interpretatione* and undertook to explain what Aristotle could have meant by claiming that all people share the same thoughts. In this chapter, I closely study their different interpretations and, in particular, I focus on Alexander of Aphrodisias' views, which I try to reconstruct on the basis of the available scarce evidence. Briefly stated, I argue that Alexander seems to have drawn a distinction, which was not later endorsed by the Neoplatonists, between affections of the soul and thoughts; affections of the soul result from the reception of the forms of perceptible things and are the same for all people, whereas thoughts are abstract concepts or combinations of abstract concepts and may differ. My contention is that, according to Alexander, Aristotle understood affections of the soul in this way, that is, as clearly distinct from thoughts, when he rightly claimed that they are shared by all people.[1]

1.   *De Interpretatione* 16a3–9

Let me start by quoting in translation the relevant passage from the *De Interpretatione*:

> Now what is in spoken sound are symbols of affections in the soul, and writ-
> ten marks symbols of what is in spoken sound. And just as letters are not the
> same for all people, neither are spoken sounds. But what these spoken sounds
> are in the first place signs of are the same affections of the soul for all; and
> what these affections are likenesses of are also the same actual things. These
> matters have been discussed in the work on the soul and do not belong to the
> present treatise.
>
> <div align="right">(Aristotle, Int. 16a3–9; trans. Ackrill 1963, modified)[2]</div>

Four items are mentioned in this passage, namely actual things (πράγματα), affec-
tions in the soul or of the soul (τὰ ἐν τῇ ψυχῇ παθήματα, παθήματα τῆς ψυχῆς), what
is in spoken sound or spoken sounds (τὰ ἐν τῇ φωνῇ, φωναί),[3] and written marks or
letters (γραφόμενα, γράμματα). At first blush, Aristotle claims that written marks are
symbols (σύμβολα) of spoken sounds, spoken sounds are symbols and signs (σημεῖα)
of affections of the soul, and affections of the soul are likenesses (ὁμοιώματα) of ac-
tual things. He also claims that written marks and spoken sounds are not the same for
all people, whereas affections of the soul and actual things are the same.

The interpretation of these few lines, however, is far from being as straightfor-
ward as that; there are indeed many points in this passage, which have aroused
endless debates among the Aristotelian scholars of all periods in the history of
philosophy. For instance, is there a difference between what is in spoken sound and
spoken sounds or between written marks and letters? How should we differenti-
ate "symbols", "signs", and "likenesses"? What does it mean that spoken sounds
are *in the first place* signs of affections of the soul? Is this passage consistent with
other Aristotelian treatises, for instance, the *Sophistical Refutations* (165a6–10), in
which spoken sounds are said to be symbols of actual things and not of affections
of the soul?[4] These are not the questions I am interested in, here; rather, I want to
investigate the different explanations that were given in antiquity of Aristotle's
seemingly innocent statement that affections of the soul are the same for all people.

2.   The Ancient Debate

2.1   *Παθήματα τῆς ψυχῆς*

To begin with, Aristotle's use of the phrase "παθήματα τῆς ψυχῆς" caused much tur-
moil among the Aristotelian exegetes. For although Aristotle explicitly states that he
discussed these matters in the *De Anima* (*Int.* 16a8–9), it is not at all clear to which
particular passage he refers, since in the relevant passages from his psychological
treatise he talks about thoughts (νοήματα)[5] and not about affections of the soul.[6] In

fact, it is for this reason that the first organiser of the Aristotelian corpus, Andronicus of Rhodes, is reported to have claimed that the *De Interpretatione* is inauthentic.[7]

But declaring spurious the whole treatise did not gain much support among the ancient commentators. On the contrary, they kept the first lines of the *De Interpretatione* intact, and most of them claimed that Aristotle's reference to the *De Anima* makes perfect sense since affections of the soul should be understood, in this passage, as referring to thoughts. For instance, in his commentary on the *De Interpretatione*, the Neoplatonist commentator of the late fifth to early sixth century Ammonius of Hermias repeats, again and again, that the affections of the soul signified by spoken sounds are nothing but thoughts:

> Therefore, those first entities of which what is in spoken sound are signs – i.e. are significant, as being symbols – these are thoughts, which are affections of the soul and the same among all people, and hence by nature.
> (Ammonius, *In Int.* 24.10–2 Busse; trans. Blank, modified. See also,
> Ammonius, *In Int.* 6.4–7.14; 22.18–20 Busse)[8]

Most importantly, it seems that the identification of thoughts with affections of the soul allows Ammonius to claim, without any hesitation, that in Aristotle's view thoughts are naturally the same for all people.[9] And we find exactly the same position in the seventh-century paraphrase of the *De Interpretatione* by another Neoplatonist commentator, namely, Stephanus, who also uses the same example that Ammonius (*In Int.* 19.10–2 Busse) used before him for illustrating a thought shared by all:

> It is reasonable, then, for him [i.e. Aristotle] to apply "likenesses" to thoughts, since it is not possible for me to think of a horse in one way and for that person in another.
> (Stephanus, *In Int.* 6.9–11 Hayduck;
> trans. Charlton, modified)[10]

2.2　Peripatetic Doubts

There is some textual evidence, though, that the Peripatetics after Aristotle questioned his statement that affections of the soul are the same for all people; this is at least what we read in Boethius' second commentary on the *De Interpretatione*, which is of invaluable help in our attempt to reconstruct the lost commentaries on this logical treatise by Aspasius, Herminus, Alexander of Aphrodisias, and Porphyry. More specifically, according to Boethius, the second-century Peripatetic commentator Aspasius as well as Herminus, the teacher of Alexander of Aphrodisias, found it difficult to accept the claim that all people share the same affections of the soul or, assuming that affections of the soul refer to thoughts, that all people share the same thoughts.

Aspasius, Boethius tells us, puzzled over the Aristotelian statement that affections of the soul are the same for all people because people often express divergent opinions concerning, for instance, the nature of what is just or what is good:

> Aspasius finds himself in great difficulties on this point. How, he wonders, is it possible that the affections of the soul are the same for all people when

there is such a diverse opinion on the just and the good? Aspasius thinks that Aristotle meant the affections of the soul have nothing to do with incorporeal things but only with things that can be perceived by the senses.

(Boethius, *In Int*. II 41.13–9 Meiser; trans. Smith 2010, modified)[11]

Boethius, here, gives us a hint about the way Aspasius explained Aristotle's baffling claim. He points out that, in Aspasius' view, the soul's affections mentioned in the first lines of the *De Interpretatione* should be understood as resulting from the perception of actual things and not as abstract concepts, like the just or the good.

Herminus also argued, according to Boethius' report in the following passage, that Aristotle could not have meant that thoughts are the same for all people, although his suggestion differs from that of Aspasius. He claimed that in cases of equivocation people may not share the same thoughts, because in such cases it is possible that two people, for instance, entertain two different thoughts that are signified by one and the same spoken sound. Herminus thus emended Aristotle's text by substituting in line 16a6 "ταὐτά", i.e. "the same", with "ταῦτα", i.e. "these", so as to read "these are affections of the soul" instead of "affections of the soul are the same". Besides, such an emendation would not have involved changes in the original text, which was written in capital letters and without accents, and hence allowed both readings:[12]

> For he [i.e. Herminus] says it is not true that thoughts, which spoken sounds signify, are the same for all people. For what, he says, is expressed in equivocation, when one and the same type of spoken sound signifies more than one thing? He thinks the following is a more truthful reading: "Now what these are in the first place signs of, these are affections of the soul for all; and what these affections are likenesses of, these too are things", so that here is apparently demonstrated what spoken sounds signify or what affections of the soul are likenesses of. According to Herminus, all we must take from this is that affections of the soul are what spoken sounds signify as though he said "affections of the soul are what spoken sounds signify" and "what those that are contained in thoughts are likenesses of are things", which is the equivalent of saying "things are what thoughts signify".
>
> (Boethius, *In Int*. II 39.26–40.9 Meiser; trans. Smith 2010, modified)[13]

Most commentators, however, did not take Herminus' emendation seriously and instead made an effort to understand the Aristotelian claim without modifying it.[14] Still, it is interesting to consider his motivation for offering a different reading of Aristotle's text rather than following Aspasius' interpretation.[15] For, in Herminus' view, at least the way Boethius presents it, Aristotle could not have stated that all people share the same thoughts since he was well aware of the fact that there are cases when one and the same spoken sound signifies more than one thing. For instance, when someone utters "dog" (κύων), to use a standard ancient example, it may be that the speaker thinks of the domestic animal, whereas the listener thinks of the Dog Star, the dogfish, or even the Cynic philosopher. So it could be suggested that Herminus opted for his radical reading, because he thought that

restricting Aristotle's puzzling statement to cases of perceptible things cannot settle the issue, as Aspasius seems to have thought, since even in such cases we may confront the difficulty raised by ambiguous terms. Nevertheless, this suggestion remains speculative since there is no additional textual evidence to further support it.

2.3   The Neoplatonists' Replies

Aspasius and Herminus, therefore, tried to deal with what they believed was a counter-intuitive statement, namely, that affections of the soul, understood as thoughts, are the same for all people. Aspasius restricted its reference to cases of perceptible things, whereas Herminus tried to efface it from Aristotle's text. On the other hand, there were ancient commentators who insisted that the Aristotelian statement makes perfect sense. Boethius tells us that Porphyry was right to endorse Alexander's position, according to which there is no reason to adopt Herminus' emendation since equivocation is eliminable, and we can therefore preserve the claim that spoken sounds signify one and the same thought. For in oral communication, Boethius adds, if the speaker thinks about and expresses a certain thought but the listener thinks about something different, the speaker should simply make plain what is said and the listener should accept it so that they both agree on one and the same thought (Boethius, *In Int*. II 40.12–22 Meiser).[16]

    As for the doubt raised by Aspasius, Boethius also suggests a reply, without stating in this case whether it is his own or whether it was given by one of his predecessors, for instance, Porphyry or Alexander:[17]

> But he [i.e. Aspasius] is wrong, for the person who errs is never said to have understood, and the person who thinks of what is good but not in the same way as it is but differently, will perhaps be said to have had an affection of the soul of sorts, but will certainly not be said to have understood. Now when Aristotle talks about likeness he is making statements about understanding. For it is impossible that people who think what is good is bad have conceived in their mind the likeness of the good. For they have not understood the thing that underlies, but since what is just and good may be so by convention or nature, and if they are talking about what is just and good in terms of civil law or injustice, the affections of the soul are certainly not the same, because civil law and civil good are by convention rather than by nature. But natural good and justice is the same for all nations. And in the case of god, too, though his worship may be diverse, there is an identical understanding of a certain pre-eminent nature.
>   (Boethius, *In Int*. II 41.19–42.6 Meiser; trans. Smith 2010, modified)[18]

It is noteworthy that Boethius, here, expands Aspasius' claim into a view on conventional as opposed to natural justice and good. He stresses that there is no disagreement among people when these concepts are used to signify what is just and good by nature, and similarly, in the case of the concept of god, there is no disagreement when it comes to his real nature. Furthermore, in this response to

Aspasius, Boethius distinguishes the true understanding of what is just and good from simply having different opinions on these matters. He argues that it is only in the cases of natural justice and natural good that we can talk of true understanding; in such cases, all people have the same affections and, if their opinions differ, it is clearly due to misconception. On the other hand, in the cases of civil justice and civil good, it is indeed possible for people to entertain different thoughts that are all perfectly acceptable since in such cases people's affections signify what is simply by convention and thus may differ.

A similar defence of Aristotle's statement that people share the same thoughts is also to be found in two comments written in Byzantium, which are so much alike that either the one is a copy of the other or both have a common source. The first comment is by Michael of Ephesos, the 12th-century Aristotelian commentator in the intellectual circle of the princess Anna Komnene,[19] while the second is by Leo Magentenos, a late-12th- or early-to-mid-13th-century scholar about whose life we know very little.[20] Both comments make the surprising claim that it was Alexander, rather than Aspasius or Herminus, who objected (ἐνίσταται) to the view that all people share the same thoughts on the basis that our thoughts of the same thing are often quite different. Even though the attribution of this objection to Alexander is problematic, since it is not supported by any other source, at least these Byzantine comments provide us with a response to the Peripatetic doubts, according to which all people share the same thoughts because, when different thoughts signify the same thing, only the true one (τὸ ἀληθές) should be properly called a thought (καλοῦμεν κυρίως νόημα).[21] This response of course reminds us of the cases of natural justice and natural good since Boethius, too, talks of a single thought that is properly said to signify the true nature of these concepts, a single thought that is shared by all people. It is reasonable to suspect, therefore, that both authors of the Byzantine comments as well as Boethius may have adopted this position from the same ancient commentator, which could have been Porphyry.[22]

3. Alexander of Aphrodisias' Interpretation

3.1 Boethius' Testimony

Apart from Aspasius, the ancient and Byzantine commentators seem to have all assumed that in Aristotle's controversial statement, which claims that the same affections of the soul are shared by all people, the soul's affections should be understood as thoughts. But is there perhaps another commentator who does not subscribe to this view? According to Richard Sorabji (2012: 631), although the Neoplatonist commentators claimed that παθήματα τῆς ψυχῆς, which he translates as "experiences", refer to thoughts, Alexander of Aphrodisias was "presumably" of a different opinion:

> In equating experiences with thoughts, the ancient commentators did not by "thoughts" mean thinkings [i.e. acts of thinking], but thoughts that we think. Presumably the experiences were not thoughts for Alexander, because he

regards what is in spoken sounds to be thoughts, which suggests that thoughts are merely symbols of experiences, not identical with them.

In other words, Sorabji claims that Aristotle's phrase "what is in spoken sound" (τὰ ἐν τῇ φωνῇ) was interpreted by Alexander as standing not for spoken sounds (φωναί) but for thoughts (νοήματα). This implies that Alexander clearly distinguished between thoughts and affections of the soul since what is in spoken sound, i.e. thoughts, are said to be symbols of affections of the soul. Sorabji (2012: 636–7) thus proposes that, according to Alexander, and in contrast to the Neoplatonists, it is only the soul's affections and not thoughts that can be said to be likenesses of actual things:

> Alexander's remarks suggest a divergence from the Neoplatonist interpretation that thoughts are likenesses of things. Instead, thoughts are rather symbols of experiences and it is only the experiences that are likenesses of things.

The only passage, however, that Sorabji (2012: n.3) mentions in support of his interpretation is the following:

> And Alexander tries to explain the passage [i.e. Now what is in spoken sound are symbols of affections in the soul, and written marks symbols of what is in spoken sound. And just as letters are not the same for all people, neither are spoken sounds.] in this way. He meant, he says, that things that are in spoken sound (*ea quae sunt in voce*) signify (*designare*) thoughts of the mind (*intellectus animi*) and proves this with another example.
>
> <div style="text-align:right">(Boethius, In Int. II 35.21–9 Meiser; trans. Smith 2010)[23]</div>

But Boethius does not say, in this passage, that things in spoken sound are identical with thoughts, and thus, he does not distinguish between thoughts and affections of the soul. He simply states that, according to Alexander, things that are in spoken sound, i.e. spoken sounds, signify thoughts in the sense that they are symbols of thoughts. For the verb "*designare*" should be understood, here, just like in the following passage and in other nearby passages of Boethius' commentary (e.g. *In Int.* II 34.26 Meiser), as having the sense "to be a symbol of something" rather than "to mean something".[24]

Besides, the example that comes right after this passage is not an example illustrating that things in spoken sound are identical with thoughts, but an example illustrating how to understand that things in spoken sound are symbols of thoughts. For things in spoken sound, i.e. spoken sounds, are said to be symbols of thought in exactly the same way written marks are symbols of spoken sounds, and this explains, in Alexander's view, why both spoken sounds and written marks are not shared by all people:

> For what is in spoken sound signifies (*significant*) affections of the soul in the same way as what is written signifies (*designant*) spoken sounds. We

therefore understand the phrase *and those things that are written* as if he said "just as those things that are written are [signs] of the things that are in spoken sound". That what is written, Alexander said, is a sign of spoken sounds, i.e. names and verbs, he showed from his words "and just as letters are not the same for all men, neither are spoken sounds". For it is an indication that the signification of the spoken sounds themselves is contained in the letters that when the letters vary and what is written is not the same, the spoken sounds must also differ. This is Alexander's interpretation.

(Boethius, *In Int*. II 35.29–36.10 Meiser; trans. Smith 2010)[25]

So there is no indication, at least not here, that Boethius ascribes to Alexander the view that things in spoken sound are identical with thoughts and thoughts are symbols of affections of the soul. But is there any other textual evidence on the basis of which we could support Sorabji's insight that Alexander clearly distinguished between the soul's affections and thoughts? And if there is some evidence, what does such a distinction amount to, and how did Alexander use it in order to interpret Aristotle's perplexing claim that all people share the same affections of the soul?

Earlier in his second commentary on the *De Interpretatione*, Boethius (*In Int*. II 25.15ff Meiser) mentions the different ways in which Herminus, Alexander, and Porphyry tried to explain the reason that Aristotle included his theory of signification at the beginning of this logical treatise.[26] Herminus, Boethius claims, did not offer any good argument to support his view that Aristotle's aim was "to inculcate the usefulness of the book he was composing" (*In Int*. II 25.22–26.1 Meiser). Alexander made a different suggestion, according to which names and verbs, whether on their own or combined in sentences, take their meaning from their content, and since their content consists in what they signify, Alexander conjectured that Aristotle had decided to start the *De Interpretatione* by stating in few lines what the spoken sounds are meant to signify (*In Int*. II 26.1–12 Meiser). Boethius thinks that, although Alexander managed to understand better than Herminus the purpose behind the insertion of these lines, still he "did not properly disentangle the main reason for Aristotle's treatment" (*In Int*. II 26.14–7 Meiser).

Finally, Boethius presents Porphyry's explanation, which he himself adopts as the correct one. According to Porphyry (*In Int*. II 26.17ff. Meiser), Aristotle's predecessors had a lively debate about the signification of spoken sounds and he simply wanted to put forward his own position on this issue. For some ancient philosophers claimed that spoken sounds signify actual things, others defended the view that they signify incorporeal natures (*incorporeas naturas*) similar to the Platonic Ideas, others that they signify sensations or sense perceptions (*sensus*), and still others that they signify images (*imaginationes*). Aristotle, on the other hand, is said to have argued that spoken sounds signify thoughts, which clearly differ from sense perceptions and images. To support Porphyry's interpretation, Boethius quotes in the original a sentence from Aristotle's lost dialogue *De Justitia*,[27] which states that there is a natural distinction between thoughts and sense perceptions (*In Int*. II 27.14–5 Meiser);[28] if there was no such distinction, Boethius comments, Aristotle would have talked of affections of the body rather than of the soul (*In Int*.

II 27.18–25 Meiser). And for further support, Boethius quotes in addition a passage from the *De Anima* (III 8, 432a10–4),[29] according to which thoughts are clearly distinguished from images, even though they cannot be formed without them (*In Int*. II 28.3–7 Meiser). Hence, Boethius concludes (*In Int*. II 29.13–6 Meiser), when Aristotle claimed that spoken sounds signify affections of the soul, he must have meant that they signify thoughts and not sense perceptions or images.

It should be noted, though, that Boethius' adopted interpretation also stresses the fundamental role of perception and imagination in the process of forming thoughts, right in accordance with the passage from the *De Anima* that he himself quotes. In fact, he even depicts the relation between perception, imagination, and thinking with an analogy from painting:

> For just as painters are accustomed to outline a body and make it underlie where they intend to express someone's face in colours, in the same way a sensation and image naturally underlie the perception of the soul. For when something falls under sensation or under thought, firstly an image of it must be born, then a fuller thought supervenes and distinguishes all its parts which in the image had been previously represented in a confused way.
> (Boethius, *In Int*. II 29.3–10 Meiser; trans. Smith 2010, modified)[30]

Moreover, later on in his second commentary, Boethius returns to the importance of perception in thinking and makes clear that it is in perception that the soul receives from actual things their forms, on the basis of which it generates thoughts:

> For when someone thinks of some thing he must first receive through an image the form and specific character of the thing thought, and there must occur either an affection or a mental perception (*intellectus perceptio*) accompanied by some affection. When this is placed and fixed in the recesses of the mind, there occurs a will (*voluntas*) to convey the affection to another person. A certain forceful drive (*actus*) to continue the thinking comes next from the power of deepest reason. Speech explicates this and expresses it, relying on the affection that was first established in the mind or, more precisely, on the signification that has developed along with the developing speech which adapts itself to the movements of the signifying (inner) speech.
> (Boethius, *In Int*. II 34.2–19 Meiser; trans. Smith 2010, modified)[31]

That is to say, Boethius seems to recognise different stages in a process that starts from receiving the forms of actual things and ends with their being signified by spoken sounds; the forms of actual things either affect us or are perceived by the mind together with an affection in a way described as *intellectus perceptio*, and it is on the basis of these affections that our intellect generates the thoughts signified by spoken sounds.

Boethius, most probably, follows Porphyry in his account. But did Porphyry follow Alexander? Did Alexander accept that spoken sounds are signs of thoughts and not of actual things, images, or sense perceptions? Boethius (*In Int*. II 40.30–41.11

Meiser) tells us that Alexander puzzled over Aristotle's statement that spoken sounds are *in the first place* signs of affections of the soul and not of actual things, given that spoken sounds are indeed the names of things. The explanation Alexander offered was, according to Boethius' report, that we use spoken sounds in order to signify not actual things but those "affections of the soul that are produced in us from the things" (*In Int.* II 41.10–1 Meiser);[32] and these affections of the soul Boethius identifies with thoughts, in accordance with his own understanding of the first lines of the *De Interpretatione*. So the question remains: Did Alexander himself identify the soul's affections with thoughts, or did he rather draw a clear distinction between them, so that he could claim that spoken sounds are symbols of thoughts, thoughts are symbols of affections of the soul, and affections of the soul are likenesses of actual things? Since Boethius' comments do not give us any further clue on this issue, we need to examine what else we know about Alexander's theory of cognition.

3.2   *Alexander in His Own Words*

In his surviving writings, Alexander hardly uses the term "παθήματα" and never contrasts it with the term "νοήματα",[33] which appears often enough in his commentaries as well as in his own treatise *De Anima*, in the *Mantissa*, and in the *Quaestiones*. In fact, his references to νοήματα, understood as the internal objects of νοεῖν, i.e. as thoughts or concepts, have drawn the attention of many contemporary scholars whose interest principally lies in Alexander's theory of universals (καθόλου).[34] Some of the issues discussed by them bear upon his account of the relation between forms and universals, upon the way universals are generated, and upon his views on their ontological status. Needless to say, such issues become part of my present inquiry only insofar as they pertain to Alexander's explanation of the first lines of the *De Interpretatione*, so a great deal of interesting points in his analysis of universals are admittedly brushed over, here, and remain unexamined.

It is generally agreed that Alexander makes a novel distinction between, on the one hand, what it is to be a form or nature and, on the other hand, what it is to be a universal. Universals must actually belong to more than one particular thing, which implies that there can be no universals of individuals – for instance, the sun, the moon, or the universe – whereas forms do not need to belong to more than one particular thing, so that even individuals have forms. Moreover, Alexander claims that, in contrast to universals, forms are in themselves neither particular nor universal; they are particular and perceptible when they exist in perceptible things, but have the potentiality for becoming universal when they are turned into actually intelligible objects, i.e. into thoughts or universals:[35]

> Therefore, in the case of forms that are in matter, as I said, whenever such forms are not being thought, none of them is intellect, if it is in their being thought that their being intelligibles has its existence (ὑπόστασις). For the universal (καθόλου) and common (κοινόν) things have their being (ὕπαρξις) in the individuals that are in matter; but once they are thought separated

from matter they come to be common and universal, and they are intellect at the time when they are thought. But if they are not thought, they are not any more [i.e. do not exist any more at all].[36] So, when they are separated from the intellect that thinks them, they perish, if their being (εἶναι) consists in being thought. And similar to these are the products of abstraction (ἐξ ἀφαιρέσεως), such as mathematical [entities]. So this sort of intellect – that is, thoughts (νοήματα) of this sort – is perishable.

<div style="text-align: right">

(Alexander, *De An*. 90.2–11 Bruns; trans. Sharples (Sorabji 2004: 152), modified)[37]

</div>

That is to say, forms are actually intelligible if and only if they are abstracted by an intellect or, in other words, if and only if they are thought. This actualisation takes place, just as it happens in the case of mathematical entities, when the intellect abstracts or, more precisely, separates (χωρίζειν) potentially intelligible forms from their matter.[38] But such a separation, according to Alexander, should be differentiated from the one involved in perception, when the soul receives through the senses the forms of actual things without their matter:

> Just as active perception occurs through the reception of perceptible forms without the matter, so too thinking is a reception of forms separate from matter. But it differs from perceptual grasping in the following respect; even though it is not as matter that perception receives perceptible forms, it nevertheless has a grasping of them as being in matter . . . The intellect then does not receive forms by becoming like matter, nor does it receive them as being combined with matter, in the way perceptible things are received, rather it contemplates them by separating them by themselves from all material circumstances and receiving only them.
>
> <div style="text-align: right">

(Alexander, *De An*. 83.13–84.9 Bruns)[39]

</div>

Similarly, a couple of pages later (Alexander, *De An*. 86.28–87.23; see also, 83.2–13 Bruns), Alexander claims that, although perception does not receive the forms as matter, it nevertheless receives them as being in matter since perception is the cognitive capacity that grasps "this item" (τόδε), i.e. the form of a particular thing; next, the intellect thinks of the forms entirely separate from matter since thinking is the cognitive capacity that grasps not "this item" but "this item's being" (τὸ τῷδε εἶναι), i.e. the universal. So if forms are not separated by an intellect, they are only potentially intelligible and exist not as abstract thoughts or universal concepts but merely as enmattered perceptible forms. Universals are therefore regarded as posterior to forms, dependent on thinking, and perishable.[40]

Given Alexander's distinction between forms and universals, is it now possible to reconstruct his position concerning the relation of the soul's affections to thoughts? It makes sense to think that Alexander, just like Aspasius before him, claimed that affections of the soul are not identical with thoughts. Affections of the soul should be understood as the result of the reception by the soul of enmattered perceptible forms, that is, of the forms of actual things perceived as enmattered

but without their matter.[41] Thoughts, on the other hand, should be understood as generated, on the basis of sense perceptions, by the intellect's capacity to entirely separate the forms of actual things from their matter. Hence, both simple thoughts, i.e. concepts, as well as their combinations turn out to be mind-dependent and thus may differ since there is a chance that people do not properly conceive of what is perceived and form concepts in an inaccurate manner. Contrary to thoughts, however, the same affections of the soul are shared by all people, because the perceptible forms of actual things that are received by the soul are the same for all.

To conclude, my view is that Alexander's clear distinction between affections of the soul and thoughts allowed him to explain why affections of the soul are said by Aristotle to be the same for all people, whereas thoughts and concepts may not be shared by all. In opposition to Alexander, the Neoplatonists later identified the soul's affections with thoughts because they seem to have trivialised in the cognitive process the importance of the soul's affections as sense perceptions. For their insistence on grasping the true thoughts that signify the real nature of things brings to mind their ultimate aim at comprehending the Platonic Forms, which of course cannot be achieved by virtue of the soul's affections.

A final remark: By distinguishing between affections of the soul and thoughts, Alexander placed the soul's affections in an intermediate position between actual things and thoughts; affections of the soul are likenesses of actual things, thoughts are signs of affections of the soul, and spoken sounds are signs of thoughts. A similar intermediate position is reserved by the Stoics for the corporeal affections of the rational soul (νοήσεις) between the actual things and the so-called "sayables" (λεκτά).[42] However, the introduction of the Stoic notion of incorporeal sayables is considered as a Stoic innovation, exactly because there is no corresponding notion in Aristotle's theory of signification, according to which affections of the soul are likenesses of actual things and spoken sounds are signs of the soul's affections. Was Alexander urged to distinguish between affections of the soul and thoughts in order to compensate for this gap? There is a crucial difference between Alexander's account of νοήματα and the Stoic λεκτά.[43] For even if they are both incorporeal, Alexander's νοήματα are mind-dependent, whereas the Stoic λεκτά may not be beings (ὄντα) but they are said to subsist (ὑφιστάναι) whether someone thinks of them or not. So even if one seriously considers the possibility that Alexander realised, thanks to the Stoics, the importance of clearly differentiating the soul's affections from the abstract concepts and thoughts, his understanding of these notions was undeniably shaped by his Aristotelian heritage.

Needless to say, there is no textual evidence that lends support to the hypothesis of a Stoic influence on Alexander in this respect. There is also no way to establish for sure that the reconstruction I offered of Alexander's views on the first lines of the *De Interpretatione*, plausible though it may be, actually reflects the interpretation defended by him in his lost commentary on Aristotle's logical treatise. And, of course, one cannot be absolutely confident that Alexander's interpretation adequately explained what Aristotle himself had meant with his statement that the same affections of the soul are shared by all people. It is, in fact, this frustrating

uncertainty that Boethius expresses, in his second commentary on the *De Interpretatione*, when he reports,

> Porphyry says that some of his contemporaries interpreted this book, and because by singling out individual interpretations from Herminus, Aspasius, or Alexander they found many contradictions and inconsistencies in those poorly presented interpretations, they thought that this book of Aristotle could not be interpreted in a worthy manner, and that many men of this period bypassed the entire contents of this book because they considered its darkness incapable of explanation.
>
> (Boethius, *In Int.* II 293.27–294.4 Meiser; trans. Smith 2010, modified)[44]

Notes

1　I am grateful to Robert Roreitner and the two anonymous referees for their careful and scrupulous remarks on a previous draft of this chapter.

2　"Ἔστι μὲν οὖν τὰ ἐν τῇ φωνῇ τῶν ἐν τῇ ψυχῇ παθημάτων σύμβολα, καὶ τὰ γραφόμενα τῶν ἐν τῇ φωνῇ. καὶ ὥσπερ οὐδὲ γράμματα πᾶσι τὰ αὐτά, οὐδὲ φωναὶ αἱ αὐταί· ὧν μέντοι ταῦτα σημεῖα πρώτων, ταὐτὰ πᾶσι παθήματα τῆς ψυχῆς, καὶ ὧν ταῦτα ὁμοιώματα, πράγματα ἤδη ταὐτά. περὶ μὲν οὖν τούτων εἴρηται ἐν τοῖς περὶ ψυχῆς· ἄλλης γὰρ πραγματείας".

3　I follow Ackrill in translating "φωνή" as "spoken sound" since in the *De Anima* (II 8, 420b5–421a6), for instance, Aristotle explicitly says that φωνή is not just any sort of sound (ψόφος) but a sound that is produced by an animal and signifies something.

4　These questions and many more are raised and discussed in the extant ancient commentaries on the *De Interpretatione* (Ammonius, *In Int.* 20.1–9 Busse; Stephanus, *In Int.* 5.38–6.13 Hayduck) as well as in the numerous relevant studies of contemporary scholars; see, for instance, Kretzmann (1974); Irwin (1982); Pépin (1985); Chiesa (1986); Polansky and Kuczewski (1990); Barnes (1993); Weidemann (1994: 134–53); Whitaker (1996: 9–25); Sedley (1996 and 2004); Di Mattei (2006).

5　I translate "νόημα" as "thought", rather than as "concept", since Aristotle refers in the *De Interpretatione*, just as he does in the *De Anima* (e.g. III 6, 430a26–8; III 8, 432a10–4), not only to concepts, which are neither true nor false, but also to combinations of νοήματα, which can be said to be true or false.

6　Aristotle uses only twice the term "πάθημα" in the *De Anima* (I 1, 403a11 and 20); he uses more often the phrase "πάθος τῆς ψυχῆς", by which he refers to what we nowadays consider as emotions, for instance, anger or fear (e.g. I 1, 403a16; b17), but also to all kinds of affections of the soul, for instance, perception (e.g. I 1, 402a9; 403a3; I 4, 408a4; I.5, 409b15).

7　Ammonius, *In Int.* 5.24–6.4 Busse; Boethius, *In Int.* II 12.26–8 Meiser; Philoponus, *In De an.* 27.21–9 Hayduck; 45.7–11 Hayduck. For a reconstruction of Alexander's position concerning the authenticity of the *De Interpretatione*, see Bonelli (2009: 57–63). In order to defend the authenticity of the *De Interpretatione* from Andronicus' worries, some contemporary scholars, for example Maier (1900: 37) and Moraux (1973: 119), suggest to move the part of the text referring to the *De anima* after the next sentence, in which Aristotle actually uses the term "νόημα" (*Int.* 16a9–11: "Ἔστι δέ, ὥσπερ ἐν τῇ ψυχῇ ὁτὲ μὲν νόημα ἄνευ τοῦ ἀληθεύειν ἢ ψεύδεσθαι, ὁτὲ δὲ ἤδη ᾧ ἀνάγκη τούτων ὑπάρχειν θάτερον, οὕτω καὶ ἐν τῇ φωνῇ").

8　"ὧν τοίνυν πρώτως σημεῖά ἐστι τὰ ἐν τῇ φωνῇ, τοῦτ' ἔστι σημαντικὰ ὡς σύμβολα ὄντα, ταῦτα νοήματά ἐστι παθήματα ὄντα τῆς ψυχῆς καὶ ὄντα παρὰ πᾶσι τὰ αὐτά, διὸ καὶ φύσει".

9 For a line-by-line analysis of Ammonius' commentary on the first chapter of the *De Interpretatione* and, in particular, of the 285 lines in Busse's edition that are devoted to lines 16a3–9 of Aristotle's text, see Brunschwig (2008: 55–78).

10 "εἰκότως οὖν καὶ ἐπὶ μὲν τῶν νοημάτων ὁμοίωμα εἶπεν, διότι ἀδύνατόν ἐστιν ἄλλως καὶ ἄλλως νοῆσαι ἵππον, καὶ ἄλλως ἐκεῖνον".

11 "In hoc vero Aspasius permolestus est. ait enim: qui fieri potest, ut eaedem apud omnes passiones animae sint, cum tam diversa sententia de iusto ac bono sit? arbitratur Aristotelem passiones animae non de rebus incorporalibus, sed de his tantum quae sensibus capi possunt passiones animae dixisse".

12 Herminus' emendation is also reported by Ammonius (*In Int.* 24.12–21 Busse), although Ammonius does not give any information about the reasons that led Herminus to propose it; see Magee (1989: 10–14) and Brunschwig (2008: 72–3).

13 "dicit enim non esse verum eosdem apud omnes homines esse intellectus, quorum voces significativae sint. quid enim, inquit, in aequivocatione dicetur, ubi unus idemque vocis modus plura significat? sed magis hanc lectionem veram putat, ut ita sit: quorum autem haec primorum notae, hae omnibus passiones animae et quorum hae similitudines, res etiam hae: ut demonstratio videatur quorum voces significativae sint vel quorum passiones animae similitudines. et hoc simpliciter accipiendum est secundum Herminum, ut ita dicamus: quorum voces significativae sunt, illae sunt animae passiones, tamquam diceret: animae passiones sunt, quas significant voces, et rursus quorum sunt similitudines ea quae intellectibus continentur, illae sunt res, tamquam si dixisset: res sunt quas significant intellectus".

14 Herminus' emendation survives only in the first correction of cod. Ambrosianus L 93 sup. (n) and in the Syriac translation by George Bishop of the Arabs (Γ), which are both quoted in the critical apparatus of Weidemann's 2014 edition of the *De Interpretatione*.

15 On the ancient sources suggesting that Herminus was a pupil of Aspasius, see Moraux (1984: 361–3).

16 For a detailed discussion of Boethius' reply to the raised difficulty of equivocation, see Ebbesen (1990: 162–5).

17 Both Magee (1989: 74) and Ebbesen (1990: 159) claim that Boethius' reply to Aspasius' puzzlement is most probably also based on Porphyry's commentary. For a systematic reconstruction of Boethius' response to Aspasius, see Magee (1989: 73–4).

18 "quod perfalsum est. neque enim umquam intellexisse dicetur, qui fallitur, et fortasse quidem passionem animi habuisse dicetur, quicumque id quod est bonum non eodem modo quo est, sed aliter arbitratur, intellexisse vero non dicitur. Aristoteles autem cum de similitudine loquitur, de intellectu pronuntiat. neque enim fieri potest, ut qui quod bonum est malum esse arbitratur boni similitudinem mente conceperit. neque enim intellexit rem subiectam. sed quae sunt iusta ac bona ad positionem omnia naturamve referuntur. et si de iusto ac bono ita loquitur, ut de eo quod civile ius aut civilis iniuria dicitur, recte non eaedem sunt passiones animae, quoniam civile ius et civile bonum positione est, non natura. naturale vero bonum atque iustum apud omnes gentes idem est. et de deo quoque idem: cuius quamvis diversa cultura sit, idem tamen cuiusdam eminentissimae naturae est intellectus".

19 Michael of Ephesos' comment is included by Busse in the *supplementum praefationis* of his edition of Ammonius' commentary on the *De Interpretatione* (1897: xlvi):

"Ὁ Ἀλέξανδρος ἐνίσταται λέγων πῶς τὰ νοήματα παρὰ πᾶσι τὰ αὐτά; περὶ γὰρ τῶν αὐτῶν πραγμάτων διάφορά εἰσι νοήματα παρ' ἡμῖν. καί φαμεν πρὸς τοῦτο ὅτι ἐκ πάντων τῶν διαφόρων νοημάτων τὸ ἀληθὲς μόνον ἐν αὐτοῖς καλοῦμεν κυρίως νόημα".

On the textual evidence of this and other comments on the *De Interpretatione* by Michael of Ephesos, see Trizio (forthcoming), who argues that these comments were composed mainly for didactic purposes and not meant to be published in the form of a full-fledged commentary.

20 Leo Magentenos' comment is also included by Busse in his *supplementum praefationis*, in which he juxtaposes it to Michael's (1897: xlvi):

 "ἐπεὶ δὲ τὰ νοήματα παρὰ πᾶσι τὰ αὐτά φησιν, ἐνίσταται πρὸς τοῦτο ὁ Ἀλέξανδρος λέγων * ἐπειδὴ πολλάκις περὶ τῶν αὐτῶν πραγμάτων διάφορά εἰσι νοήματα παρ' ἡμῖν. καί φαμεν πρὸς τοῦτο ὅτι ἐκ πάντων τῶν διαφόρων νοημάτων τὸ ἀληθὲς μόνον ἐν αὐτοῖς καλοῦμεν κυρίως νόημα".

 Leo Magentenos' extant paraphrase on the *De Interpretatione* was edited by Aldus Manutius in 1503 together with Ammonius' commentary; Busse claims that it is spurious, but Bydén (2011: 685) argues to the contrary.

21 I discuss Michael of Ephesos' and Leo Magentenos' comments in my article on the Byzantine reception of Aristotle's theory of signification (Ierodiakonou 2019: §§15–23), in which I also present the relevant, though somewhat different, comments by the 15th-century Byzantine scholar and Patriarch of Constantinople George Scholarios (Gennadios II). For Scholarios, too, in his lengthy commentary on the *De Interpretatione*, replies to the objection that people may entertain different thoughts about the same thing, by pointing out that there is no disagreement among people when it comes to simple thoughts, for instance, the thought of a stone; it is only people's composite thoughts that may differ since it is only composite thoughts that are either true or false. Scholarios thus concludes that there is no reason to doubt Aristotle's claim that the same thoughts are shared by all people, at least not in the cases in which νοήματα refer to simple thoughts (*In Int.* I 103–8; 257–68 Petit). On the Greek and Latin sources of Scholarios' comments on the *De Interpretatione*, see Demetracopoulos (2010); Ierodiakonou (2011); Balcoyiannopoulou (2018).

22 Ebbesen (1990: 170) claims that Michael of Ephesos' and Leo Magentenos' comments "are scarcely intelligible if one forgets about the Porphyrian background". However, Proclus also claimed that in cases of different thoughts being signified by the same spoken sounds only one should be considered as correct, namely the expert's view; on this point Proclus may have deviated from Porphyry's view, according to which the correct thought is the one shared by the many (see van den Berg (2004) and van den Berg (2008: 81–9); Sorabji (2012: 639–40). Given that these Byzantine commentators were much influenced by Proclus, too, it becomes difficult to detect their source in this particular case due to the extreme brevity of their comments.

23 "Alexander hunc locum: sunt ergo ea quae sunt in voce earum quae sunt in anima passionum notae et ea quae scribuntur eorum quae sunt in voce. et quemadmodum nec litterae omnibus eaedem, sic nec voces eaedem hoc modo conatur exponere: proposuit, inquit, ea quae sunt in voce intellectus animi designare et hoc alio probat exemplo".

24 In Boethius' commentary, the verb "*designare*" is equivalent to the verb "*significare*", which can also have two senses, i.e. "to be a symbol of something" and "to mean something"; see, for instance, Maiser's index in his edition of Boethius' commentary and Magee (1989: 61–3).

25 "eodem modo enim ea quae sunt in voce passiones animae significant, quemadmodum ea quae scribuntur voces designant, ut id quod ait et ea quae scribuntur ita intellegamus, tamquam si diceret: quemadmodum etiam ea quae scribuntur eorum quae sunt in voce. ea vero quae scribuntur, inquit Alexander, notas esse vocum id est nominum ac verborum ex hoc monstravit quod diceret et quemadmodum nec litterae omnibus eaedem, sic nec voces eaedem, signum namque est vocum ipsarum significationem litteris contineri, quod ubi variae sunt litterae et non eadem quae scribuntur varias quoque voces esse necesse est. haec Alexander".

26 For a more systematic presentation of the different explanations suggested by Aristotle's commentators, see Magee (1989: 93–5).

27 On Aristotle's lost dialogue Περὶ δικαιοσύνης, see Moraux (1957).

28 "φύσει γὰρ εὐθὺς διῄρηται τά τε νοήματα καὶ τὰ αἰσθήματα".

29 "ἔστι δ' ἡ φαντασία ἕτερον φάσεως καὶ ἀποφάσεως· συμπλοκὴ γὰρ νοημάτων ἐστὶ τὸ ἀληθὲς ἢ ψεῦδος. τὰ δὲ πρῶτα νοήματα τί διοίσει τοῦ μὴ φαντάσματα εἶναι; ἢ οὐδὲ ταῦτα φαντάσματα, ἀλλ' οὐκ ἄνευ φαντασμάτων".

30 "nam sicut pictores solent designare lineatim corpus atque substernere ubi coloribus cuiuslibet exprimant vultum, sic sensus atque imaginatio naturaliter in animae perceptione substernitur. nam cum res aliqua sub sensum vel sub cogitationem cadit, prius eius quaedam imaginatio nascatur, post vero plenior superveniat intellectus cunctas eius explicans partes quae confuse fuerant imaginatione praesumptae".

31 "cum enim quis aliquam rem intellegit, prius imaginatione formam necesse est intellectae rei proprietatemque suscipiat et fiat vel passio vel cum passione quadam intellectus perceptio. hac vero posita atque in mentis sedibus conlocata fit indicandae ad alterum passionis voluntas, cui actus quidam continuandae intellegentiae protinus ex intimae rationis potestate supervenit, quem scilicet explicat et effundit oratio nitens ea quae primitus in mente fundata est passione, sive, quod est verius, significatione progressa oratione progrediente simul et significantis se orationis motibus adaequante. fit vero haec passio velut figurae alicuius inpressio, sed ita ut in animo fieri consuevit".

32 On Alexander's explanation of the Aristotelian statement that spoken sounds are not *in the first place* signs of actual things, see Barnes (1993: 52–3) and Bonelli (2009: 64–6).

33 Alexander uses the term 'παθήματα' very few times, mostly in cases in which he copies Aristotle's text, for instance, in his commentary on the *Metaphysics* (Alexander, *In Metaph.* 16.9; 401.15 Hayduck). As to the phrase "παθήματα τῆς ψυχῆς", we find it only in the spurious treatise *De Febribus* (27.4.8), in which it refers to affections of the soul such as anger and fear. On the authorship of the *De Febribus*, which is attributed possibly to Alexander's father, see Sharples (2005b: 53–4).

34 Pines (1961); Lloyd (1981: 49–61); Tweedale (1984) and Tweedale (1993: 79–81); Sorabji (2004: 149–52); Sharples (2005a); Rashed (2004) and Rashed (2007: 254–60); Sirkel (2011); Helmig (2012: 155–70); Schniewind (2013: 5–9); Bydén (unpublished).

35 See also, Alexander, *De An.* 85.14–25 Bruns; *Mant.* 107.15–20 Bruns; *Quaest.* I 3, 7.27–8.28; I 11, 23.25–31; 24.11–6; 2.28, 78.18–20; 79.16–8 Bruns; *In Top.* 355.18–24 Wallies; Simplicius, *In Cat.* 82.30–2 Kalbfleisch; 85.13–7.

36 Sharples rightly notes, in his translation, that this must be what the phrase "οὐδὲ ἔστιν ἔτι" implies, "though the Greek itself does not have to mean more than 'are not intellect any more'".

37 "ἐπὶ μὲν οὖν τῶν ἐνύλων εἰδῶν, ὥσπερ εἶπον, ὅταν μὴ νοῆται τὰ τοιαῦτα εἴδη, οὐδέ ἐστιν αὐτῶν τι νοῦς, εἴ γε ἐν τῷ νοεῖσθαι αὐτοῖς ἡ τοῦ νοητοῦ εἶναι ὑπόστασις. τὰ γὰρ καθόλου καὶ κοινὰ τὴν μὲν ὕπαρξιν ἐν τοῖς καθέκαστά τε καὶ ἐνύλοις ἔχει. νοούμενα δὲ χωρὶς ὕλης κοινά τε καὶ καθόλου γίνεται, καὶ τότε ἐστὶ νοῦς ὅταν νοῆται. εἰ δὲ μὴ νοοῖτο, οὐδὲ ἔστιν ἔτι. ὥστε χωρισθέντα τοῦ νοοῦντος αὐτὰ νοῦ φθείρεται, εἴ γε ἐν τῷ νοεῖσθαι τὸ εἶναι αὐτοῖς. ὅμοια δὲ τούτοις καὶ τὰ ἐξ ἀφαιρέσεως, ὁποῖά ἐστι τὰ μαθηματικά. φθαρτὸς ἄρα ὁ τοιοῦτος νοῦς, τουτέστιν τὰ τοιαῦτα νοήματα".

38 In his *De Anima*, Alexander uses for the intellection of forms "χωρίζειν/χωρίς" (e.g. *De An.* 83.15; 84.8; 20; 85.13; 87.25; 88.13; 90.5; but see *Mant.* 110.19: ἀφελεῖν; 111.16: τῇ ἀφαιρέσει; *Quaest.* II 14, 59.6–7: ἀφαιρεῖσθαι/ἀφαιρεθέντων; 15–16: κατὰ ἀφαίρεσιν/ ἀφαιρεθέντων), whereas for the formation of mathematical entities he uses the phrase "ἐξ ἀφαιρέσεως" (*De An.* 90.8 Bruns). On Alexander's theory of abstraction and mathematical entities, see Mueller (1990); Flannery (2003); Sorabji (2004: 293–4).

39 "ὥσπερ δὲ ἡ αἴσθησις ἡ κατ' ἐνέργειαν διὰ τῆς τῶν εἰδῶν τῶν αἰσθητῶν λήψεως ἄνευ τῆς ὕλης γίνεται, οὕτως δὲ καὶ ἡ νόησις λῆψις τῶν εἰδῶν ἐστι χωρὶς ὕλης, ταύτῃ τῆς αἰσθητικῆς ἀντιλήψεως διαφέρουσα, ᾗ ἡ μὲν αἴσθησις, εἰ καὶ μὴ ὡς ὕλη τὰ αἰσθητὰ εἴδη λαμβάνει, ἀλλ' οὕτως γε αὐτῶν ποιεῖται τὴν ἀντίληψιν ὡς ὄντων ἐν ὕλῃ . . . οὔτε οὖν ὡς ὕλη γινόμενος ὁ νοῦς τῶν εἰδῶν οὕτως αὐτὰ λαμβάνει οὔτε ὡς μετὰ ὕλης ὄντα ὡς τὰ αἰσθανόμενα, ἀλλ' αὐτὰ καθ' αὐτὰ χωρίζων αὐτὰ ἀπὸ πάσης ὑλικῆς περιστάσεως μόνα λαμβάνων θεωρεῖ".

40　There is a problem concerning the coherence of Alexander's account of the ontological status of universals because sometimes he seems to divert from his standard conceptualist position and follows a realist one; see especially, *Quaest.* I.11, 24.19–22 Bruns. Some contemporary scholars treat the problematic passages as inauthentic, others attempt to harmonise his allegedly conflicting views, and still others accuse him of inconsistency; for instance, see Pines (1961: 29); Lloyd (1981: 51); Tweedale (1984: 296) and Tweedale (1993: 81); Sorabji (2004: 151); Sharples (2005a: 43); Sirkel (2011: 303–4).

41　This is, after all, in line with Aristotle's account of perception in *De An.* II 12, according to which perception is not only an affection of the sense organs but presupposes that the perceiver has a soul that receives through the sense organs the forms of actual things without their matter.

42　For different interpretations of the Stoics' understanding of νοήσεις and λεκτά, see e.g. Long (1971); Barnes (1993); Frede (1994); Gourinat (2019: 142–51); Bronowski (2019: 81–125); Ierodiakonou (forthcoming).

43　There is an intriguing passage in Simplicius' commentary on Aristotle's *Categories* (*In Cat.* 9.31–10.4 Kalbfleisch), in which Simplicius claims that, according to a certain view, the Aristotelian νοήματα are said to be similar to the Stoic λεκτά. But νοήματα are understood, here, as identical with the soul's affections, and the similarity mentioned concerns merely the fact that both νοήματα and λεκτά are placed, in the respective theories of signification, between actual things and spoken sounds. There is also a passage in Ammonius' commentary on the *De Interpretatione* (*In Int.*17.20–8 Busse), which surprisingly states that the Stoic λεκτά are between πράγματα and νοήματα. If we accept, however, the reading of ὀνόματος instead of νοήματος on line 17.27, which is in cod. Laurentianus 72,7 (G) and Brunschwig (2008: n.36) rigorously defends it, Ammonius simply states that the Stoic λεκτά are between actual things and spoken sounds, which is the claim found in Simplicius' commentary and makes perfect sense.

44　"dicit autem Porphyrius fuisse quosdam sui temporis, qui hunc exponerent librum, et quoniam ab Hermino vel Aspasio vel Alexandro expositiones singulas proferentes multa contraria et expositionibus male ab illis editis dissidentia reperirent, arbitratos fuisse librum hunc Aristotelis, ut dignum esset, exponi non posse multosque illius temporis viros totam huius libri praeterisse doctrinam, quod inexplicabilem putarent esse caliginem".

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3   *De Interpretatione* 3 on Isolated Verbs

Francesco Ademollo

After treating the name (ὄνομα) in Chapter 2 of the *De Interpretatione*, in Chapter 3 Aristotle proceeds to enquire into the verb (ῥῆμα). The chapter's opening lines, 16b6–10, set forth a famous definition, which will not be our main object of study but will play an important background role. It will be helpful to quote these lines in full, as they are reported by most witnesses and printed in the editions of Waitz (1844) and Montanari (1988):

> Ῥῆμα δέ ἐστι τὸ προσσημαῖνον χρόνον, οὗ μέρος οὐδὲν σημαίνει χωρίς· καὶ ἔστιν ἀεὶ τῶν καθ᾽ ἑτέρου λεγομένων σημεῖον. λέγω δὲ ὅτι προσσημαίνει χρόνον, οἷον ὑγίεια μὲν ὄνομα, τὸ δ᾽ ὑγιαίνει ῥῆμα· προσσημαίνει γὰρ τὸ νῦν ὑπάρχειν. καὶ ἀεὶ τῶν καθ᾽ ἑτέρου λεγομένων σημεῖόν ἐστιν, οἷον τῶν καθ᾽ ὑποκειμένου ἢ ἐν ὑποκειμένῳ.
>
> A verb is what additionally signifies time, no part of which is significant separately; and it is always a sign of the things said of something other. It additionally signifies time: e.g. "recovery" is a name, but "recovers" is a verb, because it additionally signifies the thing's holding now. And it is always a sign of the things said of something other, i.e. of a subject or in a subject.[1]

Aristotle is saying that a verb has the ordinary features of a name plus other, distinctive ones of its own. So if we turn back to how names were characterised in Chapter 2, 16a19–20, we can infer that a verb, like a name, is a "spoken sound significant by convention". Indeed, Aristotle explicitly specifies here that a verb, again like a name, has no separately significant parts. But while a name was said to be significant "without time" (ἄνευ χρόνου), a verb, in "addition" to a name, also signifies *time*. Thus, the verb "recovers" not only signifies recovery, just as the name "recovery" does, but also signifies there being some recovery *now*. Furthermore, a verb "is always a sign of the things said of something other". That is to say, verbs have an essential connection with predication. There seem to be at least two aspects to this connection: on the one hand, a verb signifies an item of a nature to be predicated of something other, i.e. an attribute or property; on the other, the verb actually *predicates* such an item of something other.[2]

At the end of the passage Aristotle explains what he means by "things said of something other". He does so with a phrase transmitted by almost all witnesses as "i.e. of a subject or in a subject" (οἷον τῶν καθ᾽ ὑποκειμένου ἢ ἐν ὑποκειμένῳ, 16b10–1). This refers to the distinction advanced in *Categories* 2 between beings which "are said of a subject", i.e. essential predicates of something, and beings which "are in a subject", i.e. accidental predicates of something.[3] So here the idea seems to be that verbs are always signs of something that gets predicated *either essentially or accidentally* of something other.[4]

In the ensuing lines, 16b11–8, Aristotle defines the "indefinite verb" (ἀόριστον ῥῆμα), a term by which he refers to negated verbs such as οὐχ ὑγιαίνει, "doesn't-recover", and the "inflexion of verb" (πτῶσις ῥήματος), i.e. verbs in a tense different from the present. Then he concludes the chapter by adding a few final remarks about the signification of isolated verbs, i.e. verbs that are not parts of sentences. These remarks constitute the main subject of this paper.

Here is again the text read by the majority of witnesses and printed by Waitz (1844) and Montanari (1984, 1988):

αὐτὰ μὲν οὖν καθ᾽ αὑτὰ λεγόμενα τὰ ῥήματα ὀνόματά ἐστι καὶ σημαίνει τι – ἵστησι γὰρ ὁ λέγων τὴν διάνοιαν, καὶ ὁ ἀκούσας ἠρέμησεν – ἀλλ᾽ εἰ ἔστιν ἢ μὴ οὔπω σημαίνει· οὐδὲ γὰρ τὸ εἶναι ἢ μὴ εἶναι[5] σημεῖόν ἐστι τοῦ πράγματος, οὐδ᾽ ἐὰν τὸ ὂν εἴπῃς αὐτὸ καθ᾽αὑτὸ ψιλόν.[6] αὐτὸ μὲν γὰρ οὐδέν ἐστιν, προσσημαίνει δὲ σύνθεσίν τινα, ἣν ἄνευ τῶν συγκειμένων οὐκ ἔστι νοῆσαι.

<div align="right">(Int. 3. 16b19–25)</div>

When uttered just by themselves verbs are names and signify something – for the speaker arrests the thought and the hearer pauses – but they do not yet signify whether it is or not. For not even "to be" or "not to be" is a sign of the object – not even if you say "what is" just by itself. For by itself it is nothing, but it additionally signifies some combination, which cannot be thought of without the components.

My footnotes to the Greek text account for minor textual uncertainties; more substantial textual worries will be raised in due course.

Let us now examine the various aspects of this difficult passage one by one.

16b19–21. "When uttered just by themselves verbs are names and signify something – for the speaker arrests the thought and the hearer pauses . . ."

Aristotle here starts out by making the point that verbs uttered in isolation, i.e. not as parts of a complete sentence, still "signify something" (σημαίνει τι), i.e. retain at least their basic lexical signification, the one which they share with names, as he implied at the beginning of the chapter, and in virtue of which e.g. the verb "recovers"

signifies recovery.[7] He supports this claim with the remark that "the speaker arrests the thought and the hearer pauses". It is not immediately clear whether the thought which the speaker is said to "arrest" is his own or the hearer's.[8] It seems obvious to me, however, that the reason that we can say that a verb – or for that matter any other kind of word – signifies something is that the thoughts of *both* speaker *and* hearer come to focus on the same item. As on several other occasions in the first chapters of the *De Interpretatione*, Aristotle probably has Plato's *Cratylus* in mind, more precisely 434e–435a, where Socrates describes in the following terms what goes on when a speaker utters a name so as to indicate something to a hearer: "when I utter *this*, I think of *that*, and you recognise that I think of *that*" (ἐγώ, ὅταν τοῦτο φθέγγωμαι, διανοοῦμαι ἐκεῖνο, σὺ δὲ γιγνώσκεις ὅτι ἐκεῖνο διανοοῦμαι).[9]

Actually, Aristotle does not say only that verbs – even when uttered in isolation – "signify something"; what he says is more precisely that they "are names and signify something" (16b20). As Ammonius saw (*In Int.* 45.15–23, 54.23–5 Busse), here "and" is explanatory: Aristotle is recognising a generic sense of "name" which is equivalent to "significant expression" and is pointing out that according to this generic sense of the term verbs too are one kind of "names", along with names or nouns in the specific sense. The same generic use of "name" occurs in Plato, *Sph.* 261d–262a, where the Eleatic Stranger introduces name and verb as two different kinds of "names" or "vocal means to indicate being".

Some scholars take a different view, according to which no generic use of "name" is in play in our lines: Aristotle's point is rather that an isolated verb is bereft of its signification of time and predication and preserves only its basic, lexical signification, thus being reduced to the status of a mere name (in the specific sense of the term).[10] I find this implausible. Obviously, if you utter the word "recovers" on its own, your utterance is not equivalent to an utterance of the word "recovery". It does already signify time (we can grasp the difference between "recovers", "recovered", and "will recover" even outside the context of a sentence), and even though it does not *actually* predicate recovery of any subject, still it calls for the addition of a subject and manifests the capacity to predicate recovery of it as soon as it is added. Its predicative function is, so to speak, merely inchoate, not fully carried out, but not thereby absent.

16b21–2. ". . . but they do not yet signify whether it is or not"

Here Aristotle contrasts what verbs uttered in isolation do – i.e. signify something – with what they do not: they "do not yet signify whether it is or not" (εἰ ἔστιν ἢ μὴ οὔπω σημαίνει). His general point is clear: a single verb lacks the complexity of a complete declarative sentence, because it is only a part of it and hence has no truth value. He has already made the same claim about both names and verbs in 1. 16a13–8 and will return to it in 4. 16b26–30, and 5. 17a9–12. The parallel in Chapter 4 is especially close:[11]

ἄνθρωπος σημαίνει τι, ἀλλ᾽ οὐχ ὅτι ἔστιν ἢ οὐκ ἔστιν.
"human" signifies something, but not that it is or is not.

There has been some uncertainty among commentators as to how exactly this general point is formulated in our passage – i.e. how "whether it is or not" is to be construed. The most natural thing to do, however, both here and in 4. 16b28–9, is suppose that the subject is the previous "something" (τι) and the verb is existential: the verb signifies a certain predicate, but does not signify that that predicate is or is not, i.e. that it holds or does not hold of something,[12] unless a subject term is added.[13]

16b22. "For not even 'to be' or 'not to be' is a sign of the object . . ."

Then Aristotle goes on to supply an argument for his claim that verbs on their own do not signify "whether it is or not". In this section I focus on the first clause of this and set aside until later the second one, "not even if you say 'what is' just by itself".

The first clause is transmitted by most witnesses in the form in which I quoted it earlier:

οὐδὲ γὰρ τὸ εἶναι ἢ μὴ εἶναι σημεῖόν ἐστι τοῦ πράγματος,
for not even "to be" or "not to be" is a sign of the object.

But in due course we shall have to deal with a textual variant, read by some indirect sources, involving among other things οὐ ("not") in place of οὐδὲ ("not even").

The basic structure of the argument seems to be clear, at least on the face of it: Aristotle focuses on a particular verb – "to be" (εἶναι), along with its negation "not to be" (μὴ εἶναι) – and denies that it is "a sign of the object". This poses at least two basic questions, partly interrelated with each other. (1) How is "to be" used here? (2) What is the "object" (πρᾶγμα) which "to be" – like any other verb taken on its own – fails to signify?

The best way to proceed now is to keep these questions in mind and start by examining how Ammonius first attempts to understand our clause. Here and in what follows, I report direct quotations of Aristotle's text in spaced italics:

> And he adds this by way of a syllogism: "*for not even 'to be' or 'not to be' is a sign of the object*". This is an argument *a fortiori* that verbs do not admit truth and falsehood [κατασκευὴ ἀπὸ τοῦ μᾶλλον τοῦ μὴ δέχεσθαι τὰ ῥήματα τὸ ἀληθὲς καὶ τὸ ψεῦδος]. For if the most primitive and general of verbs, and those into which all the others are analysed [τὰ ἀρχοειδέστατα καὶ κοινότατα τῶν ῥημάτων καὶ εἰς ἃ πάντα τὰ ἄλλα ἀναλύεται], because they signify immediately holding or not holding itself, are not true or false when said by themselves, then clearly the other verbs would all the more fail to admit of one of these properties. But the first;[14] therefore the second. He assumes that of all verbs "is" and "is not", which he calls "to be" and "not to be", are the most primitive, insofar as each verb could be analysed into a participle plus one of these [ὡς ἂν ἑκάστου τῶν ῥημάτων εἴς τε μετοχὴν ἀναλυομένου καὶ θάτερον τούτων] – definite verbs into "is", indefinite ones into "is not": e.g. "runs" – "is a running item" [τρέχει – τρέχων ἐστίν], "recovers" – "is a recovering item"

[ὑγιαίνει – ὑγιαίνων ἐστίν], "doesn't-run" – "isn't a running item", "doesn't recover" – "isn't a recovering item". So if these verbs are such and therefore signify nothing true or false by themselves, then how could it make sense for those which are posterior to these, and signify holding or not holding entirely by their participation in these, to indicate anything true or false? [πῶς ἂν ἔχοι λόγον τὰ ὕστερα τούτων καὶ τὸ ὑπάρχειν ὅλως ἢ μὴ ὑπάρχειν κατὰ τὴν τούτων μετουσίαν σημαίνοντα δηλοῦν τι ἀληθὲς ἢ ψεῦδος;]

<div align="right">(In Int. 55.16–30 Busse)</div>

So Ammonius construes "to be" as the copula; I shall call this the Copula Interpretation of our lines. "To be" and its negation "not to be" are, Ammonius says, "the most primitive and most general of verbs", insofar as any other verb *V* can be analysed into a phrase composed of the copula + the participle of *V*: τρέχει, "runs", is equivalent to τρέχων ἐστίν, "is a running item" or "is an item which runs". This equivalence is indeed stated by Aristotle in several passages (*Int.* 12. 21b9–10; *An. Pr.* I 46. 51b13–6, *Metaph.* V 7. 1017a27–30). Here, according to Ammonius, it becomes the basis for an argument *a fortiori* concerning all verbs.[15]

Two objections can be raised against this interpretation at this stage.

(1) First, strictly speaking it does not really seem to provide Aristotle with an argument *a fortiori*. The argument is supposed to be that, since the copula is not equivalent to a complete sentence, then verbs in general are not equivalent to complete sentences. But the rationale which Ammonius reconstructs behind this is not that the copula is different from the other verbs because for some reason it is more sentence-like than they are so that its failure to qualify as equivalent to a complete sentence entails, *a fortiori*, that no other verb can qualify. Ammonius' point is rather that the copula is different because it is implicitly *contained* in any other verb, hence its failure to qualify as equivalent to a complete sentence is *the direct reason why* no other verb qualifies. In this respect he had better read not οὐδὲ ("not even") but rather οὐ ("not") – an alternative reading found in some indirect sources, as I have already anticipated and as we shall shortly see in more detail. Indeed, some modern interpreters adopt this modified version of Ammonius' view.[16]

(2) Secondly, and more importantly, whatever of the two variant readings you accept, the Copula Interpretation is unnatural and far-fetched. The context contains no reference whatsoever to the specific doctrine of the equivalence between verb and copula + participle; no ordinary reader would be able to detect its presence here.[17] Indeed, since the beginning of the treatise we have encountered *no* reference at all to "to be" as copula. The verb has only figured in its *existential* use, in which it has served as a stand-in for any verb – and in contexts very similar to our present one, whose point was to stress the difference between individual names or verbs and complete sentences. The first such passage was 1. 16a13–8:

Names and verbs *by themselves* [αὐτά] are like thoughts without combination and separation, e.g. "human" or "white", when nothing further is added; for they are not yet true or false, but they are a sign of something determinate.[18] For even "goat-stag" *signifies something* [σημαίνει μέν τι] but is not

yet true or false, unless *"to be" or "not to be"* [τὸ εἶναι ἢ μὴ εἶναι] is added, either simply or with reference to time.

Then came 2. 16b1–5, where Aristotle pointed out that "inflexions of names" like "Philo's" or "to-Philo" (Φίλωνος, Φίλωνι) differ from names in that

> an inflexion *when combined with "is", "was", or "will be" is not true or false* [μετὰ τοῦ ἔστιν ἢ ἦν ἢ ἔσται οὐκ ἀληθεύει ἢ ψεύδεται], *whereas a name always is*. Take, for example, "Philo's is" or "Philo's is not" [Φίλωνός ἐστιν ἢ οὐκ ἔστιν]: so far there is nothing either true or false.

Then comes chapter 3, with our passage. But if we read on, we find other examples: 4. 16b28–9, which we encountered earlier ("human" signifies something, "but not that it is or is not"), and 5. 17a11–2, which is again similar (the definition of human is not yet a declarative sentence unless you add "is", or "will be", or "was", or something like that). Briefly, each of Chapters 1, 2, 4, and 5 insists on the difference between terms and sentences and does so by recourse to examples involving the existential "to be". Copula sentences only become a subject matter in Chapter 7, with the analysis of the various kinds of quantified and non-quantified sentence and their oppositions, and then are explicitly theorised in Chapter 10. There Aristotle, after dealing with sentences with existential "to be" such as "A human is"/"A human is not" (ἔστιν ἄνθρωπος/οὐκ ἔστιν ἄνθρωπος), identifies a distinct class of sentences in which "is" "is additionally predicated as third" (19b19–20), such as "A human is just"/"A human is not just" (ἔστι δίκαιος ἄνθρωπος/οὐκ ἔστι δίκαιος ἄνθρωπος). Against this background the probability that in our Chapter 3, 16b22–3, "to be" and "not to be" are cryptic references to a very specific doctrine about the copula turns out to be minimal, whereas the probability that we have just another occurrence of the existential "to be" is overwhelming. I shall call this the Existential Interpretation of our lines.[19]

A cautionary note before we move on. It is often claimed that Aristotle, like Plato, sees a close connection between the existential "X is" and the copulative "X is F". On a fairly prudent version of this view, "X is" is at least logically equivalent to "For some Φ, X is Φ" for *certain* values of "Φ", i.e. those which are essential to X.[20] Here I am not challenging this kind of account; my point is just that, whatever continuity Aristotle may want to posit between the two uses of "to be", the *De Interpretatione* also draws, both in theory and in practice, a distinction (at least a syntactic one) between them.

The Existential Interpretation fits well with "not even" (οὐδέ). Aristotle has just said that a verb by itself signifies something but not whether it is (i.e. exists) or not. But surely – someone might think – the very verb "is", or "is not", does signify whether the item signified is or not? Of course not, replies Aristotle: *not even* "to be" or "not to be" (i.e. "is" or "is not") can do so. As Ax (1979: 274–7) pointed out, this is actually parallel to the goat-stag argument in Chapter 1, 16a13–8, which we read earlier. There too Aristotle had just claimed that names and verbs are unlike complete sentences and are neither true nor false, and then proceeded to

pre-empt the possible objection that empty names like "goat-stag" should count as false names: "For *even* 'goat-stag' signifies something but is not yet true or false". Thus, 16a16 "for even" (καὶ γάρ) and 16b22 "for not even" (οὐδὲ γάρ) are parallel to one another: both introduce a clause which establishes the terms/sentences distinction *a fortiori* by showing that "even" a special case, which might be thought to constitute a counterexample, does not in fact do so.[21]

Our next question is what Aristotle means when, in 16b22–3, he claims that "to be" or "not to be" is not a sign "of the object" (τοῦ πράγματος). Could the "object" be the predicate signified by the verb? This seems to be the view of Ammonius, *In Cat.* 56.2–10 Busse. If so, then Aristotle would be repeating what he said at 16b20–1: a verb signifies something, but whether or not that something exists depends on the addition of a subject. Here, however, this will not do: "is a sign of the object" cannot possibly mean "is a sign *that* the object *exists*", and Aristotle should be eager to keep the two formulations as distinct as possible.[22]

An alternative construal might take inspiration from some relevant contexts in which the term "object" (πρᾶγμα) is apparently used by Aristotle to refer to a propositional content or state of affairs.[23] The Copula Interpretation invites – and the Existential Interpretation allows – such a construal here too: the copula (according to the Copula Interpretation) or the existential "to be" (according to the Existential Interpretation) is not a sign of a complete state of affairs, unlike a fully fledged sentence.[24]

This construal might seem to be confronted with the difficulty that Aristotle says not "of *an* object" but "of *the* object". Why the definite article?[25] The difficulty could be solved with a costless amendment: we could remove the accent from the article τοῦ in order to get the indefinite του, thus writing του πράγματος, "of *some* object".[26] However, the Existential Interpretation (unlike the Copula Interpretation) is also compatible with another, even easier construal: the "object" might be *the missing extra-linguistic subject*, which in a complete sentence is signified by the subject term and which a verb uttered in isolation is unable to signify. At 12. 21b28 Aristotle claims that human and white (ἄνθρωπος and λευκός) are "the underlying objects" (τὰ ὑποκείμενα πράγματα) in a copulative sentence such as "A human is white". Therefore, in a sentence in which "to be" is not copula but existential, such as "A human is", there is presumably only one "underlying object", namely human, and once you have "is" you need only one "object" – hence *the* "object" – to get a complete sentence.

Enter Porphyry

We are now ready for Porphyry's entrance. I shall quote the relevant passage from Ammonius' commentary:

> If the text is as we have set it out, "*For not even 'to be' or 'not to be' is a sign of the object*" [οὐδὲ γὰρ τὸ εἶναι σημεῖόν ἐστι τοῦ πράγματος ἢ μὴ εἶναι], you will find that only the interpretation I have expounded supports it. If, instead, it is as Porphyry the philosopher writes,

"*For 'to be' is not a sign of the object, nor is 'not to be'*" [οὐ γὰρ τὸ εἶναι σημεῖόν ἐστι τοῦ πράγματος ἢ μὴ εἶναι] – although as he goes on he is led back to the former reading and interpretation – then the text would say in general about all verbs that they are significant of something, as has been said, but not of truth or falsehood, which Aristotle shows by the words "but they do not yet signify whether it is or not", and he would be giving the reason for this by the words "*For 'to be' is not a sign of the object, nor is 'not to be'*". This means: "For the verb, said by itself, is not significant of the object indicated by it holding or not holding" [οὐ γάρ ἐστι σημαντικὸν τὸ ῥῆμα καθ᾽ ἑαυτὸ λεγόμενον τοῦ ὑπάρχειν ἢ μὴ ὑπάρχειν τὸ ὑπ᾽ αὐτοῦ δηλούμενον πρᾶγμα]; only if it did so would it be receptive of falsehood and truth. For he who has said "walks" has signified some activity, but has not said anything true or false about it, unless some subject is added, by holding or not holding of which the walking will make a true or false sentence. Therefore "*For 'to be' is not a sign of the object, nor is 'not to be'*" [οὐ γὰρ τὸ εἶναι σημεῖόν ἐστι τοῦ πράγματος ἢ μὴ εἶναι] is equivalent to saying that the verb, said by itself, is not significant either of the object (i.e. the one signified by it) being [τὸ ῥῆμα καθ᾽ ἑαυτὸ λεγόμενον οὐκ ἔστι σημαντικὸν οὔτε τοῦ εἶναι τὸ πρᾶγμα, τοῦτ᾽ ἔστι τὸ ὑπ᾽ αὐτοῦ σημαινόμενον] – which is usually signified by the affirmation – or of it not being [οὔτε τοῦ μὴ εἶναι] – which is indicated by means of the denial.

<div align="right">(In Int. 56.14–32 Busse = Porph. 88F. Smith)</div>

Let us set out schematically the main points of Ammonius' account as it emerges from this text.

- Porphyry knew of another reading (henceforth the "Porphyrean Reading"): οὐ γὰρ τὸ εἶναι σημεῖόν ἐστι τοῦ πράγματος ἢ μὴ εἶναι, "For 'to be' is not a sign of the object, nor is 'not to be'" (lines 16–17).
- Nevertheless, in the course of his commentary he ended up endorsing the standard reading and the interpretation which Ammonius has just set forth (18).
- On the interpretation initially proposed by Porphyry (henceforth the "Porphyrean Interpretation"), Aristotle is not speaking specifically of "to be" but of all verbs in general (19). He has just said that verbs signify something, but not truth or falsehood (19–21); he now proceeds to give a reason for this claim (21–2). It goes as follows: a verb, said on its own, "is not significant either of the object (i.e. the one signified by it) being – which is usually signified by the affirmation – or of it not being – which is indicated by means of the denial" (28–32, cf. 22–8).

This is quite interesting. Unfortunately it is also inconsistent; for the quotation of the Porphyrean Reading is incompatible with the account of the Porphyrean Interpretation. The Reading as quoted seems to differ from the one we have been discussing so far essentially in that it has οὐ ("not") in place of οὐδὲ ("not even"); the different placement of ἢ μὴ εἶναι, "or 'not to be'", is irrelevant. According to this text, τὸ εἶναι . . . ἢ μὴ εἶναι, in the nominative, is the subject of οὐ . . . σημεῖόν ἐστι τοῦ πράγματος: "to be" or "not to be" is not "a sign of the object" (whatever

that may mean). In Ammonius' account of the Interpretation, instead, "the verb said by itself" is the subject of "is not significant", and this in its turn governs οὔτε τοῦ εἶναι τὸ πρᾶγμα . . . οὔτε τοῦ μὴ εἶναι (*In Int.* 56.30–2 Busse, cf. 23–4), which I have translated "either of the object . . . being . . . or of it not being". Here we have τοῦ εἶναι . . . τοῦ μὴ εἶναι, where the articular infinitives are in the *genitive* and their subject is τὸ πρᾶγμα, "the object". Thereby, as Ammonius says at line 19, Aristotle turns out to be making a claim about all verbs in general, not just about "to be". But this meaning cannot possibly be expressed by the reading of which it is allegedly an interpretation.

Busse (1897) saw this difficulty and tried to bring the Reading into line with the Interpretation. He did so by suggesting, in the apparatus, that perhaps τὸ εἶναι at lines 17, 22, and 29 ought to be emended to τοῦ εἶναι: "scribas τοῦ εἶναι, quod Porphyrius legisse videtur". We might explain this multiple corruption by supposing that the text of the quotations in Ammonius' commentary was influenced by the vulgate text.

If this is so, then the Porphyrean Reading is not just

οὐ γὰρ τὸ εἶναι σημεῖόν ἐστι τοῦ πράγματος ἢ μὴ εἶναι,
for "to be" is not a sign of the object, nor is "not to be",

as we might think on the basis of Minio-Paluello's (1949) apparatus and as many modern scholars believe, but rather

οὐ γὰρ τοῦ εἶναι σημεῖόν ἐστι τοῦ πράγματος ἢ μὴ εἶναι,
for they [sc. verbs uttered just by themselves] are not a sign of the being of the object or of its not being.

This reconstruction finds some support in Boethius (*In Int.* I 64.13–65.8, II 76.18–77.1, 78.18–9 Meiser), who used Porphyry as a source and seems to read the same text, and in George's Syriac translation, Γ.[27] It is endorsed by Weidemann (2014a: 182, 2014b) as correct, and it may actually be right.[28] This means that the textual evidence for the variant οὐ ("not") alone, not accompanied by τοῦ εἶναι ("of the being"), becomes slender: the Armenian translation, Δ; the other Syriac translation, Σ; and the Anonymous Commentator, τ.[29]

But Weidemann goes further: he rates the Porphyrean Reading higher than did Porphyry himself (who in the end rejected it) and accepts it as the correct one in the text of Aristotle. Here I disagree, for several reasons.

1 Aristotle would not normally write τοῦ εἶναι . . . τοῦ πράγματος, "of the being of the object", but τοῦ εἶναι . . . τὸ πρᾶγμα, literally "of the object being". Actually, this is exactly how Ammonius paraphrases the Porphyrean Reading in the passage we have just read, *In Int.* 56.30–2 Busse (cf. 23–4). The corpus contains a couple of parallels for the phrase τὸ εἶναι τοῦ X with the meaning "the existence of X",[30] but it is unclear whether they are perfectly pertinent, and in any case the idiom is extremely unusual.

2 The Porphyrean Reading involves a switch in grammatical number: Aristotle was speaking in the plural of *verbs* spoken by themselves, but now he would suddenly start to talk in the singular about their failing to be "*a sign* of the being of the object", without supplying a new subject term. The switch is not impossible; but it is uncomfortable.[31]

3 Finally, with the Porphyrean Reading the *only* reference to the verb "to be" throughout the passage would be contained in the ensuing clause "not even if you say 'that which is' just by itself" (οὐδ᾽ ἐὰν τὸ ὂν εἴπῃς αὐτὸ καθ᾽ αὑτό ψιλόν, 16b23). This is odd; for that clause is naturally read as introducing the participle of "to be" in order to reinforce some previous point about the verb.

In the light of these difficulties,[32] what we should do with the Porphyrean Reading is what Porphyry did, namely dismiss it. Let us move on.

16b23. ". . . not even if you say 'what is' just by itself"

We now come to this clause, which we initially set aside, but which has just made an appearance in our discussion of the Porphyrean Reading. Several interpretations of this, from Boethius onwards, start from an assumption that I reject from the very start, i.e. that "what is" (τὸ ὄν) here may be a way of referring to "is" (ἔστι), whether in general or as the copula.[33] This is linguistically impossible, and there is no reason that Aristotle should resort to such tortured Greek here. Rather, what we have is another argument *a fortiori*, which builds upon the previous one. "If the trouble with 'to be' was that it lacked a subject term", someone might ask Aristotle, "then perhaps 'what is' – still a form of 'to be', but a nominal one – might allow us to eat our cake and have it?"[34] Of course not, answers Aristotle: not even this would do. A more precise reply would be that "that which is" is actually more of a name than a verb from our present point of view;[35] but never mind.

16b24–5. "For by itself it is nothing, but it additionally signifies some combination, which cannot be thought of without the components"

We now come to the passage's final sentence. The way in which you read it is necessarily oriented, to some extent, by the way in which you read the previous sentences; at the same time it should also constitute a final testing ground for those previous hypotheses.

On a widespread interpretation, at least in this sentence, if not before, Aristotle is speaking of the copula. Some supporters of this view believe that the subject of both "is nothing" (οὐδέν ἐστιν) and "additionally signifies" (προσσημαίνει) is "'to be' or 'not to be'" (τὸ εἶναι ἢ μὴ εἶναι, b22), which they took as a reference to the copula in the first place.[36] Others – the supporters of the Porphyrean Reading – believe that the subject is "that which is" (τὸ ὄν, b23), which is where they recognised the copula's first appearance in the passage.[37] Either way, Aristotle is taken to be claiming about the copula that "by itself it is nothing" in the sense that it lacks the basic, lexical signification which ordinary verbs have, i.e. is not (also) a name for

something in the way in which ordinary verbs are (also) names for something. He is also taken to be claiming that the copula signifies a "combination", i.e. a link between the subject and the predicate term "X" and "F" in a copulative sentence of the form "X is F".[38] This link can only be "thought of" in the presence of the items to be linked; in other words, only in the context of a complete sentence, in association with a subject and a predicate term, does the copula discharge its linking function. A conclusion is implied: the copula uttered by itself is not equivalent to a complete sentence. And since any verb is equivalent to copula + participle, as we saw earlier, from this a final conclusion is further meant to follow: no verb is equivalent to a complete sentence.

I have two reasons for disagreeing with this interpretation of the passage's conclusion. First, the passage is contrasting verbs said "by themselves" (καθ᾽ αὑτά) with complete sentences. In this context "by themselves" means "in isolation, on their own"; likewise in Chapter 1, 16a13, Aristotle claimed that names and verbs "by themselves" (αὐτά) lack the complexity of sentences. Therefore, when Aristotle winds up saying something about "to be" "by itself" (αὐτό), we should expect that to have the same force and refer not to the *intrinsic* signification of "to be" but rather to its being uttered *in isolation*.[39] Secondly – and more fundamentally – this interpretation is incompatible with my own construal of the previous sections: If, as I believe, the whole passage so far has been concerned with the existential "to be", not the copulative, then it is the former, not the latter, that should be at issue here too.

So let us try to see what the sentence can mean, if "to be" is instead existential. To start with, the subject of "by itself it is nothing" (αὐτὸ . . . οὐδέν ἐστιν) is naturally taken to be primarily " 'to be' or 'not to be' " (τὸ εἶναι ἢ μὴ εἶναι) – and by extension any other verb. "What is" (τὸ ὄν) may be also involved, but its clause is not part of the main line of argument. Now notice that "by itself it is nothing" need not necessarily mean that "to be" does not signify anything, although this is how it is usually understood by modern interpreters. The meaning might well be – more modestly and to the point – that an isolated utterance of the complete, existential "is" does not (yet) constitute anything *relevant for our present purposes*, i.e. anything *sentential*. Here Aristotle may well expect us to recall Plato, *Sph.* 262d, where the Stranger says that names alone or verbs alone do not constitute a sentence and that only someone who interweaves names and verbs "accomplishes something" (τι περαίνει) in this respect.

This alternative construal of "by itself it is nothing" is actually advanced by several commentators, both ancient and modern. One of the ancient ones is Ammonius:

> he says that "what is" is "nothing",[40] not as devoid of signification [ἄσημον] or as predicated homonymously of the objects; he rather says "*it is nothing*" true or false [οὐδέν ἐστί φησιν οὔτε ἀληθὲς οὔτε ψεῦδος].
>
> (*In Int.* 57.6–8 Busse)

These words coincide almost verbatim with those of Boethius, *In Int.* I 65.20–4, II 78.8–13 Meiser – which suggests that the interpretation actually goes back to

Porphyry.[41] Indeed, in the sequel (*In Int* 57.18–25 Busse) Ammonius implies that this was already the view of Alexander of Aphrodisias.[42]

But does Aristotle after all believe that an isolated "is" signifies anything? (I might have asked "does Aristotle after all believe that an isolated *existential* 'is' signifies anything?" – but the existential and the copulative are indistinguishable when the verb is uttered in isolation.) If my suggestion is right, the text is not really designed to answer this question, and it is difficult to work out what Aristotle would say if we asked him. The problem is compounded by its potential connections to broader issues – which cannot be properly addressed here – about the purport of Aristotle's famous slogan, "What is is said in many ways" (τὸ ὂν λέγεται πολλαχῶς, *Metaph*. IV 2, VII 1, etc.). *If* that is intended as a thesis about the *sense* or meaning of the verb "to be", and *if* the thesis is that "to be" has as many different senses as there are categories and no common, generic sense,[43] then perhaps Aristotle might believe that an isolated "is" signifies nothing because it is not tied by context to any particular category.[44]

However, it is far from clear that this is really what Aristotle would think. Why should he not simply say that a contextless "is", like any isolated utterance of a word endowed with different senses, signifies *many* things? Think of the famous proof of the Principle of Non-Contradiction in *Metaph*. IV 4, 1006a18–b11. The Principle's opponent is challenged to utter just a single significant word; his acceptance of an account of what the word signifies commits him, in the final analysis, to the very Principle he wants to deny. Never mind if the word signifies not just one thing but many, Aristotle says, as long as they are a *definite* number: all we need to do is associate each of the things signified with a different account. Only if the word signified *indefinitely* many things would it be the same as if it signified nothing at all.

Furthermore, "What is is said in many ways" also admits of other, less radical construals. In particular, there is some reason to believe that, although of course Aristotle holds that there is no genus of being but rather several different ways of being, as many as the categories, nevertheless he takes the verb "to be" to have a weak generic sense which cuts across the categories. This weak generic sense is what enables him to claim, in *APo.* II 1–2, that we can know *that* X is (ὅτι ἔστι) before we know *what* X is (τί ἐστι); and to introduce, in *Metaph*. IV 1–2, a general enquiry into "being *qua* being" (τὸ ὂν ᾗ ὄν). And after all, how could Aristotle deny that there is a recognisable lexical difference between an isolated utterance of "is" and one of a nonsense verb such as "piffs"? So I actually incline to believe that Aristotle takes an isolated "is" to have some sense of its own.[45]

* * * *

Let us now come to the second limb of the final sentence: "but it additionally signifies some combination, which cannot be thought of without the components" (προσσημαίνει δὲ σύνθεσίν τινα, ἣν ἄνευ τῶν συγκειμένων οὐκ ἔστι νοῆσαι). This, I take it, refers to the verb's predicative function and means that the verb can perform that function only when a subject term is added to it, hence only in the context of a complete sentence: the existential "is", like any other verb, is an incomplete

expression, awaiting completion by a subject term. Thus, the 'combination' of which Aristotle is thinking is not the one between the subject X and the predicate F in a copulative sentence of the form "X is F"; it is rather the one between X and F in a name-verb sentence of the form "X Fs". There is nothing odd about this; interpreters who hold that in this sentence Aristotle is speaking of the copula must in any case take the point to be generalisable to all verbs. And the word σύνθεσις, "combination", was used with reference to name-verb sentences in Chapter 1, 16a12, and even before in Plato, *Cra.* 431c and *Sph.* 263d.[46]

Note that, according to the account I have just set forth, there is a subtle asymmetry in the way in which the two particles μέν . . . δέ (literally "on the one hand . . . on the other") contrast the final sentence's two limbs, the negative ("by itself it is nothing") and the positive one ("it additionally signifies some combination, which cannot be thought of without the components"). For even though μέν is placed after αὐτό, "by itself", in fact both limbs of the antithesis are about the isolated verb: on the one hand it is incomplete; on the other, it invites completion by a subject term. This kind of asymmetry is fairly common and unproblematic.[47]

The verb "additionally signifies" (προσσημαίνει) was used by Aristotle at 16b6–10 (which we quoted at the outset) to refer to the verb's signification of time; there the point was apparently that the signification of time is *added* to a verb's basic, lexical signification. Since in the same lines Aristotle also said that a verb is a sign of something predicated, thereby apparently meaning also that a verb is a sign of the predication itself (i.e. that the verb *ascribes* the predicate to the subject), it is tempting to suppose that he regards that too as a kind of "additional signification".[48] This would explain his use of "additionally signifies" in our passage. It would leave open the question whether the additional predicative signification implies the presence of a more basic lexical signification – as in ordinary verbs – or "to be" is a special verb that can have the additional signification while lacking the basic one.[49] As I said earlier, I incline to the former option.

An alternative construal of the final sentence's second limb is proposed by Ammonius, *In Int.* 57.13–8 Busse:

> That "what is" "additionally signifies" the combination, and that not only this, but also each of the simple vocal sounds does so in the same way, seems not to have been said in the same way in which the verb was said to "additionally signify" time; rather, it is used for "signifies additionally to something else" [πρὸς ἑτέρῳ σημαίνειν]. That is to say, when joined with something else it signifies a combination [συμπλεκόμενον ἑτέρῳ τινὶ σημαίνειν σύνθεσιν] which is then receptive of falsehood and truth; the simples must be conceived of before this combination.

Thus Ammonius takes "but it additionally signifies some combination" etc. as a point about "to be" – and by extension any other verb – not as uttered in isolation but rather *as already joined with a subject term* to form a complete declarative sentence. Boethius, *In Int.* II 78.21–6 Meiser, essentially agrees,[50] and since his lines are part of a section whose beginning (II 78.8–13 Meiser) has already turned out

to be parallel to Ammonius' commentary, and hence probably to depend on Porphyry,[51] it is a likely guess that we still have remnants of Porphyry's commentary before us. Indeed, there is some evidence in Ammonius (*In Int.* 57.19–33 Busse) that in fact all this goes back to Alexander.

The construal of the ancient commentators restores a perfect symmetry between the two limbs of the final sentence: now the two words which immediately precede μέν and δέ, i.e. αὐτό and προσσημαίνει, refer precisely to the two contrasted conditions of being uttered in isolation vs being joined with a subject term. This counts as an advantage. In my opinion, however, it is not sufficient to render this construal plausible. For it is very doubtful that the preverb προσ- in προσσημαίνει is sufficient to convey the required reference to the presence of a subject term.

Conclusion and Envoi

We have argued our way through the intricacies of this passage; it is time to sum up. I will do so by finally offering a complete paraphrase of our lines that reflects our previous conclusions:

> *When uttered just by themselves verbs are still a specific kind of names and therefore signify some predicate (for the speaker arrests his own thought on something and causes the hearer to do the same), but they do not yet signify whether or not that predicate exists, i.e. whether or not it holds of something. For even the verb "to be" or "not to be" is not a sign of the extralinguistic subject* [alternatively, reading not τοῦ but του: "*of some state of affairs*"] *– not even if you utter the description "what is" just by itself. For "to be" by itself does not amount to a complete sentence; rather, it conveys the additional signification of a combination with a subject – a combination which cannot be thought of unless all of its components are present.*

A final remark. If you compare this paper with Ackrill's commentary, you will see that I have ultimately done little more than confirm his interpretation – which he set out in a couple of crisply written pages – by supporting it with more detailed arguments and more erudition. I hope this may be an opportunity to reflect on the way in which his work, 60 years after its publication, is still a model of acumen, conciseness, and clarity for ancient philosophy scholars.

Acknowledgements

Notes

1 Following Ackrill (1963), I use "recovery" and "recover" to render the Greek terms ὑγίεια and ὑγιαίνω (literally "health" and "be healthy") in the absence of an English verb corresponding to the latter.

   Throughout the paper I have freely modified Ackrill's (1963) translation of the *De Interpretatione* and Blank's (1996) translation of Ammonius' commentary on the *De Interpretatione*. The manuscript sigla are those of Weidemann's (2014b) edition.

2 With what I have just written on verbs and predication cf. more fully Ademollo (2015: 49–50). See also Ackrill (1963: 118–19); Whitaker (1996: 58); Weidemann (2014a: 173–4); Frede (unpublished).

3 On beings which "are said of a subject" and beings which "are in a subject" see Ackrill (1963: 74–6); Wedin (2000: 38–66).

4 Ammonius, *In Int*. 50.7–14 Busse, reports that Porphyry – presumably in his lost commentary on the *De Interpretatione* – mentioned the existence of an alternative reading: "some" did not read καὶ ἀεὶ τῶν καθ᾽ ἑτέρου λεγομένων σημεῖόν ἐστιν, οἷον τῶν καθ᾽ ὑποκειμένου ἢ ἐν ὑποκειμένῳ ("and it is always a sign of the things which are said of something other, i.e. of a subject or in a subject"), but rather καὶ ἀεὶ τῶν ὑπαρχόντων σημεῖόν ἐστιν, οἷον τῶν καθ᾽ ὑποκειμένου ("and it is always a sign of the things which hold, i.e. of a subject"). The alternative reading was printed by Minio-Paluello as the text of his 1949 edition and then translated by Ackrill (1963); part of it, i.e. the omission of ἢ ἐν ὑποκειμένῳ, is also endorsed by Weidemann (2014a: 175–6; 2014b). I believe that Weidemann's hybrid text cannot be right, but I cannot discuss the issue here.

5 ἢ μὴ εἶναι is read by some witnesses in a different position, i.e. after τοῦ πράγματος, as we are partly going to see later on. This is also the text printed by Weidemann (2014b). Nothing really important hangs on this issue.

6 αὐτὸ καθ᾽ αὑτὸ (or αὐτὸ καθ᾽ ἑαυτὸ) is the reading of the majority of witnesses, which Waitz (1844); Montanari (1984, 1988) and Weidemann (2014b) print in their editions. Others read just αὐτὸ or καθ᾽ αὑτὸ, or even nothing at all; this last reading is endorsed by Minio-Paluello (1949), who prints ψιλόν unaccompanied, presumably regarding the expansions αὐτὸ καθ᾽ αὑτὸ/αὐτὸ/καθ᾽ αὑτὸ as glosses.

7 Of course the verbs uttered in isolation are meant to include *finite* verbal forms such as "runs" or "sleeps". Bärthlein (1984: 237–40, 244) argues that Aristotle is speaking only of *infinitives*, but this supposition is not backed by any substantial argument and indeed is incompatible with the passage's overall train of thought.

8 See Ammonius, *In Int*. 54.25–55.10 Busse; Boethius, *In Int*. II 72.11–74.33 Meiser; Montanari (1988: 242–8); Weidemann (2014b: 179–80).

9 On the *Cratylus* passage, see Ademollo (2022a). The allusion is confirmed by the fact that the Aristotelian sentence contains, at the same time, yet another echo of the *Cratylus*, namely of the etymology, advanced at 437a, of ἐπιστήμη ("knowledge") as that which ἵστησιν ἡμῶν ἐπὶ τοῖς πράγμασι τὴν ψυχήν ("arrests our soul at the objects"). See Weidemann (2014a: 179).

10 Whitaker (1996: 55–8). Contrast Ackrill (1963: 121): "Aristotle must be using 'name' here in its wide, non-technical sense; he explains what he means by it by adding 'and signifies something'. He is not saying that 'runs' on its own is a name and not a verb, but he is bringing out that 'runs' needs a subject if it is to perform the assertive role for which it is cast".

11 See Ax (1979: 273).

12 I assume that for a predicate F to "be" (i.e. to exist) is for F to hold of something (i.e. for something to be F). Cf. the authors mentioned in n. 13; and see (Mignucci 2007: 249): "gli universali per Aristotele non hanno esistenza autonoma. In realtà quello che si domanda quando si chiede 'esiste X?' è se esistano le cose che sono X"; Ademollo (2022b).

13 See Boethius, *In Int.* I 64.26–7 Meiser; Ackrill (1963: 121–2): the verb "runs" "by itself does signify something, running, but not that that is, i.e. not that there is any running; only if you add a name ('Socrates runs') will you be saying that there is some running"; Bärthlein (1984: 240); Weidemann (2014a: 180). Ackrill rightly rejects an alternative interpretation: "It is tempting to translate the last words of the sentence as 'whether anything is or is not the case'; and similarly at 16b29 . . . This gives the correct

point but is probably an incorrect translation". A similar interpretation was adopted by Ammonius, *In Int*. 55.11–6 Busse; the Anonymous Commentator, *In Int*. 10.8–10 Tarán; and Stephanus, *In Int*.13.30–1 Hayduck.

14 ἀλλὰ μὴν εἰ τὸ πρῶτον, καὶ τὸ δεύτερον ἄρα (55.22–3): like Blank (1996) I have not translated εἰ, which should I think be deleted. Ammonius has announced a syllogism (*In Int*. 55.16 Busse); he has stated a conditional sentence (*In Int*. 55.16 Busse: εἰ γὰρ . . . οὐκ ἂν δέχοιντο τούτων) which constitutes the major premiss of a hypothetical syllogism; here we have respectively the second premiss (ἀλλὰ μὴν {εἰ} τὸ πρῶτον) and the conclusion (καὶ τὸ δεύτερον ἄρα) of that syllogism, in accordance with standard (originally Stoic) logical terminology.

15 With Ammonius cf. Stephanus, *In Int*. 13.33–6 Hayduck, and the Anonymous, *In Int*. 10.14–11.5 Tarán. The views of these ancient commentators are endorsed by Bärthlein (1984: 246–7).

16 This possibility is considered and then rejected by Ackrill (1963: 122) (cf. next note). It is endorsed by Whitaker (1996: 56–8).

17 See Ackrill (1963: 122); cf. Montanari (1988: 262).

18 At 16a15–6 I am following the punctuation οὔτε γὰρ ψεῦδος οὔτε ἀληθές πω, σημεῖον δ᾽ ἐστὶ τοῦδε, proposed by Sedley (1996: 93, 2004: 14–15) and adopted by Whitaker (1996: 33–4) and Weidemann (2014b).

19 See Ackrill (1963: 122–3); Barnes (1996: 189).

20 For some discussion, see Brown (1994) and Charles (2002).

21 Notice, however, that the Existential Interpretation would be no less compatible with a text which (as, we shall shortly see, in some indirect sources) at 16b22 read οὐ ("not") in place of οὐδὲ ("not even"). All we would have to suppose is that Aristotle was presenting the particular case of "to be" and "not to be" not as the basis for an argument *a fortiori* (as with the reading οὐδὲ) but simply as an *example* which stands in for any other verb. In fact, this is just what he does in many passages of the *De Interpretatione*, including those which I cited earlier as evidence for his use of the existential "to be" and "not to be" in Chapters 1, 2, 4, and 5: 16a13–8, 16b1–5, 16b28–9, 17a11–2. See further n. 29.

22 Cf. Weidemann (2014a: 182).

23 πρᾶγμα as state of affairs: see *Cat*. 5. 4b8–10, 12. 14b14–22; *Metaph*. V, 29. 1024b18–21 (probably the most uncontroversial instance); IX 10. 1051a34–b9. See (Crivelli 2004: 46–2, 2015: 193–202).

24 See Anon. *In Int*. 10.14–5 Tarán: "The verb is not capable of indicating a true or false object" (οὐκ ἔστι τὸ ῥῆμα δηλωτικὸν ἀληθοῦς καὶ ψευδοῦς πράγματος); Ackrill (1963: 122); Nuchelmans (1973: 33–4); Bärthlein (1984: 248).

25 Cf. Ax (1979: 279) and Whitaker (1996: 56), who translate τοῦ πράγματος as "einer Sache", "of a thing". Whitaker's own interpretation of τοῦ πράγματος is that it is a "thing" which the copula fails to signify, because it "does not in fact signify anything" (cf. Boethius, *In Int*. II 76.10–15 Meiser). If this were the meaning of the present clause, I fail to see how it could fulfil the function, which the "for" (γάρ) assigns to it, of explaining the previous claim that verbs uttered by themselves "signify something . . . but they do not yet signify whether it is or not".

26 De Rijk (2002: 217 n. 101) dismisses this solution as "too bold". One wonders what he would have said of a real conjecture.

27 See the apparatus of Weidemann (2014b). Note, however, that in *In Int*. II 76.10–5 Meiser, Boethius clearly presupposes the vulgate text in which τὸ εἶναι ἢ μὴ εἶναι is the grammatical subject of σημεῖόν ἐστι τοῦ πράγματος. Note also that the transition to the lines in which he seems to presuppose the Porphyrean Reading is neither clear nor explicit. If anything, Boethius seems to be contrasting two different *interpretations* of the text (see 76.26–7 *hic est melior intellectus*) but shows no awareness that two different *readings* are involved. Cf. Blank (1996: 152–3 n. 217), who resists Busse's correction:

Boethius "gives no indication that Porphyry's text of Aristotle had a different reading. Instead, he thinks that the same text (i.e. τὸ εἶναι) needs to be interpreted as though it were the genitive". This, however, is to ascribe to Porphyry and Boethius an utterly ungrammatical construal of Aristotle's Greek.

28 Cf. Montanari (1984: 184–5, 1988: 256–8). Montanari, however, doubts that the Porphyrean Reading was a genuine reading at all, and would rather regard it as a conjecture. I suspend judgement.

29 In the previous section, n. 21, I pointed out that the Existential Interpretation, which I defended there, is compatible both with the reading οὐδὲ and with the reading οὐ. Now that οὐ on its own turns out to be poorly attested, however, it is probably safest for supporters of the Existential Interpretation to leave it aside and hold on to the mainstream οὐδὲ.

30 The parallels are cited by Weidemann (2014a: 184). One is *EN* IX 9. 1170b7–17, where Aristotle seems to shift from τὸ τὸν φίλον (sc. εἶναι), to τὸ τοῦ φίλου. Another is *Ph.* IV 12, where Aristotle repeatedly describes time as measuring τὸ εἶναι of someting (e.g. 221a5–6 τὴν κίνησιν καὶ τὸ εἶναι τῆς κινήσεως, "both motion and the being of motion"; cf. 221a7, a9, b27, b30–1) and also claims that something "is in number" if and only if there is a number τοῦ πράγματος, "of the object", and τὸ εἶναι αὐτοῦ, "its being", is measured by number (221b14–6). See Delcomminette (2020) for discussion of the phrase in *Ph.* IV 12.

31 See Bärthlein (1984: 235–6, 243). Weidemann (2014a: 184–5) dismisses this objection on the grounds that in 16b19–22 "ein Numeruswechsel stattzufinden scheint".

32 Bärthlein (1984: 234, 243) and Montanari (1988: 259) also argue that the Porphyrean Reading would add nothing new to the previous "but they do not yet signify whether it is or not" (ἀλλ᾽ εἰ ἔστιν ἢ μὴ οὔπω σημαίνει). This is right *if the "object" is meant to be the entity signified by the verb*; from this perspective I am not reassured by Weidemann's (2014a: 183) claim that "for they . . . the object" is meant to *explain* the previous clause rather than give *grounds* for it. But there would instead be no repetition if one or other of the two alternative construals of the "object" were right, i.e. if were rather meant to be a state of affairs or the extralinguistic subject (see section *ad* 16b22). Therefore, the argument is not decisive.

33 Perhaps there is a hint in this direction in Ammonius' account of how Porphyry dealt with this clause, 57.1–6 Busse. Boethius clearly translates and construes τὸ ὄν as equivalent to ἔστι in *in Int*. I 65 Meiser; he is more cautious in *In Int* II 77–8 Meiser. Among modern interpreters see Weidemann (2014a: 185) (who finds this use "noteworthy").

34 Cf. the Anonymous Commentary, *In Int*. 11.14–19 Tarán.

35 See Ackrill (1963: 123–4) (and indeed already Ammonius, *In Int*, 56.4–5 Busse).

36 See Ackrill (1963: 122) (who does not endorse this interpretation), Ax (1979: 277); Whitaker (1996: 56–8); and perhaps also Barnes (2009: 32, 45). See also Montanari (1988: 270–2; cf. 263–4), whose stance is peculiar: he identifies the subject with τὸ εἶναι ἢ μὴ εἶναι but holds (implausibly in my opinion) that only at the present stage is Aristotle construing that specifically as the copula.

37 Weidemann (2014a: 185–6); see above.

38 Alexander of Aphrodisias, *In Metaph*. 371.20–36 Hayduck (cf. Boethius *In Int.* II 77.3–13 Meiser), seems to take this line and give it a further twist. In the course of commenting on *Metaph.* V 7, he claims that "to be" signifies the "holding" (ὕπαρξις) which is "appropriate" to the item to which it is attached – i.e. to the category to which the item belongs – and quotes our passage as confirming this claim. The idea seems to be that in a sentence of the form "X is F" the copula "is" signifies nothing but the "holding" of F – a "holding" which is of a different kind depending on the category to which F belongs: substantial in "Oscar is a cat", qualitative in "Oscar is handsome", quantitative in "Oscar is 20 inches long", etc. For the translation of Alexander's ὕπαρξις as "holding" see Barnes (2009: 41–2); the term is instead translated as "existence" by Dooley (1993: 44, 144 nn. 161, 164) and Bonelli (2001: 92–4).

39 See Burnyeat (2003: 14): "Aristotle is often supposed to say here that the 'is' in 'Socrates is wise' has no semantic meaning of its own, but is a mere copula. Yet it fits the context

better to take this a remark about someone uttering the solitary word 'is' all by itself, not about the word 'is' in a standard predication". The quotation is continued in n. 44.

40 Ammonius assumes that the subject of "by itself it is nothing" is "that which is" (τὸ ὄν). As can be seen by what I said earlier, I believe he is wrong on this specific point.

41 On Porphyry as Boethius' main source, and the common source of Ammonius and Boethius, see Ebbesen (1990: 374–7) and Blank (1996: 3–4).

   At *In Int.* II 78.8 Meiser, Boethius uses the words *vel certe* (whose meaning here seems to be "In fact, however . . .."; cf. *In Int.* II 76.15 Meiser) to introduce this interpretation immediately after explicitly ascribing to Porphyry a different and incompatible one, according to which "is" – whether existential or copulative – when uttered on its own *nihil omnino significat* (*In Int.* II 77.13–78.8 Meiser). *This* – and not the view I ascribe to him in the main text on the basis of the convergence between Ammonius and Boethius – is usually reported by scholars as Porphyry's interpretation. Here is my conjecture: *both* interpretations were present in Porphyry's commentary in the same order; Porphyry introduced the second, superior one with ἤ, which is typically used by Aristotle and his commentators to announce a new and better solution to the problem at hand; Boethius literally followed Porphyry in reporting both interpretations, translating ἤ as *vel certe*, whereas Ammonius more economically reported only the second, superior interpretation.

42 See n. 45. Among modern commentators see Ackrill (1963: 123) (quoted in n. 46) and Bärthlein (1984: 250).

43 For discussion, see Matthews (1972); Barnes (1995: 72–4); and McDaniel (2017: 12–34) (on Aristotle see especially 30–1).

44 Cf. Burnyeat (2003: 14), the immediate sequel of the quotation in n. 39: "It is not that in a standard predication the verb has no meaning in its own right, but that *what* its meaning is (what *sort* of being it signifies) is contextually dependent on the subject and/or predicate expression flanking it; hence, without a context it has no meaning at all, whereas an ordinary verb uttered on its own (someone suddenly shouts out 'Sits') does at least put the hearer in mind of its signification".

45 Cf. the authors mentioned in n. 43 and the view, defended by Ruijgh (1979) and West (2016), that the original sense common to the Greek "be" and its Indo-European counterparts is "be there, be present, be available".

   Ammonius seems to have a view similar to the one we are considering when he claims that the existential "is" signifies ὕπαρξις, "holding" (*In Int.* 44.11–14 Busse). He also seems to ascribe something similar to Alexander (*In Int.* 57.23–6 Busse). According to his report, in the course of commenting on our passage Alexander claimed that "is" is a name, just like any other verb, and as such it "primarily" has the function of signifying something, i.e. "participation in being" (τῆς τοῦ ὄντος μεθέξεως) – i.e., presumably, existence. Unfortunately this is very different from what Alexander says in the *Metaphysics* commentary (see n. 38). For this reason Suto (2012: 218) doubts the soundness of the report. Alternatively, Ammonius might be reporting an interpretation which Alexander considered but did not ultimately endorse: cf. n. 41 for a similar case.

46 My interpretation thus coincides with that of Ackrill (1963: 123): "Perhaps Aristotle's last remark is not about the copulative but about the existential 'is'. If so, 'by itself it is nothing' does not characterize the copula in contrast to ordinary verbs. It means only that 'is' ('exists'), *like* other verbs, *asserts* nothing on its own. Like them it both signifies something and also indicates a synthesis – it calls for the addition of a subject-term in order that it may fulfil its role as a sign of something said of something else". Cf. Barnes (1996: 189): "Aristotle ought to be talking of *existential* 'εἶναι'". Barnes (2009) takes a different view: see n. 36.

47 See Denniston (1954: 371–2), with examples.

48 A different use of προσσημαίνειν is in play at *Int.* 10. 20a12–13, where Aristotle claims that the quantifiers "every" and "no" προσσημαίνει universal quantification, meaning that this is what they *contribute* to the whole sentence. Nuchelmans (1973: 29; cf. Barnes 2009: 53) takes this to be the pertinent use in our passage; I find this unconvincing.

49 See Whitaker (1996: 56).

50 Cf. *In Int.* I 65.25–66.25 Meiser. Boethius renders Aristotle's προσσημαίνει as *consignificat*, "co-signifies"; cf. Stephanus *In Int.* 13.38, 15.2 Hayduck συσσημαίνει. Among modern interpreters Ammonius is followed by Bärthlein (1984: 250–1).
51 See n. 41 and text thereto.

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4 Truth and Formal Validity in the *Prior Analytics*

Paolo Crivelli

In the *Prior Analytics*, Aristotle maintains that every inference that is a syllogism must satisfy both the condition of having its conclusion resulting necessarily from its premises and a further condition which he expresses by the phrase "due to these things being there". The chief aim of this chapter is to understand what this additional requirement amounts to. The main evidence for resolving this problem is provided by two passages of the *Prior Analytics*: the first is Aristotle's discussion of the method of rejection by counterexamples, the second contains his remarks about non-syllogistic inferences where however the conclusion results necessarily from the premises. A careful analysis of these two passages shows that the additional requirement expressed by the phrase "due to these things being there" demands that the trait of having the conclusion resulting necessarily from the premises should be shared with all inferences of the same structure, or "form". Aristotle's conception of the form of an inference is different from the modern one because it is not based on the idea of substitution in a shared schema. It is based instead on the idea of a shared structure of semantic relations between terms, where the semantic relations can be expressed by means of very different formulations (for instance, "every" and "all" can be used to express the same semantic relation between terms).

This chapter is divided into four sections: the first examines the definition of syllogism in the first chapter of the *Prior Analytics*, the second discusses the method of rejection by counterexamples, the third comments on a passage where Aristotle offers examples of non-syllogistic inferences where the conclusion results necessarily from the premises, and the fourth contains some concluding remarks about Aristotle's views about necessity. It turns out that although Aristotle can be credited with the view that logic is formal, the way in which it is formal for him is different from that in which it is such for many modern philosophers and logicians.[1]

1. Aristotle's Definition of Syllogism

The conditions which a syllogism must satisfy. Aristotle defines syllogism as follows:

T1 A syllogism is a discourse in which, certain things having been posited, something different from the things laid down results of necessity due to these things being there [τῷ ταῦτα εἶναι].

(Arist. *APr.* I 1, 24b18–20)[2]

This definition mentions several conditions. There is some unclarity as to how many they are and what they amount to.

The plural phrase "certain things having been posited" indicates that only inferences with two or more premises are syllogisms. There is independent evidence for crediting Aristotle with this requirement.[3]

The requirement that the syllogism's conclusion be "different from the things laid down" banishes *petitio principii*: a syllogism must not assume what it sets out to establish. There is independent evidence for crediting Aristotle also with this requirement.[4]

The third condition for an inference's being a syllogism is that its conclusion should result necessarily from its premises.[5] I use the adjective "valid" to mean "having the conclusion that results necessarily from the premises". Thus, every syllogism is a valid inference.

The phrase "due to these things being there". Aristotle adds that in a syllogism the necessity of the conclusion's resulting from the premises must be "due to these things being there" (24b20). He explains the phrase "due to these things being there" as follows:

T2 By "due to these things being there" I mean "to result because of these things", and by "to result because of these things" I mean "additionally needing no term from outside for the necessity to come into being".

(Arist. *APr*. I 1, 24b20–2)

The expression "I mean" ("λέγω" at 24b20) suggests that Aristotle is endowing the phrase "due to these things being there" with a technical meaning (cf. "λέγω" at 24a17 and "λέγομεν" at 24b28). If this is right, then the phrase must be understood according to the explanation Aristotle is offering. The explanation comes in two stages: a first account and a second one that expands on the first. The first account is formulated by means of the words "to result because of these things" (24b20–1); the second one by means of the words "additionally needing no term from outside for the necessity to come into being" (24b21–2).

The second account's formulation contains the expressions "the necessity" and "no term from outside". The expression "the necessity" probably refers to the necessity with which an inference's conclusion results from its premises (cf. "results of necessity" at 24b19–20). The expression "no term from outside" is harder to explain. Many commentators, from Alexander (*In APr*. 21, 22–6 Wallies) onwards, think that the occurrence of "term" here should be understood on the basis of the immediately preceding definition of 24b16–8 so that the terms in question should be those that are constituents of propositions. Aristotle can hardly mean that the item "from outside" which a syllogism does not additionally need for its conclusion's resulting necessarily from its premises is a term that is a constituent of a proposition: no inference needs the addition of such a term (because the addition would yield an ungrammatical result), so the phrase "due to these things being there" would be idle. However, in the *Prior Analytics* Aristotle often uses "such-and-such term" to mean "such-and-such proposition": for instance, he uses

"universal term" to mean "universal proposition",[6] "particular term" to mean "particular proposition",[7] "affirmative term" for "affirmative proposition",[8] and "negative term" for "negative proposition".[9] It may therefore be plausibly assumed that when he says that a syllogism additionally needs no "term from outside", he means that it additionally needs no "proposition from outside".[10] "From outside" probably means "from outside the premisses".

It has been suggested that the verb "εἶναι" in "τῷ ταῦτα εἶναι" has veridical value ("to be true", "to be the case").[11] But Aristotle cannot mean that the conclusion of a syllogism must result necessarily due to the premisses' being true: he is aware that syllogisms can have false premisses.[12] It is more likely that "εἶναι" here means simply something like "to be there" (as in my translation): the point made is that some conclusion results of necessity thanks to "these things", namely, this proposition and this one and . . . (one is supposed to imagine the demonstrative pronoun picking out certain specific propositions), "being there", namely being among the premisses.[13]

Several commentators, both ancient and modern, think that the phrase "due to these things being there" introduces the additional condition of having the conclusion that results with logical necessity without the aid of tacit premisses.[14] They attribute to Aristotle the idea that in some inferences, although the conclusion results necessarily from the premisses explicitly formulated, only the supplement of one or more unexpressed further premisses yields an inference where the conclusion results with logical necessity. The phrase "due to these things being there" would have the role of excluding from the domain of syllogisms the inferences that have the conclusion resulting necessarily from their premisses but that need such a supplement to attain logical necessity. This suggestion has a lot to be said for it. However, it faces two challenges. What is exactly the nature of the logical necessity Aristotle is introducing? How can one find indications of this logical necessity in the phrase "due to these things being there" or Aristotle's explanation of it? The main objective of this chapter involves responding to these challenges.

Aristotle's second account of the phrase "due to these things being there" poses an exegetical difficulty. For, according to the most natural way of understanding it, Aristotle's second account states that the phrase is setting the requirement that an inference can be a syllogism only if its own premisses are sufficient for its own conclusion to result necessarily from them.[15] Now, if the third condition for an inference's being a syllogism is satisfied, namely, if the inference's conclusion results necessarily from its premisses, then the inference's premisses are certainly sufficient for its conclusion to result necessarily from them, so the requirement set by the phrase "due to these things being there" would be already met. Hence, the phrase would be introducing a redundant condition.[16] This, however, would be extremely strange, for three reasons: firstly, a definition whose *definiens* mentions a redundant condition would be a poor definition; secondly, the effort Aristotle puts into explaining the phrase would be surprising if the phrase introduced a redundant condition; thirdly, in a later passage of the treatise Aristotle remarks that "the necessary extends beyond the syllogism, for every syllogism is necessary while not everything necessary is a syllogism" (*APr.* I 32, 47a33–5), and the only portion of

the definition of syllogism that could vindicate this remark is the phrase "due to these things being there". The best solution to this difficulty is to abandon the most natural way of understanding Aristotle's second account.

In view of this, I provisionally put on one side the problem of the interpretation of Aristotle's explanation of the phrase "due to these things being there". Instead I try to understand the phrase by looking at the passage that contains its only occurrence in the *Prior Analytics* outside T1 and T2. The results obtained by considering this passage will help me to go back to offer a plausible interpretation of Aristotle's explanation of it.[17]

2. The Method of Rejection by Counterexamples

The role of counterexamples. As it is well known, the syllogisms Aristotle studies come in three figures. When he discusses syllogisms in a given figure, Aristotle proves two things. Firstly, he proves that for certain ways of arranging terms in an inference's premisses (ways that fit the figure in question), there is a way of arranging these terms in the inference's conclusion (a way that also fits the figure in question) whereby all inferences where terms are thus arranged are valid (when he proves this, Aristotle mentions only the "logically strongest" way of arranging terms in the conclusion). Secondly, Aristotle proves that for all the remaining ways of arranging terms in an inference's premisses (ways that fit the figure in question), it is not the case that there is a way of arranging these terms in the inference's conclusion (a way that also fits the figure in question) whereby every inference where terms are thus arranged is valid. This second task he carries out by means of a compact "method of rejection" based on counterexamples.

Aristotle's most extensive discussion of his method of rejection occurs in connection with its first application:

T3 However, if the first follows all of the middle and the middle belongs to none of the last, there will not be a syllogism of the extremes: for nothing necessary results due to these things being there [τῷ ταῦτα εἶναι]. For it is possible for the first to belong to all as well as to none of the last, so that neither the particular nor the universal comes to be necessary. And, since nothing is necessary, there will not be a syllogism through these.[18] Terms for belonging to all are "animal", "man", "horse"; for belonging to none, "animal", "man", "stone".

(Arist. *APr*. I 4, 26a2–9)

Passage T3 contains the only occurrence of the phrase "due to these things being there" in the *Prior Analytics* outside T1 and T2. It belongs to Aristotle's treatment of first-figure syllogisms. Aristotle proves that in the case of the first-figure way of arranging terms in the premisses whereby for some terms A, B, and C, the premisses are a proposition with predicate-term A and subject-term B which is true just if AaB and a proposition with predicate-term B and subject-term C which is true just if BeC, there is no first-figure way of arranging these terms in the conclusion,

i.e. no way of arranging terms in the conclusion such that it is a proposition with predicate-term *A* and subject-term *C* which is true just if *A* is related *C* in any of the four ways in which this can occur, whereby any inference where terms are thus arranged is a syllogism.[19]

When he is out to prove that no inference where the terms in the premises are arranged in a certain way that fits a certain figure is a syllogism in that figure, Aristotle's strategy is to find two trios of terms whose semantic relations guarantee that two trios of propositions whose terms are suitably arranged are *actually* true: in one trio of *actually* true propositions, one is a universal affirmative proposition whose predicate- and subject-term fit the figure in question and the other two are propositions whose predicate- and subject-term fit the arrangement under scrutiny; in the other trio of *actually* true propositions, one is a universal negative proposition whose predicate- and subject-term fit the figure in question and the other two are propositions whose predicate- and subject-term fit the arrangement under scrutiny. On the basis of these two trios of *actually* true propositions, Aristotle infers,[20] on the one hand, that it is *possible* that a universal affirmative proposition whose predicate- and subject-term fit the figure in question is true together with two propositions whose predicate- and subject-term fit the arrangement under scrutiny, and, on the other hand, that it is *possible* that a universal negative proposition whose predicate- and subject-term fit the figure in question is true together with two propositions whose predicate- and subject-term fit the arrangement under scrutiny. Aristotle then presupposes that *necessarily* if a universal affirmative (respectively: negative) proposition is true, then any universal and particular negative (respectively: affirmative) proposition with the same predicate- and subject-term is false.[21] This allows him to infer, on the one hand, that it is *possible* that a universal negative and a particular negative proposition whose predicate- and subject-term fit the figure in question are false while two propositions whose predicate- and subject-term fit the arrangement under scrutiny are true and, on the other hand, that it is *possible* that a universal affirmative and a particular affirmative proposition whose predicate- and subject-term fit the figure in question are false while two propositions whose predicate- and subject-term fit the arrangement under scrutiny are true. This finally enables him to conclude, on the one hand, that it is *not necessary* that either the universal negative or the particular negative proposition whose predicate- and subject-term fit the figure in question results from the two propositions whose predicate- and subject-term fit the arrangement under scrutiny and, on the other hand, that it is *not necessary* that either the universal affirmative or the particular affirmative proposition whose predicate- and subject-term fit the figure in question results from the two propositions whose predicate- and subject-term fit the arrangement under scrutiny.

Aristotle's reasoning is partially captured by the following symbolic representation of it: Aristotle asserts $\alpha \land \beta \land \gamma$, he infers $\Diamond(\alpha \land \beta \land \gamma)$, he presupposes $\Box(\gamma \supset \neg\delta) \land \Box(\gamma \supset \neg\varepsilon)$, he infers $\Diamond(\alpha \land \beta \land \neg\delta) \land \Diamond(\alpha \land \beta \land \neg\varepsilon)$, and he concludes $\neg\Box((\alpha \land \beta) \supset \delta) \land \neg\Box((\alpha \land \beta) \supset \varepsilon)$. The whole reasoning is carried out twice: once with a universal affirmative γ (to which correspond a universal negative δ and a

particular negative ε), once with a universal negative γ (to which correspond a universal affirmative δ and a particular affirmative ε).

Let us take stock to reflect on what Aristotle's method of rejection has accomplished so far. Aristotle is considering a certain way of arranging terms in premises that matches a certain figure. There are four corresponding ways of arranging terms in a conclusion that matches the figure. For each of the four ways of arranging terms, Aristotle specifies an inference whose conclusion does not result necessarily from the premises. That inference is surely not a syllogism because it violates one of the conditions for being a syllogism. This, however, does not exclude that other inferences with terms arranged in the same way could have their conclusion resulting necessarily from their premises. Now, Aristotle surely wants also to exclude these other inferences from the class of syllogisms. How can he achieve this?

This is probably where the condition set by the phrase "due to these things being there" comes into its own (note its occurrence in T3, at 26a4–5). Consider again the final explanation of the phrase in T2: "additionally needing no term from outside for the necessity to come into being" (24b21–2). Some inferences have their conclusion resulting necessarily from their premises, but the necessity of their conclusion resulting from their premises depends on, or "needs", one or more necessarily true propositions that are not among their premises. Consider, for instance, the following inference:

[t] Every triangle studied by Tim is a right-angled triangle
     Every triangle with the Pythagorean property is a triangle loved by Jane
     Every triangle studied by Tim is a triangle loved by Jane

(where the Pythagorean property is the property which a triangle has just if the area of the square built on one of its sides is equal to the sum of the areas of the squares built on its two other sides). The conclusion of [t] results necessarily from its premises, but the necessity of its resulting from them depends on, or "needs", the necessarily true proposition "Every right-angled triangle is a triangle with the Pythagorean property", a proposition that is not among the premises: the dependence, or "need", becomes apparent when one realises that if (counterfactually) the proposition "Every right-angled triangle is a triangle with the Pythagorean property" were not necessarily true, or, in other words, if (counterfactually) it were not the case that necessarily every right-angled triangle is a triangle with the Pythagorean property, then the conclusion of [t] would not result necessarily from its premises. Aristotle's explanation of the phrase "due to these things being there" in T2 indicates that an inference is a syllogism only if it does not have the characteristic of [t] I have just described: an inference is a syllogism only if it is "additionally needing no term from outside for the necessity to come into being" (24b21–2), i.e. only if "no term from outside", i.e. no necessarily true proposition outside the premises, is "additionally needed" (as a necessary condition) "for the necessity to come into being", i.e. for the conclusion's resulting necessarily from the premises.[22]

An important aspect of the situation on which Aristotle is concentrating is that if the conclusion of an inference results necessarily from its premisses but this necessity depends on the specific terms occurring in the premisses and in the conclusion, then the necessity does depend on, or "need", some necessarily true proposition outside the premisses, and the inference is therefore not a syllogism because it fails to satisfy the condition set by the phrase "due to these things being there". This can be seen in the case of [t]: the necessity of [t]'s conclusion resulting from its premisses depends on the specific terms occurring in the premisses and in the conclusion. In particular, it depends on the terms "right-angled triangle" and "triangle with the Pythagorean property". For, if "right-angled triangle" were replaced with "isosceles triangle", then the conclusion of the inference thus obtained, namely,

[t]′ Every triangle studied by Tim is an isosceles triangle
     Every triangle with the Pythagorean property is a triangle loved by Jane
     Every triangle studied by Tim is a triangle loved by Jane

would not result necessarily from its premisses. The phenomenon is not confined to [t]: it holds for all inferences. Therefore, if an inference is a syllogism and therefore satisfies the condition set by the phrase "due to these things being there", then the necessity of its conclusion's resulting from its premisses does not depend on the specific terms occurring in the premisses and in the conclusion. This implies that the necessity of the conclusion's resulting from the premisses is unaffected by uniform replacements of terms. We therefore obtain the following result: if an inference is a syllogism, then not only its conclusion results necessarily from its premisses but also every inference obtained by uniformly replacing the terms actually present in it with new ones has its conclusion resulting necessarily from its premisses.

This result is relevant to the method of rejection by counterexamples. For it implies that once Aristotle has found a single inference that does not have its conclusion resulting necessarily from its premisses, he is in a position to claim that every inference from which the one he has found can be obtained by a uniform substitution of terms does not have its conclusion resulting necessarily from its premisses "due to these things being there" and therefore fails to be a syllogism. This provides an answer to the question prompted by the way in which Aristotle deploys his method of rejection: he finds an inference where terms are arranged in a certain way and the conclusion does not result necessarily from the premisses, and he goes on to claim that no inference where terms are arranged in that way has its conclusion resulting necessarily from its premisses "due to these things being there". Finally, no such inference is a syllogism. To put the point briefly: an inference has its conclusion resulting necessarily from its premisses "due to these things being there" just if it is valid and every other inference where the terms are arranged in the same way is valid.[23]

My interpretation of the role of the condition expressed by the phrase "due to these things being there" is tailored to Aristotle's second and final account of the

phrase: "additionally needing no term from outside for the necessity to come into being" (24b21–2). But it suits Aristotle's first account too: "to result because of these things" (24b20–1). The first account's "because" jargon introduces ideas that pertain to the domain of causality. This fits well with my interpretation, according to which the role of the condition expressed by Aristotle's difficult phrase is to indicate that no factor on which the validity of an inference depends, i.e. no "cause" of the validity, fails to be reported by the premisses. In fact, the theoretical area thereby introduced is one that appears elsewhere in Aristotle's logical works. Aristotle is worried about inferences where the facts reported by the premisses do not match those that are responsible for the conclusion resulting necessarily from them. Usually, he mentions situations where some irrelevant fact is mentioned (such situations are connected with the so-called "fallacy of the false cause");[24] here, in the *Prior Analytics*, he concentrates on situations where some relevant fact is omitted.

Necessity for the a-e *pair in the first figure*. Does any inference that embodies the arrangement of terms described in passage T3 have its conclusion resulting necessarily from its premisses? Consider the following inference:

[d] Every artifact is a cloak
 No doublet is an artifact
 Some doublet is not a cloak

The terms involved in [d] are "cloak", "artifact", and "doublet". The first premiss, "Every artifact is a cloak", is a proposition with predicate-term "cloak" and subject-term "artifact" which is true just if "cloak" belongs to all of "artifact". The second premiss, "No doublet is an artifact", is a proposition with predicate-term "artifact" and subject-term "doublet" which is true just if "artifact" belongs to none of "doublet". The conclusion, "Some doublet is not a cloak", is a proposition with predicate-term "cloak" and subject-term "doublet" which is true just if "cloak" does not belong to some of "doublet". Thus, in inference [d] the terms are arranged in the way specified in T3. To see that the conclusion of [d] results necessarily from its premisses, begin by converting the premisses: the second premiss, "No doublet is an artifact", yields "No artifact is a doublet"; the first premiss, "Every artifact is a cloak", yields "Some cloak is an artifact". From these two propositions, "No artifact is a doublet" and "Some cloak is an artifact", you obtain (by a syllogism *in Ferio*) "Some cloak is not a doublet". Given that "cloak" and "doublet" are synonymous, you may swap their occurrences, thereby obtaining "Some doublet is not a cloak", which is the conclusion of [d].

 The necessity whereby the conclusion of [d] results from its premisses is very "robust": it is guaranteed by the substitution of synonymous expressions. However, [d] does not have its conclusion resulting necessarily from its premisses "due to these things being there": for, as passage T3 shows, some inference obtained from [d] by a uniform replacement of terms *actually* has true premisses and a false

conclusion, and this entails the *possibility* of its premises being true while its conclusion is false, thereby showing that its conclusion does *not* result *necessarily* from its premises, i.e. that it is invalid. Just consider

[d]′ Every man is an animal
      No horse is a man
      Some horse is not an animal

Inference [d]′ is obtained from [d] by a uniform replacement of terms ("artifact" replaced with "man", "cloak" with "animal", and "doublet" with "horse") and is not valid. So, although the conclusion of [d] results necessarily from its premises, it does not do so "due to these things being there". Hence, [d] is not a syllogism.

Syllogistic "form". The ways of arranging terms considered by Aristotle are not of a purely syntactical nature. Rather, they concern the truth-conditions of an inference's premises and conclusion given with respect to the terms they involve. Let me explain with examples:

[b] All birds are bipeds
     All ravens are birds
     All ravens are bipeds

[v] Every mammal is a vertebrate
     Every dog is a mammal
     Every dog is a vertebrate

Inferences [b] and [v] are syllogisms. In [b], one premiss is a proposition with predicate-term "biped" and subject-term "bird" which is true just if "biped" belongs to all of "bird", the other is a proposition with predicate-term "bird" and subject-term "raven" which is true just if "bird" belongs to all of "raven", and the conclusion is a proposition with predicate-term "biped" and subject-term "raven" which is true just if "biped" belongs to all of "raven". Again, in [v] one premiss is a proposition with predicate-term "vertebrate" and subject-term "mammal" which is true just if "vertebrate" belongs to all of "mammal", the other is a proposition with predicate-term "mammal" and subject-term "dog" which is true just if "mammal" belongs to all of "dog", and the conclusion is a proposition with predicate-term "vertebrate" and subject-term "dog" which is true just if "vertebrate" belongs to all of "dog". Hence, for both inferences, there are terms A, B, and C such that the premises are a proposition with predicate-term A and subject-term B which is true just if AaB and a proposition with predicate-term B and subject-term C which is true just if BaC and the conclusion is a proposition with predicate-term A and subject-term C which is true just if AaC. The two inferences therefore have their terms arranged in the same way. But they are not substitution-instances of the same valid inference-schema. To be sure, the first inference is a substitution-instance of the valid inference-schema "All Ss are Ms, all

Ms are Ps, therefore all Ss are Ps"; the second is a substitution-instance of the valid in-
ference-schema "Every S is a M, every M is a P, therefore every S is a P". But these are
different inference-schemata, and there is no single valid inference-schema of which
both inferences are substitution-instances (they are both substitution-instances of the
inference-schema "A, B, therefore Γ ", which, however, is invalid). In this sense, the
ways of arranging an inference's terms considered by Aristotle are not of a syntactical
nature[25] but concern the semantic relations between terms in the propositions that are
the inference's premises and conclusion and the pattern whereby these terms return.

So the arrangement of terms in an inference may be described as a "form" of the
inference, but on condition that the expression "form" is used quite differently with
respect to modern logic. Moreover, in Aristotle the form that consists in the arrange-
ment of terms in an inference is fixed by the inferences that instantiate it: once one
has identified the terms occurring in a given inference, the arrangement of terms can
be immediately read out of the inference (Aristotle restricts his gaze to predicative
declarative sentences).[26] In modern logic, it is usually assumed that the same infer-
ence can instantiate more than one form and is formally valid just if it is an instance
of at least one valid form (where forms are the primary bearers of validity). For
instance, according to the modern approach, inference [v] can be taken to instantiate
two forms: "Z, H, therefore Θ" and "Every S is a M, every M is a P, so therefore,
every S is a P". It is only because it instantiates the second of these forms that [v] is
valid. Thus, according to the modern approach, an inference is valid just if it instanti-
ates at least one valid form, and it is invalid just if it instantiates no valid form. In the
case of Aristotle, inference [v] has exactly one arrangement of terms. In general, for
Aristotle every inference has exactly one form, which is fixed by the arrangement of
terms in its premises and its conclusion. Note that in Aristotle the property of having
the conclusion that results necessarily from the premises, i.e. validity, is attributed
only to inferences, never to ways of arranging terms or to forms (the idea of a valid
form is modern).

3.   Non-syllogistic Valid Inferences

An example of non-syllogistic necessity. Apart from the passage about the method
of rejection by counterexamples, another passage of the first book of the *Prior Ana-
lytics* promises to provide some information concerning Aristotle's views about
the requirement set by the phrase "due to these things being there". It belongs to
chapter 32, where a novel section of Aristotle's study of syllogisms begins: Aris-
totle is now interested in how given inferences in natural language can be reduced
to ("ἀνάγειν", cf. 46b40, 47a36, 50a17), or analysed into ("ἀναλύειν", cf. 47a4),
syllogisms in the figures.

T4 First one must try to select the propositions of the syllogism . . . , then con-
     sider which is general and which particular; and, if they have not both been
     assumed, one must oneself posit one or the other of the two. For, sometimes
     after proposing the universal proposition they do not assume the one contained
     in this one, neither in writing nor while interrogating; or they propose these but

they omit those through which these conclude, while they ask other things in vain.[27] We must then inquire whether something superfluous has been assumed and whether one of the things that are necessary has been omitted, and the one we must posit and the other subtract, until we reach the two propositions: for without these it is impossible to reduce the inferences that have been asked in this way. In some it is easy to see what is missing, but others elude us and seem to syllogize because something necessary results from the things laid down, for instance if it were assumed that a substance is not destroyed unless a substance is destroyed, and that if the things of which something is made are destroyed then what is made of them also perishes, for once these have been posited it is necessary that a part of a substance be a substance, but it is not syllogised through the things assumed, but propositions are wanting. Again, if, there being a man, it is necessary for there to be an animal, and, there being an animal, it is necessary for there to be a substance, then, there being a man, it is necessary for there to be a substance.[28] But it has not yet been syllogized: for the propositions are not as we say. In cases of this sort we err because something necessary results from the things laid down, since the syllogism also is necessary. But the necessary extends beyond the syllogism, for every syllogism is necessary while not everything necessary is a syllogism.

(Arist. *APr*. I 32, 47a10–35)

I focus on the first of the two inferences mentioned in T4:[29]

[s]   A substance is not destroyed unless a substance is destroyed
      If the things of which something is made are destroyed then
      what is made of them also perishes
      _____
      A part of a substance is a substance

The first premiss of inference [s], "A substance is not destroyed unless a substance is destroyed", is rather compressed. I take it to be a telegraphic formulation of the claim that only a substance can by its destruction bring about the destruction of a substance.[30] Such a claim has some intuitive appeal because substances are the universe's most fundamental entities.

Aristotle explicitly describes inference [s] as having the conclusion that results necessarily from the premises, i.e. as valid, but as failing to be a syllogism (cf. 47a23–4, 47a26–7). Since it has two premises and its conclusion is different from both of them, the reason that [s] fails to be a syllogism must be that it violates the condition expressed by the phrase "due to these things being there". The validity of [s] depends on the specific terms it contains: in fact, some inference obtained from [s] by a uniform substitution of terms is invalid because it has true premises and a false conclusion (consider, for instance, the result obtained from [s] by replacing the only occurrence of "part" with "accident": the conclusion of the inference thus obtained, "An accident of a substance is a substance", is surely false while the premises, which are the same as [s]'s, are true).[31] Thus, Aristotle seems to be committed to acknowledging an inference that has its conclusion resulting necessarily

from its premises but violates the condition expressed by the phrase "due to these things being there" because some inference obtained from it by a uniform substitution of terms, i.e. some inference that shares its arrangement of terms, does not have its conclusion resulting necessarily from its premises. This fits well with the results of my analysis of the method of rejection by counterexamples. The reason why inference [s] depends for its validity on the specific terms it contains is that it includes two pairs of semantically equivalent but distinct expressions: the pair "to be made of"–"to be a part of" and the pair "to perish"–"to be destroyed". The validity of [s] depends on two necessarily true propositions: the proposition "One thing is made of another just if the latter is a part of the former" and the proposition "Something perishes just if it is destroyed". Neither of these propositions is among the premises of [s]: Aristotle could say that [s] is not an inference "additionally needing no term [*sc*. no necessarily true proposition] from outside [*sc*. outside those listed among the premises] for the necessity to come into being" (24b21–2). In order to get rid of the dependence on specific terms, one would need to add these propositions as premises. It is likely that this is what Aristotle has in mind when he says that in inference [s] the conclusion "is not syllogized through the things assumed, but propositions are wanting" (47a27–8).[32]

4. Conclusion

Preservation of necessity. The following result has been reached: Aristotle's view is that the conclusion of a given inference results necessarily from its premises "due to these things being there" just if not only the given inference has its conclusion resulting necessarily from its premises but also every other inference where the terms are arranged in the same way as in the given one has its conclusion resulting necessarily from its premises. This Aristotelian view is important with a view both to its past and to its future.

With respect to the past, it is important because the presence of the phrase "due to these things being there" in the definition of the syllogism amounts to an explicit theoretical recognition of the formal character of logic. This marks a major difference with respect to the *Topics*. Although this earlier work contains a definition of syllogism that is close to that of the *Prior Analytics*, and although the way in which it develops its theory arguably shows that its author is conscious of the formal character of the discipline, it does not contain a description of the formal character of the inferences it deals with. To put the matter abruptly: the dialectic described in the *Topics* is, perhaps, formal; but it does not say that it is.

With respect to the future, Aristotle's view that the validity of a given inference must be shared with the other inferences of the same form is remarkably different from the approach usually taken by modern logic. The modern approach, influenced by Tarski's work, usually analyses the necessity of an inference's conclusion resulting from its premises as preservation of truth from the premises to the conclusion under all ways of interpreting the non-logical vocabulary.[33] Without betraying its spirit, one could also describe the modern approach as analysing the necessity of an inference's conclusion resulting from its premises as preservation

of truth from the premisses to the conclusion in every inference of the same form as the given one.[34] Aristotle's view is different: it does not analyse the necessity of a given inference's conclusion resulting from its premisses as preservation of truth in all inferences of the same form as the given one.[35]

What is validity for Aristotle? What is the nature of the necessity of an inference's conclusion resulting from its premisses? In the *Prior Analytics*, Aristotle seems to take this necessity as an unanalysed given.[36] The only trait of it that surfaces is that an inference where the premisses are true and the conclusion is false does not have the conclusion resulting necessarily from the premisses. This is fairly trivial and says little about the necessity in question.

Modern approaches to modal logic might tempt one to credit Aristotle with an account of necessity that relies on "possible situations". So suppose it to be the case that, according to Aristotle, for the conclusion of an inference to result necessarily from its premisses is for there to be no possible situation where the premisses are true and the conclusion false.[37] Consider the following inference (an instance of *ex contradictione quodlibet*):

[c] Every dog is a vertebrate
Some dog is not a vertebrate
Some cat is a mouse

Since there is no possible situation where [c]'s premisses are true, there is no possible situation where [c]'s premisses are true and its conclusion false; moreover, for every inference that shares [c]'s arrangement of terms, there is no possible situation where its premisses are true and its conclusion false. So if, according to Aristotle, for the conclusion of an inference to result necessarily from its premisses were for there to be no possible situation where the premisses are true and the conclusion false, [c] would be a syllogism (note that [c] has two premisses and its conclusion is different from them).

There are reasons for thinking that according to Aristotle inferences like [c] are not syllogisms. For, in *Prior Analytics* II 15, Aristotle studies syllogisms whose premisses are either contradictory or contrary propositions and he examines what happens to syllogisms of this sort in each of the three figures. He says nothing about inferences with contradictory premisses and a completely unrelated conclusion. Such a silence would be strange if he thought that inferences with contradictory premisses and a completely unrelated conclusion are syllogisms.[38] It therefore suggests that in his view, inferences with contradictory premisses and a completely unrelated conclusion, namely, inferences like [c], are not syllogisms. To be sure, the evidence is not decisive. For instance, Aristotle's silence could be due to the simple fact that he had not thought of inferences like [c]. Alternatively, despite what chapter *Prior Analytics* II 15 leads us to expect, perhaps he took [c] to be an imperfect syllogism and had a way of perfecting it.[39] Nevertheless, it is at least likely that Aristotle did not regard inferences like [c] as syllogisms. This tells against crediting Aristotle with the view that for the conclusion of an inference to

result necessarily from its premises is for there to be no possible situation where the premises are true and the conclusion false.

I suspect that Aristotle would deny that the conclusion of [c] results necessarily from its premises, i.e. would deny that [c] is valid, and for this reason would also deny that [c] is a syllogism. Hence, the issue of the preservation of validity across inferences of the same form as [c] would not even arise for him.[40]

Does Aristotle take the Stoic approach to validity? Although, as I said earlier, in the *Prior Analytics* Aristotle seems to take necessity as an unanalysed given, one would like to have at least a vague grasp of the intuitions that might lead Aristotle to deny that the conclusion of [c] results necessarily from its premises. Any attempt to reconstruct his intuitions in this area is bound to be speculative. I shall nevertheless float a hypothesis.

Aristotle might be thinking roughly along the same lines as some Stoics did about one century after him: he might assume that an inference's conclusion results necessarily from its premises just if its premises jointly exclude the contradictory of its conclusion.[41] The premises of [c] are of course jointly impossible, but it would not be natural to regard them as jointly excluding the contradictory of the conclusion of [c]. If this was the way Aristotle was thinking, one would see why he could deny that [c] is valid. What might tell in favour of crediting Aristotle with a line of this sort is that in the *Prior Analytics* (II 4, 57b13–4), he appears to endorse the view that a proposition does not result necessarily from its own negation. His endorsement of this view would be understandable if he thought that a proposition results necessarily from some propositions (one or more) just if the latter propositions jointly exclude the contradictory of the former and he further assumed that no proposition excludes itself.[42]

Notes

1 This study greatly benefitted from the comments of an anonymous referee.
2 Cf. *Top.* I 1, 100a25–7; *SE* 1, 164b27–165a2; *Rh.* I 2, 1356b16–8. The translations of Aristotelian passages are my own.
3 Cf. *APr.* I 14, 34a16–9; 23, 40b33–7; II 2, 53b16–24; *APo.* I 3, 73a7–11; II 11, 94a21–2; 94a24–7; Alex. Aphr. *In APr.* 17, 10–8, 7 Wallies; Mignucci (1997: 71–3); Striker (2009: 79–80).
4 Cf. *APr.* I 23, 40b31–3; II 16, 65a7–9; *APo.* I 3, 73a4–6; *SE* 5, 167a25–6; 6, 168b25–6; Alex. Aphr. *in APr.* 18, 8–19, 3 Wallies; Mignucci (1997: 71–2); Striker (2009: 80).
5 Cf. *APo.* II 11, 94a24–34; *Ph.* II 9, 200a15–30.
6 Cf. *APr.* I 4, 26a13; 5, 27a2–3; 27a23–4; 6, 28a37; 28b7; 28b39; 7, 29b20; 14, 33b18; 15, 33a25; a34–5; 16, 35b32; 18, 37b21; 20, 39a28–9; 24, 40b5–6; 24, 41b25–6; 45, 51a12–3; II 15, 64a23.
7 Cf. *APr.* I 6, 28b39; 18, 37b21–2; 20, 39a28–9.
8 Cf. *APr.* I 6, 28a38; b32–3; 7, 29a20–1; 11, 31b33; 16, 35b26–7; b37; 22, 40a5; 40a11; 24, 41b6–7.
9 Cf. *APr.* I 6, 28a39; 28b31–2; 28b38–9; 7, 29a20–1; 11, 31b33; II 20, 66b13.
10 Cf. Ebert and Nortmann (2007: 227)*.* Another likely possibility is that in T2 Aristotle could be resorting to a generic use of "term" that is unconnected with its technical use fixed in 24b16–8, a generic use according to which it means something like "factor": cf. *Cael.* I 12, 282a1. The translation of Crubellier (2014: 53) seems to adopt such an exegesis.

11 Cf. Barnes ([1980] 2014: 362); Barnes ([1981] 2014: 100–1).

12 Cf. *APr*. II 2–4; *Top*. VIII 11, 162a8–11; Mignucci (1998: 63); Castagnoli (2016: 15).

13 Cf. Mignucci (2002: 6); Mignucci (2008: 252–3); Morison (2015: 113). On one occasion (*in APr*. 350, 14 Wallies) Alexander paraphrases Aristotle's "τῷ ταῦτα εἶναι" by "τῷ ταῦτα κεῖσθαι".

14 Cf. Alex. Aphr. *in APr*. 21, 10–23, 2 Wallies; Ammon. *in APr*. 30, 5–18 Wallies; Phlp. *in APr. 35, 2–36, 13* Wallies; Frede ([1974] 1987: 115); Mignucci (2002: 6–7), which retracts (1996); Striker (2009: 81). The only exceptions known to me are Hadgopoulos (1979: 121) and Mignucci (1996: 47–8).

15 Cf. Alex. Aphr. *in APr*. 21, 21–4 Wallies; Pacius (1605: 115); Di Lascio (2014: 273–4).

16 Cf. Mignucci (1996: 47–8).

17 In two passages of other works dedicated to inferences that pertain to the sphere of dialectic (*Top*. VIII 1, 161b28–30 and *SE* 6, 168b22–5), Aristotle takes the phrase "due to these things being there" to require the avoidance of idle premises. It is not clear whether these remarks concerning the role of the phrase "due to these things being there" in other works should be brought to bear on the *Prior Analytics*. From a methodological point of view, the correct procedure is to understand the meaning of the phrase "due to these things being there" in the *Prior Analytics* on the basis of the explanation offered in this work itself. After all, the phrase could be used differently in different works. It is also worth noting that the last sentence of the first of the two passages, "so that the syllogism does not come about due to these things being there" (161ᵇ30), seems to presuppose that an inference can be a syllogism even if it violates the condition set by the phrase "due to these things being there". If it does presuppose this, then the role envisaged by the passage for the condition set by the phrase "due to these things being there" is radically different with respect to the *Prior Analytics*.

18 I construe "διὰ τούτων" with "συλλογισμός" (as does Jenkinson (1928), *ad loc.*) rather than with "ὄντος ἀναγκαίου" (as does Smith (1989: 4)): cf. I 13, 32a17–8; 27, 43b13–4; I 32, 47a27–8.

19 In discussing the four semantic relations between terms, I adopt certain standard traditional abbreviations. Thus, every instance of every schema in the following left-hand column will have the same meaning as the corresponding instance of the schema on the same line in the following right-hand column:

> "Π*a*Σ"   "Π belongs to all of Σ"
> "Π*e*Σ"   "Π belongs to none of Σ"
> "Π*i*Σ"   "Π belongs to some of Σ"
> "Π*o*Σ"   "Π does not belong to some of Σ"

20 *Ab esse ad posse valet consequentia*. Cf. Lear (1980: 55–6, 67).

21 This presupposition is warranted by the laws that govern contradictory and contrary propositions in the "square of opposition".

22 The proposition on which the conclusion's resulting necessarily from the premises depends must be a *necessarily* true proposition: otherwise, it will not suffice to guarantee that the conclusion results *necessarily* from the premises. The dependence of the conclusion's resulting necessarily from the premises on it becomes clear by considering what the situation would be like if this proposition, which in fact is necessarily true, were not necessarily true.

23 Cf. Corcoran (1974: 105–6).

24 Cf. *APr*. II 17, 65b13–66a15; *Top*. VIII 11, 161b28–30; *SE* 4, 166b26; 5, 167b21–36; 6, 168b22–5; 7, 169b12–7; 8, 170a1–2; 29, 181a31–5; Alex. Aphr. *in APr*. 22, 30–23, 2 Wallies; Castagnoli (2016: 9–28).

25 Cf. Morison (2011: 172–82).

26 Cf. I 1, 24a16–7; 24a28–9; 24b16–8.

27 Aristotle means that one must find the major and the minor premiss, and that if either is missing one must supply it. The terminology he uses to refer to the major and minor premiss is unusual and fluctuating.

28 My translation here presupposes that the man–animal–substance inference has conditionals as premises and conclusion. This is not the only possibility: for a discussion of the alternatives and a defence of a translation along the lines of the one offered above, see Ebrey (2015: 190–1).

29 The reason why the second inference mentioned in T4, the man–animal–substance inference, does not rank as a syllogism is that "the propositions are not as we say" (47a30–1), i.e. are not "propositions" in the sense defined at the beginning of the *Prior Analytics* (at I 1, 24a28–30). Though interesting in its own right, this way of failing syllogistic status is not pertinent to the present inquiry.

30 A different reconstruction of the first premise of [s] is favoured by Ebert and Nortmann (2007: 800).

31 Actually, there are reasons to doubt the second premise of [s]: if I lose a hand, or (less dramatically) a hair, it does not follow that I perish. The second premiss of [s] seems to be true of entities that populate Aristotle's category of quantity: lines, surfaces, bodies, places, stretches of time, numbers, sentences (cf. *Cat.* 6, 4b20–5a37). I wonder whether [s] played a role in Aristotle's reflections about the mereological properties of substances and quantities.

32 Cf. Pacius (1605: 185–6); Malink (2014: 164–5); Malink (2015: 287–8). Steinkrüger (2015: 1436–9) argues for a radically different interpretation of T4. A passage in the *Sophistical Refutations* (6. 168a26–33) can be read in such a way as to commit Aristotle to the claim that the use of different albeit synonymous expressions in an inference can be responsible for its not being a syllogism. However, the interpretation of this passage is controversial: its different interpretations are clearly outlined by (Malink 2014: 160–1), but doubts may be raised about his preferred solution.

33 Cf. Tarski ([1936] 1956: 417).

34 Quine (1986: 53–5) actually favours an account of this sort.

35 Cf. Mignucci (1998: 67–9). By contrast, Łukasiewicz (1957: 10–12) and Patzig (1968: 26–7) attribute to Aristotle a Tarski-style analysis of validity.

36 Cf. Lear (1980: 2–14); Cavini (1989: 35).

37 Cf. Hodges (2001: 38).

38 Cf. Priest (2007: 132); Malink (2013: 78–9). Woods and Irvine (2004: 64–5) argue that Aristotle has systematic reasons for rejecting *ex contradictione quodlibet* as a general principle.

39 One of the most authoritative recent reconstructions of Aristotle's syllogistic, due to John Corcoran, implies that inferences like [c] are syllogisms that can be perfected by reduction to the impossible: cf. Corcoran (1972: 697–9) and Corcoran (1974: 108–12).

40 Thanks to Marko Malink for alerting me to the issue whether instances of *ex contradictione quodlibet* turn out to count as syllogisms.

41 Cf. D.L. 7.77.

42 A similar suggestion had already been made by Hadgopoulos (1979: 123–4).

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5 Aristotle on Negative Terms and Obversion

Ricardo Santos

1. Introduction

Commentators usually take "Aristotle's logic" to be the logical system described in *Prior Analytics* I 1–22, which can be divided in two main parts, the assertoric and the modal syllogistic. In that system, negation works in a way that, from a modern standpoint, looks uncommon and rather limited. It is often pointed out that Aristotle does not use sentence negation, the kind of external negation we know from Stoic logic and its descendant, modern propositional logic. Negation in Aristotle's logic is internal, it attaches to the verb of the sentence or, more precisely, to the copula.[1]

But that is not the only difference. We are used to see negation as a unary operator (expressing a unary truth-function) that can be iterated and combined with other operators (unary or binary), to yield more and more complex statements. For Aristotle, in contrast, negation is not an independent operator and basic negative statements are not more complex than affirmative ones. In his view, affirmative and negative statements are structurally on the same level, the difference between them being that one has an affirmative while the other has a negative copula.[2] Being part of a logically simple copula, and not an operator on copulas, negation cannot in this view be iterated.[3] If one wants to deny a negative statement, one must replace the negative copula with an affirmative one.

Negation in Aristotle's logic seems also limited because the copula is the only part of the sentence where it can enter. In comparison, modern predicate logic offers a much wider range of options. For example, a sentence like "Some stars are mortal" is analysed as having a logical form, "For some *x*, *x* is a star and *x* is mortal", which contains four parts that can be negated. It is interesting to notice that, at some point in his work, Aristotle must have realised that his logic has that limitation and made an essay to improve it in that respect. Chapter 10 of *De Interpretatione* bears witness to that effort. In it, Aristotle explores ways of combining standard copula negation with a new form, which may be called *term negation* and consists in the operation of replacing a term "*A*", occurring as subject or predicate in a categorical proposition, with the corresponding negative term "not-*A*". Again, this negation cannot be iterated: if one wants to negate a negative term, one must replace it with the corresponding positive term. Using this new form, Aristotle gives examples of surprising complexity, like "Not every man is not-just"

(19b34–5) or "Every not-man is not-just" (20a22–3). While obviously taking these statements to be meaningful, he is not very clear about the meaning he attaches to them and in particular to their components "not-man" and "not-just".[4]

Chapter I 46 of the *Prior Analytics*, which most probably is a revised and improved version of *De Interpretatione* 10, opens with the question whether statements of the forms "S is not P" and "S is not-P" have the same or different meanings. This question invites a comparative study of copula negation and term negation. Aristotle undertakes that study and concludes that they must have different meanings, for one is a negation whereas the other is an affirmation. This has great significance because, in his logical system, affirmations and negations are always proved in different ways (through different moods). Now, if "S is not-P" is an affirmation, it must have an opposite negation and that is "S is not not-P". With the resulting four forms, Aristotle draws a diagram (in 51b36–9) that is the ancestor of the now famous "square of opposition". Analysing the logical relations represented in that square, he describes a form of inference that later became known as *obversion*. In traditional logic, obversion is usually defined in the following way: from a categorical proposition of the form "[Every/Some] *S* [is/is not] *P*", one gets its obverse by (1) changing its quality and (2) replacing its predicate with a corresponding "negated predicate" (subject and quantity being kept fixed). For example, from "Every man is just", one may infer, by obversion, "No man is not-just". Aristotle's remarks about the square imply that he regards the obversion of affirmative to negative propositions as valid but rejects the obversion of negative to affirmative propositions as invalid. Although that is indeed the view standardly ascribed to Aristotle in the textbooks on the history of logic,[5] it is far from clear why he thinks that obverting a negative proposition is not logically valid and how that is related to the meaning he attaches to negative terms.

Negative terms and obversion are understudied topics in Aristotle's logical works. Most accounts of his assertoric logic limit their attention to the four basic forms of categorical proposition and do not consider term negation at all. Łukasiewicz explicitly says that Aristotle excluded negative terms from his logical system, and Patzig writes that "Aristotle ignored negative terms and hence the logical operation of the negation of term-variables".[6] Those statements are understandable, for it is undeniably true that the logical system that Aristotle describes in *APr*. I 1–22 does not contemplate negative terms. However, *Int*. 10 and *APr*. I 46 provide solid evidence that at a certain stage in the development of his logical thinking, Aristotle gave considerable attention to the use of negative terms and took them seriously enough to have considered the possibility of extending his syllogistic to include them. Apparently, he did not complete that project. Nonetheless, what he actually wrote about it is not only interesting in itself but can also be informative in important ways about Aristotle's general semantic views. In particular, one naturally wonders what is the semantic understanding of term negation that underpins Aristotle's judgements concerning obversion.

In this chapter, I discuss the semantics of term negation from Aristotle's point of view. The guiding question is: which semantics for term negation captures best the various things Aristotle says about negative terms and the validity of inferences

involving them? I consider three different semantic frameworks and possible answers within each framework.

The first framework is that of traditional set-theoretic semantics, according to which positive terms should be assigned sets of individuals as their interpretations and negative terms should be assigned their complements. This suggestion seems hard to reconcile with Aristotle's view that "being not-white" and "not being white" are different in form as well as in content – unless one takes each complement to be relative, not to the whole domain but to some suitable proper subset of the domain. I argue against this appeal to restricted complements, showing that it is not supported by the textual evidence, that it would have undesirable consequences and that it is actually in conflict with some of the things Aristotle says.

The second framework is that of mereological semantics, which has in recent years been ingeniously explored as providing new and interesting answers to old problems in Aristotle's logic.[7] According to this semantics, predication is a part-whole relation, i.e. a primitive relation of inclusion. In this framework, the natural way to handle negative terms would be in terms of mereological complements, where the complement of something is composed of all and only those things that are disjoint from it. The question whether Aristotle could assume that everything has a complement has already been singled out as controversial for independent reasons. His views on obversion make it even more so and raise serious doubts about the tenability of the mereological approach.

After these criticisms, I defend a semantics that goes back to standard set-theoretic relations but, unlike the traditional semantic theory first considered, gives the truth conditions of categorical propositions in such a way that true affirmations require the existence of things falling under their subjects, while true negations do not. In this semantics, negative terms have simple complements as their extension, and the obversion of affirmations comes out valid, but the obversion of negations fails, in accordance with Aristotle's pronouncements. I show that there is strong textual evidence in favour of the modified truth-conditions and that the few recalcitrant passages can be explained away.

2. Term Negation in the Traditional Set-Theoretic Semantics

I start by briefly introducing the basic notions of the set-theoretic semantics traditionally given to the language of Aristotle's assertoric logic. Every interpretation of the language is based on a non-empty set of individuals, usually called its *domain*. Every singular term (if there are any) is assigned an individual from the domain as its *referent* and every general term is assigned a subset of the domain as its *extension*. Then, truth-conditions for the different forms of propositions are given in terms of relations between the sets that are the extensions of the terms composing them, namely,

(T1) an *a*-proposition, of the form "*P* belongs to every *S*" is true if and only if the extension of "*S*" is included in the extension of "*P*";

(T2) an *e*-proposition, of the form "*P* belongs to no *S*" is true if and only if the intersection of the extensions of "*S*" and "*P*" is empty;

(T3) an *i*-proposition, of the form "*P* belongs to some *S*" is true if and only if the intersection of the extensions of "*S*" and "*P*" is not empty; and

(T4) an *o*-proposition, of the form "*P* does not belong to some *S*" is true if and only if the extension of "*S*" is not included in the extension of "*P*".

Finally, logical consequence is defined as truth preservation in every interpretation.

As is well-known, the main difficulty for this semantics lies in the so-called *problem of existential import*. For example, an inference from "*P* belongs to every *S*" to "*S* belongs to some *P*", which Aristotle regards as valid (and adopts as a basic rule, usually called the rule of *a*-conversion), comes out invalid according to this semantics. The usual way of repairing this conflict consists in removing the empty set from the possible extensions of general terms. In other words, empty terms would not be allowed in Aristotle's logic. Critics of this approach think that the requirement that every term must apply to something is an extra-logical and unrealistic assumption that would diminish the value of the logic. Besides, there is textual evidence against it: for example, in *APr*. I 38, Aristotle gives a syllogism with "goat-stag" (his favourite example of an empty term) as minor term. Those in favour of the traditional approach have some lines of defence available to them, which I will not review,[8] since the main issue I am here concerned with is how the approach could handle negative terms and inferences by obversion.

In this semantics, the natural way of dealing with the negation of terms is by using complementation of sets and saying that, if the extension of a term T is some set α (of individuals from the domain), then the extension of the negative term "not-T" is the complement of α, that is, the set of all individuals in the domain that are not members of α. However, this rule, together with the truth-conditions given, validates forms of obversion that are rejected by Aristotle, as for example the inference from "Some S is not P" to "Some S is not-P".

One way to overcome this difficulty would be to impose some restriction on the complementation, saying instead that, if the extension of T is α, then the extension of "not-T" is the complement of α, not in the whole domain but relative to some suitable proper subset R of the domain (which must include α), that is, the set of all members of R that are not members of α. With this modified rule in place, the inference from "Some S is not P" to "Some S is not-P" would come out invalid because there would now be room for interpretations in which some S-objects are not members of the extension of "P" (thus making the premise true) and, *because they lie outside R*, are also not members of the extension of "not-P" (thus making the conclusion false). Could Aristotle have something like this rule in mind, understanding term negation on the basis of such *restricted complements*? I will argue that he did not, although several leading interpreters read him that way.

One strategy to implement the idea of restricted complements would be to claim that general terms have, as part of their meaning, something one might call a *range of application* (or a range of possible values) and that it only makes literal sense to

affirm or deny them of objects in that range. For example, "green" could only be affirmed or denied of material things or bodies and it would be *meaningless* to say that a number is or is not green.[9] Evidently, Aristotle could not agree with this view, for he thinks that "of every single thing either affirmation or denial is true" (*APr.* I 46, 51b33).[10] For him, even though numbers are not the kind of thing that could have a colour, it is true that numbers are not green.

From an Aristotelian point of view, a better way of using restricted complements to give an account of negative terms invalidating the obversion of negations would be to consider that, if an object lies outside the range of application of a term T, then while it is true to deny T of it, it would be *false* to affirm the negative term "not-T" of it. For example, while numbers are indeed not green, it would be false, according to this proposal, to say that they are not-green. The negative term would have a narrower (and in a way more positive) meaning, according to which it would only apply to things that could be coloured (*viz*. bodies) but are not green. This view strikes me as very implausible, especially if it is to be applied across the board, to negative terms of any sort. It is hard to find a sensible reason to hold that genuine entities like numbers (whatever their nature) are not green but fail to be not-green and are not clouds but fail to be not-clouds. Be that as it may, that is exactly the view most commonly ascribed to Aristotle. For ease of reference, I will call it *Restricted Complements*.

J. L. Ackrill, in his notes on *Int.* 10, makes "two suggestions as to precisely what force Aristotle means to attach to 'is not-just'" and says that "it is difficult to decide between [them]" (1963: 143–4). According to one suggestion, "not-just" is equivalent to "unjust", bearing in mind that "Aristotle recognizes that there is an intermediate condition between justice and injustice" in *Cat.* 12a24–25. According to the other, "not-just" means "either unjust or in the middle condition between being just and being unjust".[11] The important thing to notice is that, on both options, the extensions of "just" and "not-just" would not be jointly exhaustive of the domain. There would be things belonging to neither of them. And Ackrill gives an example: "stones are not just but they are not not-just" (1963: 143). If Aristotle were to agree with Ackrill's example, he would accept Restricted Complements.

Mario Mignucci states that, in Aristotle's view, the extension of "not-white" is not "the complementary class" of the extension of "white" (1969: 508). He adds,

> Instead, here Aristotle places himself on the level of ordinary language, where "not-white", in the proposition "*x* is not-white", names, not the class of all elements that are not white, but rather that which is of a colour other than white.[12]

For one last example of support to Restricted Complements, Gisela Striker says that, for Aristotle,

> a statement of the form "S is P" may be false in three different types of cases: either (i) when S lacks the property P, but could have it, or (ii) when S is not the sort of thing that could be P, or (iii) when S does not exist. . . . In order to

mark the distinction between the three types of cases, Aristotle engages in a bit of linguistic regimentation. He introduces a special and slightly awkward phrase *to indicate the first kind of case*, by placing the negation after the word "is" instead of before it. I have followed other modern translators in rendering these expressions as "is not-P" by contrast with the standard "is not P".

<div align="right">(2009: 241–2, my italics)</div>

She means that the standard form of negation, "S is not P", is true in all the three cases alike and it does not differentiate between them. Aristotle would have introduced the negation of terms to be able to distinguish the first case from the other two.[13] A statement of the form "S is not-P" would be true in the first case, but it would be false in the remaining two. Again, the characteristic claim of Restricted Complements surfaces: if S is not the sort of thing that could be P (as, for example, a stone is not the sort of thing that could be just), then S is not P, but it is false to say that S is not-P.

I believe there is no sufficient textual evidence for Restricted Complements as an interpretation of Aristotle's understanding of negative terms. What most commentators are doing when they defend that view is trying to assimilate negative terms either to contraries or to privations. However, as I will argue, the texts do not show that Aristotle thinks they are equivalent.

In *Categories* 10, 11b38–12a25, Aristotle draws a distinction between two kinds of contraries: those that have nothing intermediate and those that have something intermediate between them. For example, there is no intermediate between sickness and health. Every animal's body is either sick or healthy, *tertium non datur*. Similarly, every number must be either odd or even. But between black and white, there are many other colours. And a human being can be neither good nor bad or neither just nor unjust. Aristotle's description of these examples shows that he takes contraries to have something like a *range of application*: he remarks that sickness and health "naturally occur in animals' bodies", that odd and even "are predicated of numbers", that black and white "naturally occur in bodies", and that bad and good "are predicated both of men and of many other things". Clearly, the opposition between a pair of contraries – of either kind – occurs only within their specific range of application. An animal that is not sick must be healthy, and a body that is not white must be black or of some other (intermediate) colour. However, it is not the case that everything that is not sick must be healthy, because numbers, for example, are neither sick nor healthy.[14] Hence, contraries provide a perfect model of the sort of opposition in which opposites are incompatible or mutually exclusive but not jointly exhaustive of the domain. Therefore, if negative terms worked like contraries, that would explain how predications of "T" and "not-T" could be both false in some cases.

However, there is no mention of negative terms in the discussion of contraries in *Cat*. 10. It is true that there is some overlap of examples between that discussion and the discussions of negative terms in *Int*. 10 and *APr*. I 46, for "just", "good" and "white" are used on both occasions. But there is no indication in *Cat*. 10 that Aristotle equated negative terms with contraries. The text is silent about

the relation between "not-just" and "unjust" or between "not-white" and "black". Besides, even if some negative terms are (as it were) "negated contraries" like "not-just", it is important to note that not all of them are. One of the main examples in *Int.* 10 is "not-man", and that is obviously not the contrary of "man", because we know from *Cat.* 5 that substances have no contraries (3b24–7).

What is probably driving interpreters like Ackrill to these assimilations is a re- mark that Aristotle makes about "privations" (στερήσεις) in *Int.* 19b24 and repeats in *APr.* I 46, 52a15. In these two passages, Aristotle is describing the relations be- tween the four forms "S is P", "S is not P", "S is not-P", and "S is not not-P" (which in *APr.* I 46 he labels, with their subjects suppressed, A, B, C, and D, respectively), and he draws an analogy involving two more forms, "S is Q" and "S is not Q", where "Q" is opposed to "P" as a privation to a possession. He draws a diagram with the form of a square, with A and B on the top corners, C under B and D under A. He gives several examples of predicates that could take the place of "P" – "just", "equal", "good", "white" – but, for the analogy with privatives, he gives the pair "equal" *vs* "unequal" as an example of possession and privation.

Aristotle's choice of example seems a bit odd because "equal" and "unequal", or equality and inequality, are not paradigmatic of the opposition between posses- sion and privation (which he illustrates, in *Categories* 10, with sight and blind- ness). Aren't equal and unequal opposed as contraries rather than as possession and privation? Perhaps that explains why commentators vacillate, equating nega- tive terms sometimes with contraries, sometimes with privatives. In fact, it does not matter much, so long as the opposition holds *in both cases* within a restricted range. And that is indeed the case, for Aristotle has made clear in *Categories* 10 that a privation cannot be predicated of everything that lacks the corresponding possession (he said there that "it is not what has not teeth that we call toothless, or what has not sight blind, but what has not got them at the time when it is natural for it to have them" [12a31–3]). Restricted Complements is true both of contraries and of privative terms. Hence, if negative terms are equivalent to either of them, Restricted Complements is true of negative terms as well – or so the defenders of this interpretation think.

The interpretation is not supported by the text, though. Aristotle does not say that negative terms as "not-just", "not-equal", or "not-healthy" mean the same as "unjust", "unequal", or "sick". He does not even say that they are true of the same things. Here is what he says:

> The privations too are similarly related to their predications[15] in this arrange- ment: let "equal" be designated by A, "not equal" by B, "unequal" by C, "not unequal" by D.
>
> (*APr.* I 46, 52a15–7)

Aristotle is making an analogy. In the square he has described, the relation of "S is not-P" to "S is P" is similar to the relation of "S is Q" to "S is P" when Q is a privation opposed to P. For example, "*x* is not-equal" and "*x* is unequal" are "simi- larly related" to "*x* is equal". Perhaps a better example would be to say that "*x* is

not-healthy" and "*x* is sick" are "similarly related" to "*x* is healthy". As we will see in a moment, the relation is the following: they cannot both be true, but they can be both false. The important thing to note is that having this relation in common does not entail that the terms "not-equal" and "unequal", or "not-healthy" and "sick", mean the same. More than that, it does not even entail that they are true of the same things. If two terms stand in this relation to a third one *for different reasons*, they can have different extensions. Crucially for our purposes, it can happen that one satisfies Restricted Complements while the other does not.

The logical relations that Aristotle finds in the square are quite simple and well-known by now. "S is P" and "S is not P" (labelled A and B) compose a contradictory pair, and so do "S is not-P" and "S is not not-P" (labelled C and D) (the first of each pair affirming what the second denies). The members of such pairs cannot both be true, but one of them must be. Or, as Aristotle puts it, after removing the subjects from the statements: "one or the other . . . will belong to everything and never both to the same" (51b39–40). The opposition between "S is P" and "S is not-P" (or between A and C, along the diagonal from the top left to the bottom right) is, according to Aristotle, weaker:[16] they cannot both be true, but they can be both false. From the fact that they cannot both be true, it follows that C entails B (i.e. that "S is not-P" entails "S is not P") and that A entails D (i.e. that "S is P" entails "S is not not-P"). Notice that these two entailments are forms of obversion of an affirmative statement. On the other hand, from the fact that A and C can be both false, it follows that the converse entailments do not hold: B does not entail C and D does not entail A. The consequence is that the obversion of affirmatives is a valid inference, while the obversion of negatives is invalid. It should be highlighted that the main ground for this judgement is the double claim, made by Aristotle, that A and C (*i*) cannot both be true, but (*ii*) can be both false. This logical relation between A and C is similar to the one we find in the opposition between possession and privation (and also between contraries).

In order to see that the noted logical similarity between negative terms and privatives, i.e. the fact that they both satisfy principles (*i*) and (*ii*), does not entail that they are synonymous or even co-extensive, let us go back to one of Ackrill's suggestions about "not-just". He said that Aristotle might take "not-just" as equivalent to "unjust or in the middle condition". I don't think this is right, because I believe Aristotle would agree that stones are not-just. But suppose we had a term with the meaning Ackrill was envisaging and let us use "*disjust*" as being that term. Obviously, "unjust" and "disjust" would not mean the same and they would have different extensions ("disjust" being true and "unjust" false of things in the middle condition). However, their predication of a subject would be "similarly related" to the predication of "just" because some things – stones, for example – would be neither just nor unjust and they would also not be disjust.

To make the argument even stronger, suppose now we had a term with the meaning of "unjust, or in the middle condition between just and unjust, or a stone". Let us use "*distonust*" for it. "Just" and "distonust" can never belong to the same thing, but there are things they are both false of – for example, lakes. The opposition between "is just" and "is distonust" also satisfies principles (*i*) and (*ii*) (i.e. "distonust" is

also "similarly related" to "just"). But "distonust" is obviously neither synonymous nor co-extensive with "unjust". Most importantly, "distonust" does not satisfy Restricted Complements, because it is true of things (stones) that lie outside the range of "just". This imaginary example shows conclusively that Aristotle's analogy of negative terms with privatives is not sufficient evidence that he took negative terms to be ruled by Restricted Complements.

To find positive evidence that Aristotle does not think that negative terms are ruled by Restricted Complements, we should look at the way he justifies his examples. In 51b36–52a14, he starts with "good" and "not-good" and then switches to "white" and "not-white". They are obviously mutually exclusive, as Aristotle points out: "it is impossible to be white and not-white at the same time, or to be a not-white log and to be a white log" (52a2–3). So principle (*i*) is satisfied. Regarding principle (*ii*), Aristotle says,

> But C will not always belong to B, for what is not a log at all will not be a not-white log either.
>
> (52a4–5)

And a few lines below, he says,

> But A does not belong to every D, for of what is not a log at all it is not true to say A (that it is a white log), so that D is true and A (that it is a white log) is not true.
>
> (52a9–12)

The interpretation of these lines is not straightforward. If taken literally, they present an extremely poor and unconvincing argument. It is obvious that, if something is not a log, it will not be a white log either, and it will also not be a log that is not-white. But that only proves that "is a white log" and "is a not-white log" can be simultaneously false (and their negations true) of the same subject, which is hardly any news (just take a white cat as subject) and is clearly not what Aristotle needs. It is very unlikely that Aristotle has such a poor argument in mind. The passage should be read in a more charitable way. What could he mean? Why does he bring in the example of the log? What role does the assumption of something *not being a log* is supposed to play?

I will defer the interpretation of this passage to section four. For now I will just point out how it speaks against Restricted Complements. An advocate of that view will naturally be led to consider that the assumption of something not being a log might play the role of introducing an object outside the range of application of the term under discussion. Such a suggestion, however, cannot succeed for two main reasons. First, if that were what Aristotle means, why does he not give a positive example of something that could not be white? If he believed that a number, a soul or a voice is neither white nor not-white, it would be natural for him to give one of these as an example.[17] I think he does not do it because he believes that numbers, souls and voices actually *are* not-white. Secondly, the range of application of

"white" is constituted by *bodies* and not by logs (*Cat.* 12a11: "black and white naturally occur in bodies"). If Aristotle wanted to refer in general terms to something outside the range of "white", he would naturally use "body" instead of "log" and appeal to something of a non-bodily nature. I think he does not do it because his purpose is to introduce not something outside the range of application of "white" but rather something perishable that can cease to exist (when reduced to ashes). Going back to Striker's classification, I shall argue that the type of falsity Aristotle has here in mind is the third, not the second.

Summing up, I conclude this section by stressing that Restricted Complements, the view of negative terms and obversion that most commentators assign to Aristotle and that naturally aligns with the set-theoretic semantics traditionally given for his assertoric logic, is not supported by the textual evidence, in particular by the analogy with privative terms made in *Int.* 10 and *APr.* I 46. Moreover, the way Aristotle justifies the failure of obversion of negations in *APr.* I 46, with the example of "what is not a log at all" (52a10: τοῦ ὅλως μὴ ὄντος ξύλου), speaks against that view. Since evidence against Restricted Complements is also evidence against the traditional set-theoretic semantics, we should look for some alternative semantics.

3.   Term Negation in Mereological Semantics

In recent years, several authors have tried to use mereology, the formal theory of parts and wholes, as a basis to give a semantics for Aristotle's logic (both assertoric and modal) that, desirably, would yield better results than the traditional set-theoretic semantics. The proposal can be metaphysically motivated by the idea that Aristotle understood predication as a part-whole relation, or a relation of mereological inclusion. The paradigmatic case of inclusion would be the relation of a species to a genus. That *man* is a species of the genus *animal* just means that *man* is a part of *animal*, exactly the relation that is expressed by the *a*-proposition "Animal belongs to every man". Proponents of the traditional set-theoretic semantics think that this relation of inclusion between species and genus is reducible to a more fundamental relation of membership between individuals and their species and genus. They would say that, in general, a species A is included in a genus B if and only if every individual that is a member of A is also a member of B. The mereologists are opposed to this reduction. Instead, they think that individuals are parts of a species in exactly the same manner as species are parts of a genus. This relation of inclusion is fundamental and primitive. It cannot be defined. However, one can inquire into its properties. Undoubtedly, Aristotle believes it to be a transitive relation.[18] But what other properties does it have?

Marko Malink (2013) argues that there is only one other property that Aristotle assumes the relation of inclusion to have, which is reflexivity. I will follow his approach, because it is at present the most developed one in the literature. That inclusion is reflexive means that everything is a part of itself. As a consequence, statements like "Man belongs to every man" would be always true, according to Aristotle. The truth conditions of the other propositional forms can be defined straightforwardly on the basis of the parthood (or inclusion) relation: "B belongs to

some A" is true if and only if some parts of A are also parts of B (or if the As and the Bs overlap), "B belongs to no A" is true if and only if no part of A is a part of B (or if the As and the Bs are disjoint), and "B does not belong to some A" is true if and only if some part of A is not a part of B (or, equivalently,[19] if A is not a part of B). Given these conditions, two other notable consequences of the principle that everything is a part of itself are that "A belongs to some A" is also always true and that "B belongs to every A" entails that "A belongs to some B". The problem of existential import would thus seem to be very simply solved.

According to classical systems of mereology, besides being reflexive and transitive, there are other conditions that the relation of inclusion needs to satisfy.[20] Notoriously, mereological inclusion is usually thought to be antisymmetric and to satisfy some principles of supplementation and composition. Antisymmetry is the principle that two things can only be part of one another if they are the same. Supplementation is a very important notion in mereology and it is vital in a discussion of negative terms and obversion. First, one must distinguish between a part and a proper part. A proper part of something is a part of it that is distinct from it. And supplementation has to do with what remains of something when a proper part is removed from it. Must it leave behind at least one other proper part? Supplementation principles admit a great variety of forms, but the simplest of all says what happens when one thing A is not a part of another thing B. The principle tells us that there is always a (unique) *relative complement* of B in A, that is, something composed of all and only the parts of A that are disjoint from B. For example, if it is true that some logs are not white, the principle of supplementation guarantees that there is something composed of all and only the logs that are not white, what we might call "the not-white logs". Finally, a principle of composition should tell us under what conditions given things compose other things of which they are parts. For example, if there are logs and there are white things, is there also something that we could call the *sum* (the mereological analogue of union) of all the logs and all the white things? And if there are white logs, is there also what we could call the *product* (the mereological analogue of non-empty intersection) of the logs and the white things? The simplest principle (known as mereological universalism) gives an affirmative answer to every composition question of this sort.

Malink argues that the system of mereology assumed by Aristotle is very weak and does not include any other principle besides those of reflexivity and transitivity. He advances several reasons for that claim and, obviously, here it is not the place to discuss them in any detail. I will mainly focus on the issue of supplementation, because it is directly relevant to the subject of this essay.

The connection of supplementation with obversion is indeed very close. Obversion is a form of inference that leads one from propositions asserting a certain relation between things referred to by two categorical terms "A" and "B" to propositions asserting another relation between the thing referred to by "A" and the thing referred to by "not-B", the negation of "B". What is this thing referred to by the negation of "B"? In a mereological framework, the natural answer would be that "not-B" refers to the complement of B, i.e. to the thing composed of all and only the things that are entirely disjoint from B. The role of the principle of

supplementation is precisely to assert the existence of such complements. What is Aristotle's position regarding the existence of complements? Malink thinks that Aristotle "is committed to denying the universal existence of complements" (2013: 99). I find his arguments for that claim unconvincing.

The issue of the existence of complements can be discussed either at the metaphysical level – asking whether everything has a complement – or at the linguistic level – asking if there is a negative term opposed to every positive term of the language. Malink tends to see the question mainly as linguistic. In the *De Interpretatione*, Aristotle introduces indefinite names such as "not-man". However, he does not use them in *Prior Analytics* I 1–22. Only in *APr.* I 46 does he consider the possibility of extending the syllogistic to cover the use of such terms, but he obviously did not complete the project. So the question we have to raise is hypothetical: if Aristotle were to go on with that project, would he have accepted that every positive term can be meaningfully negated? Malink follows Flannery (1987) in considering that Aristotle is "reluctant" to use negative terms, but it is hard to see where they can find evidence of such reluctance. No doubt it cannot be in the official exposition of the syllogistic (in I 1–22) because there he does not use them at all. On the other hand, where he discusses them, in *Int.* 10 and *APr.* I 46, there is no sign of reluctance.[21] On the contrary, the typical reaction of a modern reader of those chapters is to find him very liberal in the use of negative terms, in subject and in predicate position alike, exploring the logic of forms of expression that look "awkward" (Striker), artificial, or "invented" (Ross), and not to be found in ordinary talk. The rules that he lays down for their use, though illustrated with particular examples, are obviously intended as completely general, there being no sign that he takes the negation of terms to be a construction whose application is to be limited to some cases only. Moreover, if there is no topical restriction for the use of standard copula negation, why should there be such a restriction for the use of term negation? In most cases where it is true to say "*x* is not white" it is also true to say "*x* is not-white", but in some cases, Aristotle says, the first is true while the second is not. However, those cases have nothing to do with possible failures of meaningfulness because he thinks the predication of the negative term is false in them. Rather, as I will argue, those cases have to do with the subject being an empty term. Furthermore, if Aristotle accepts empty terms in the syllogistic, the possibility of some negative terms (like "not-natural", "not-finite" or even "not-existent") being empty, or true of nothing, is also not a reason to doubt their meaningfulness.

Malink has more theory-laden reasons to think that Aristotle must deny the universal existence of complements. One reason that I cannot discuss here is that it seems to be incompatible with an extremely odd form of logical relation between two terms (so-called asymmetric conversion) that, based on *APr.* II 22, he thinks Aristotle accepts as consistent.[22] Also, Malink believes that if the principle of supplementation (asserting the existence of complements) were to be added to the axioms of the mereological semantics he gives for the syllogistic, the system would turn out to be extensional, while Aristotle's semantic views are non-extensional (2013: 84–5). That is a big issue, that I also cannot discuss, but it is worth noting that supplementation forces extensionality only if antisymmetry is also assumed,

and if one has qualms about extensionality, it is antisymmetry that one should start by being wary of.

On the other hand, Malink acknowledges that there is evidence against his claim about complements in Aristotle's proofs by ἔκθεσις, in particular in his ecthetic proof of the validity of *Bocardo*. *Bocardo* is the following form of inference: *P does not belong to some S; R belongs to every S; therefore, P does not belong to some R*. Seen from a mereological perspective, its validity can be said to rely simply on the transitivity of the parthood relation. Indeed, assuming transitivity, if S is a part of R but not of P, R must also not be a part of P. Aristotle offers two proofs of the validity of *Bocardo*. The first one is a proof by *reductio*, using *Barbara*. It can be seen just as a way of showing that transitivity has such a consequence. After giving it, Aristotle adds that *Bocardo* can also be proved without *reductio* "if one of the Ss is taken to which P does not belong" (*APr*. I 6, 28b20–1). Łukasiewicz (1957: 64–5) has suggested that with this brief direction Aristotle is probably alluding to the following reasoning:

1	P does not belong to some S	major premise
2	R belongs to every S	minor premise
3	There is an X such that S belongs to every X (i.e. X is "one of the Ss") and P belongs to no X (i.e. "P does not belong to it")	1, principle of ecthesis
4	S belongs to every N	3, existential instantiation
5	P belongs to no N	3, existential instantiation
6	R belongs to every N	2,4, *Barbara*
7	P does not belong to some R	5,6, *Felapton*

Line 3 is the crucial step in this proof and it relies on the principle of *o*-ecthesis. Given the mereological truth conditions previously assumed for the categorical propositions, the validity of that principle entails that the mereological principle of supplementation holds: if S is not a part of P, then there is a part of S that is disjoint from P (it is the relative complement of P in S).

Malink acknowledges this but argues that there is an alternative reconstruction of the ecthetic proof of *Bocardo*, which relies on a weaker principle, which does not entail supplementation or the existence of relative complements. The weaker principle says instead that, if P does not belong to some S, then there is an X such that S belongs to every X and *P does not belong to some X*. The validity of such a principle does not depend on supplementation and it does not require that P has a complement (or a relative complement in S). For the term "set out", the N, cannot be a part of P, but it can overlap with P.

The alternative reconstruction of the ecthetic proof offered by Malink is extremely implausible. The weaker principle does not deserve to be called a principle of *ecthesis* at all, because according to it the item invoked, "one of the Ss", is not a new item, something below S or an instance of S, but *it is just S itself*. In the mereological semantics, the premise "P does not belong to some S" is true just in case S is not a part of P. By reflexivity, S is a part of S. Therefore, there is a part of

S (*namely, S itself*)[23] that is not a part of P. In fact, saying that S is not a part of P and saying that some part of S is not a part of P amount exactly to the same thing (as I have pointed out in note 19). So, thus understood, the ecthetic step would be redundant, a simple restatement of the premise, only with some re-lettering (writing "N" instead of "S"). No wonder, then, that the alternative proof is vulnerable to the objection that it makes such a step "superfluous" (cf. pp. 93–4 and 97). With it we have not moved forward in any way, we are just where we started, with the *o*-proposition as premise (since the added *a*-proposition is totally trivial). It is as if we had reason this way:

1   P does not belong to some S.
2   There is an X such that P does not belong to some X.
3   Call it N: P does not belong to some N.

Of course, whatever follows from line 3 would have followed directly from line 1 (except for the uninteresting consequences of the re-lettering).

By contrast, with the principle of *o*-ecthesis, at the crucial step we are singling out a part of S that is *disjoint from P*. It may turn out that one such part is S itself (if S happens to be disjoint from P), but we cannot rely on that because it is also possible that S and P overlap. In either case, one is asserting, there is a part of S disjoint from P, namely, the relative complement of P in S. This assertion is not redundant, it introduces a state of affairs distinct from the one stated in the premise (viz. that S is not a part of P). But one thing follows from the other only if the principle of supplementation is assumed. If Aristotle agrees with the consequence, as it seems, he must be assuming that the principle holds.[24]

Aristotle's proofs by ecthesis are not the only evidence of his acceptance of supplementation and the existence of complements. His views on negative terms and on obversion, expressed in *Int*. 10 and *APr*. I 46, are also highly relevant in this regard. I will argue, in the rest of this section, that they not only pose a problem to Malink's claim that "some terms may have . . . complements, but not all" (p. 99) but also threaten the viability of the mereological approach.

Let us start by stressing the fact, already noticed, that when Aristotle in *Int*. 10 gives rules for the negation of terms, he states them with unrestricted generality. For example, before drawing the first square, he writes:

> when "is" is predicated additionally as a third thing, there are two ways of expressing opposition. . . . Because of this there will here be four cases . . . I mean that "is" will be added either to "just" or to "not-just", and so, too, will the negation.
>
> (*Int*. 10, 19b19–26)

The "two ways of expressing opposition" that Aristotle here refers to are *by negating the copula* and *by negating the predicate*. He takes as starting point a simple proposition of the form "S is P", for which he gives the example "Man

is just". To that proposition one can "express opposition" by saying "Man is not just" and one can also do it by saying "Man is not-just". And the same happens with each of the latter. For example, to "Man is not-just" one can "express opposition" either by saying "Man is not not-just" or by saying "Man is just". The result are the four forms he places on the corners of the first square drawn in *Int.* 10. It seems obvious that he means that there are *always* these two ways of expressing opposition. He is not contemplating the possibility of there being some cases in which, for lack of a negative term (or complement), opposition could only be expressed in one way, by negating the copula. A similar remark can be made about the second square, in which universal quantification is introduced, taking as starting point "Every man is just": one can *always* express opposition either by negating the quantified copula or by negating the predicate. In these passages Aristotle shows no reluctance to use negative terms. On the contrary, he seems to assume that every term that can be used as a predicate in a proposition can be (meaningfully) negated.

A bit further in *Int.* 10, Aristotle writes,

> Since the contrary negation of "every animal is just" is that which signifies that no animal is just, obviously these will never be true together or of the same thing, but their opposites sometimes will (e.g. "not every animal is just" and "some animal is just"). "No man is just" follows from "every man is not-just", while the opposite of this, "not every man is not-just", follows from "some man is just" (for there must be some).
>
> <div align="right">(20a16–23)</div>

In the first part of this passage, Aristotle reviews some of the main logical relations present in the square of opposition for categorical propositions. He points out that *a*- and *e*-propositions are contraries (they cannot be true together), but that their contradictories, i.e. the corresponding *o*- and *i*-propositions, are not contraries (they can be true together). In the second part, Aristotle expresses his acceptance of the obversion of affirmative propositions (universal and particular).[25] As we saw in the previous section, this acceptance is also stated in *APr.* I 46.

Now, if one assumes that those propositions have the mereological truth conditions previously given and that the negation of terms works as a mereological complement operator, the two stated entailments will have to rely on the following mereological principles: (*i*) if x is a part of y, then x is disjoint from the complement of y, and (*ii*) if x overlaps with y, then x is not a part of the complement of y. Aristotle can only accept these principles in full generality if he assumes that *everything has a complement*. Malink claims that he could not have assumed this, that he is committed to denying it. If that were the case, Aristotle could only assume the following restricted versions of (*i*) and (*ii*): (*i**) if x is a part of y *and y has a complement*, then x is disjoint from the complement of y, and (*ii**) if x overlaps with y *and y has a complement*, then x is not a part of the complement of y. These restricted principles would only support restricted versions of the two stated entailments, conditional on the predicate

being possibly negated. However, as in the previous passage, it seems obvious that Aristotle means that the stated entailments *always* hold. He is not contemplating the possibility of there being some cases in which they fail for lack of a negative term.

Is this conclusive evidence that Aristotle assumes the universal existence of complements? The conclusion is a tempting one, but it raises a serious worry: if everything has a complement, then, assuming again the mereological truth conditions for the categorical propositions given before, the obversion of *negative propositions* comes out valid as well. Indeed, with supplementation in place, the following two principles also hold: (*iii*) if x and y are disjoint, then x is a part of the complement of y, and (*iv*) if x is not a part of y, then x overlaps with the complement of y. Now, (*iii*) and (*iv*) have the consequence of making the obversion of *e*- and *o*-propositions valid, respectively, but we have seen that Aristotle implies in *APr*. I 46 that these two forms of obversion are not valid.

Restricting the existence of complements does not solve the problem. Aristotle thinks that the obversion of negative propositions is invalid in exactly the same cases that the obversion of affirmative propositions is valid, that is, in cases that involve the very same terms. If the existence of complements is required to make the latter valid, it cannot be denied to avoid making the former also valid. The different treatment of the two forms of obversion must have, in Aristotle's view, a source other than the existence or non-existence of complements. In particular, the non-existence of complements cannot be what explains the invalidity. And if that is not the culprit, the suspicion falls on the mereological truth conditions themselves. The mereological semantics does not seem to provide an easy way of accounting for Aristotle's views on negative terms and obversion. We should look for some other approach.

4. Term Negation in a Modified Set-Theoretic Semantics

Several interpreters think that Aristotle holds the view that, of what does not exist, every affirmation is false and every negation is true.[26] He states it for the case of singular statements in *Cat*. 10 (13b29–33), and there are good indications that he would extend it also to general statements. One indication is what he says about negated verbs in *Int*. 3: expressions like "does not recover" are *indefinite verbs* because "they hold indifferently of anything whether existent or non-existent" (16b15). This seems to imply that for him a general statement like "Goat-stags do not recover" would count as true. The extension to statements in which the verb is a copula, or a quantified copula, is straightforward.[27]

Neither of the two semantic frameworks we have discussed in the previous sections accommodates that view of the difference between affirmation and negation in connection with existence. In this section I will explore a third option that gives central stage to the idea that an existential requirement is present in affirmations but not in negations. The essential move is to go back to the set-theoretic semantics

described in section two and change the truth conditions of the *a*- and *o*-propositions to the following:[28]

(T1*) an *a*-proposition, of the form "*P* belongs to every *S*" is true if and only if the extension of "*S*" *is not empty* and it is included in the extension of "*P*";

(T4*) an *o*-proposition, of the form "*P* does not belong to some *S*" is true if and only if either the extension of "*S*" *is empty* or it is not included in the extension of "*P*".

This semantics, unlike the traditional one, can perfectly account for both Aristotle's acceptance of empty terms *and* the validity of *a*-conversion, that is, of the inference from "P belongs to every S" to "S belongs to some P. So the problem of existential import is readily solved.

Now what does "not-white" mean? What is it true of? The natural answer, within this semantics, is that the extension of "not-white" is just the complement of the extension of "white": the set of all and only those things in the domain that are not in the extension of "white". Such an answer implies that it will be true to say that numbers are not-white and stones are not-just. Clearly, however, goat-stags and chimeras will not be in the extension of "not-white" because there will be no goat-stags or chimeras in the domain.

This way of explaining the meaning of negative terms relies on nothing similar to Restricted Complements. That is a great advantage because it would be extremely hard to determine a range of application for every term, as one would need. Think of a case like "man". If the semantic value of "not-man" had to be defined relative to a range of application, what could that range be? Would "not-man" refer to the mammals other than men? Why not the animals other than men, or even the living beings other than men? Restricted Complements is a feature of contraries and privative terms, but it does not extend to negative terms. However, as we saw, the point of the logical analogy made by Aristotle between negatives and privatives remains fully respected.

Finally, Aristotle's judgements about the validity and invalidity of the different forms of obversion are fully vindicated by this modified set-theoretic semantics. The validity of the obversion of affirmations relies on the fact that the extension of a term and its complement are mutually exclusive – nothing can be a member of both. The explanation for the invalidity of the obversion of negations is just a bit trickier. Although the extension of a term and its complement are also jointly exhaustive – everything is a member of one or the other – because negations with an empty subject are true but affirmations are not, obversion of negations fails in exactly those cases.

These explanations of Aristotle's judgements about obversion seem to agree quite well with the texts in *Int*. 10 and *APr*. I 46, especially with the latter. The main theme of *APr*. I 46 is the question whether "not to be this" and "to be not-this" "signify the same or different things" (51b6). Aristotle's answer, stated in 52a24–6, is that they signify different things, because the first is a negation whereas the second is an affirmation. It is in the context of establishing this point that the

discussion of obversion occurs. It seems very natural to see that different logical properties assigned to affirmation and negation are what underwrites Aristotle's claims regarding obversion.

In more detail, the interpretation based on the modified set-theoretic semantics provides a reasonable explanation for Aristotle's puzzling use of the example of the "log" in *APr.* I 46, 51b25–31 and 51b41–52a14. In those passages, Aristotle wants to show that statements of the forms "S is not P" and "S is not-P" are not equivalent and have different logical behaviours. It would be a gross mistake to try to show this with an example where "P" is replaced by a complex predicate, "white log", and "not-P" is replaced by that predicate with only one component negated, "not-white log". However, if Aristotle believes that affirmations with empty subjects are always false, there is a reasonable way of understanding what he says. One can show that "S is not white" and "S is not-white" are not equivalent by pointing out that the latter entails something that the former does not – namely, that *there are S's* or that *something is an S*. Because, if that is so, then, if nothing is an S, nothing is a not-white S either, so "S is not-white" would be false, but the negation "S is not white" would remain true. My suggestion, then, is that in those passages Aristotle is presenting this type of argument and using "log" as an example for the empty subject "S". When he says that "being not-white" does not follow from "not being white", "for what is not a log at all will not be a not-white log either" (52a5), he means to refer to a possible situation in which, talking about a log that has ceased to exist (perhaps because it has burned), it is still true to say "the log is not white", but it is false to say "the log is not-white". Exactly as, if Socrates is dead, it is true to say "Socrates is not sick", but both "Socrates is sick" and "Socrates is not-sick" are false.

This interpretation is confirmed by 51b25–7, where Aristotle writes, "Nor are 'to be not-equal' and 'not to be equal' the same. For the one has a certain underlying subject, what is not-equal, and this is the unequal; but the other has none". The natural way of reading this sentence is as meaning that, in order to be true, the affirmative "S is not-equal" must have something as subject (ὑπόκειταί τι), while the negative "S is not equal" may not have it. This strongly suggests that, in the examples with "log" and "white", the log is the underlying subject and the assumption of something *not being a log at all* works as an assumption of there being no subject, a case in which the affirmation is false, while the negation remains true.

One textual obstacle remains: why does Aristotle say "and this is the unequal"? Some interpreters think that he is here equating the not-equal with the unequal,[29] showing that he understands them as synonymous. I have already argued against the identification of negative terms with privatives and so I cannot agree with that reading. Expressing a privation, "unequal" has a range of application and there will be things outside that range that are neither equal nor unequal. But "not-equal" does not have a range and is true of every real thing that is not equal. I suggest that, by introducing "the unequal", Aristotle is just exemplifying the need of a subject. He is saying that the truth of "S is not-equal" requires the existence of something falling under "S", as for example something unequal.

Gisela Striker agrees largely with this reading of the text in *APr*. I 46. She considers that, in Aristotle's examples, "'log' in effect plays the role of the subject term", and she says that he is committed to the view that "the truth of ordinary negative statements, whether universal, particular, or singular, does not presuppose the existence of things falling under their subject term" (2009: 242). Oddly, though, she combines this interpretation with Restricted Complements and thinks that "S is not P" and "S is not-P" differ in truth-value *either* when the subject "S" is empty *or* when it refers to something outside the range of "P" ("when S is not the sort of thing that could be P"). There is no good reason to maintain this combination, and there are some reasons against it. First, the resulting explanation of the invalidity of the obversion of negations would be *strongly disjunctive*.[30] But in 51b25–31 it is clearly the possible lack of an "underlying subject" in true negations that is being pointed out as the reason for the different behaviour. Second, if something is not a log, it does not have to be something outside the range of "white" (it could be a white cat, for example), and so Striker cannot be right when she says that Aristotle uses that example to illustrate both cases.

Turning now to objections, some interpreters think that Aristotle holds that affirmations in which the subject term is identical to the predicate term are always true. For example, we have seen that Malink claims that *a*-predication expresses a *reflexive* relation of mereological inclusion. If that were the case, every self-predication (i.e. every statement of the form "*A* belongs to every *A*") would be true and every self-denial would be false, even in cases where the term "*A*" is empty. To illustrate, I am claiming that Aristotle takes affirmations with "goat-stag" as subject (like "Every goat-stag is a four-footed animal") as always false, but the objector counters with evidence purporting to show that Aristotle is committed to take "Every goat-stag is a goat-stag" as true. We need to examine the evidence.

The only passage where Aristotle seems to claim that a term is predicated of itself is in *APr*. II 22, 68a16–21, in the middle of the discussion of what Malink calls "asymmetric conversion". Apart from the dubious status of that passage, one can see that, if read carefully, it only implies that a term is predicated of itself under conditions that guarantee that it is not empty. Indeed, Aristotle's remark that "B is predicated of itself" is made under the following assumptions: "When A belongs to the whole of B and of C and is predicated of nothing else, and B belongs to all C". These assumptions include affirmations with B and C as subject terms. Therefore, if the truth of an affirmation entails that its subject term is not empty, as we are supposing, the existential component of the truth conditions of "Every B is B" is already assumed to be satisfied. So the passage does not show that Aristotle thinks that universal predications in which the subject term is identical to the predicate term are always true.

In *APr*. II 15, Aristotle examines under what conditions can there be a syllogism from opposite (contrary or contradictory) premises. Two premises in a syllogism are opposite only if one affirms (universally or particularly) what the other denies (universally or particularly). This can only happen in the second or third figures, if the minor and the major terms are identical so that either the middle term is both affirmed and denied of the same or the same term is both affirmed and denied of the

middle.[31] A syllogism from such premises will always have a negative conclusion, either of the form "B belongs to no B" or of the form "B does not belong to some B". Aristotle states that, besides being negative, the conclusion will always be false (64b9–10: "contrary to the facts") and that could be seen as evidence that he thinks that propositions of those forms are always false, even if they include an empty term. Stephen Read has responded to this objection along the same lines as in the previous case of *APr*. II 22, pointing out that the subject of the negative conclusion is assumed to be non-empty in the affirmative premise (2015: 542). I think he is essentially right, but this case can seem to be more troublesome, for two reasons: first, because in the third figure the subject of the conclusion occurs as predicate in both premises and, second, because the affirmative premise may itself be false. It may be thought that in those cases the term is not necessarily non-empty.

The first worry is easy to dispel. According to the modified semantics given, true affirmations must have not only non-empty subjects but also non-empty predicate terms. That is because a non-empty set obviously cannot be included in the empty set, nor can it have members in common with the empty set. So both terms are assumed to be non-empty in the affirmative premise. The second worry is trickier. Aristotle is in that chapter discussing syllogisms with inconsistent premises and, while he is no doubt assuming some paraconsistent consequence relation (for which the rule *ex contradictione quodlibet* does not hold), it is not clear what other properties he is assuming that relation to have. For that reason, it is hard to tell what he would say about an inference like "*Every goat-stag is an animal; no goat-stag is an animal; therefore, no goat-stag is a goat-stag*". Presumably, he wants to count it as valid, but not trivially so.[32] This means that the fact of there being no possible situation in which both premises are true is not sufficient to account for its validity. One needs to consider what would be the case – what specific facts would hold – and what would not be the case in such an impossible situation. If one assumes the truth conditions of the modified semantics, the following account can be given: in a situation as described, there would be goat-stags, all of which would be animals; given that also no animal would be a goat-stag, then no goat-stag would be a goat-stag, but of course that would be false, because there would be goat-stags. In this way, the statement that every syllogism from opposite premises has a false conclusion can be reconciled with the modified semantics. The conclusion of such a syllogism would always be false in the situation described by the premises.

Another objection is that the modified semantics does not validate the principle of *o*-ecthesis. As we saw in the previous section, according to (one interpretation of) that principle, if "P does not belong to some S" is true, then there is an X such that "S belongs to every X" and "P belongs to no X" are both true. Such a principle seems to assume that the *o*-proposition working as premise cannot be true and have an empty subject, contrary to the semantics. In his discussion of this problem, Wedin claims that it only shows that *o*-propositions "are taken to have existential import insofar as they occur in ecthetic proofs" (1990: 148) and then tries to diminish the significance of that by stressing that ecthesis in the assertoric syllogistic is only "an ancillary procedure". It seems to me, though, that Wedin should have restricted his observation about *o*-propositions even more, to their occurrence in

ecthetic proofs *of Bocardo*, where noticeably the minor premise is an *a*-proposition of the form "R belongs to every S", the truth of which requires "S" to be non-empty. Again, the ecthetic inferential step is taken, in such a proof, under conditions that guarantee its safety. There is no need to claim that *o*-ecthesis is generally valid. It is enough if *o*-propositions can be a basis for that kind of inference under special conditions in which its subject term is assumed to be non-empty.

The last piece of conflicting evidence is Aristotle's *dictum de omni*, where he explains the meaning of *a*-predications by stating, "We say 'predicated of all' when none of the subject can be taken of which the other will not be said" (*APr.* I 1, 24b28–30). This could be seen as in conflict with the truth condition (T1*) because, when the subject is empty, there is nothing under it to be taken and so the condition is trivially satisfied, making all *a*-propositions with an empty subject true rather than false. Read (2015: 542) has replied to this objection by saying that the truth condition in the *dictum de omni* is only apparently negative but is in fact an affirmation (of the form "No S is not P") and so has existential import. The issue is complicated. Of course, the sentence employed in that passage is logically equivalent to an affirmative sentence and one could feel encouraged to argue on that basis that it has an affirmative content. On the other hand, it is extremely counterintuitive to say that a sentence starting with the words "None . . . can be taken" is affirmative. Underlying the difficulty is the fact that the principles that every sentence is either affirmative or negative, but not both, and that the contradictory of an affirmation is a negation and vice versa, work only for a language deprived of double negation, as is the (idealised) language of Aristotle's syllogistic. But Aristotle writes the *dictum de omni* in ordinary Greek, and one should be wary of applying the principles of existential import across the board to anything he says. The most one can say is that, if the *dictum de omni* were to be expressed in the language of the syllogistic, it would be expressed by an *a*-proposition. However, that is not very helpful because the *dictum* is supposed to tell us how to interpret those very propositions. I conclude that, whatever answer one gives to the question whether the *dictum de omni* is affirmative or negative, it cannot be used as decisive evidence for or against the modified semantics.

5.   Conclusion

To sum up, I have asked what semantic framework works best in accounting for Aristotle's views on the negation of terms and obversion. We have examined three options.

Starting with the traditional set-theoretic semantics, we saw that the natural way of explaining in that framework the invalidity of the obversion of negations is by assigning restricted complements as extensions to negative terms, making them work like privative terms. I have argued against that option, claiming that Aristotle's analogy of negative with privative terms has been misinterpreted. Restricted complements require a range of application, but it is implausible to assume that every term that can be negated has such a range. Moreover, Aristotle explicitly identifies in *APr*. I 46 a reason for the failure of the obversion of negations that

does not refer to any predication "outside the range". Rather, he refers to predications in which *there is nothing* "*underlying*" (as it happens if one says that the log is not-white when there is no log).

We then considered the suggestion that Aristotle's logic should be given a mereological semantics instead. In that framework, the negation of terms must be characterised by appeal to complements (where the complement of something is the thing composed of all and only the things that are entirely disjoint from it). The existence of complements is stated by a principle of supplementation, but supplementation principles are among the most controversial topics in mereology. It is also controversial whether Aristotle could accept some form of supplementation. He would need some such principle to account for the validity of the obversion of affirmations, and he seems to rely on something very similar to it in his proofs by ecthesis, but on the other hand, if one assumes the universal existence of complements, the obversion of negations comes out as valid as well. I have concluded that the mereological semantics is not well equipped to account for Aristotle's views on negative terms and obversion.

The third option we have explored looks more promising. I have called it "the modified set-theoretic semantics" because it results from a slight modification of the truth conditions for *a*- and *o*-propositions given in the first semantics we considered. This modification is motivated by Aristotle's own remarks, which suggest that he holds the view that affirmations with empty subjects are always false. In this framework, negative terms can be semantically characterised in terms of simple complements (a much more natural option) and the different treatment of the two forms of obversion can be seen as resulting simply from the different logical properties of affirmation and negation. I have shown that the interpretation is well supported by the texts and that the few recalcitrant passages can be explained away. I do not claim that the modified semantics is the only possible way of accounting for Aristotle's views on negative terms and obversion, but I hope to have shown that it provides a very reasonable and plausible interpretation of those views better than the two best known alternatives.[33]

Notes

1 See, among many others, Anscombe (1956: 44); Whitaker (1996: 80); Horn (2001: 2, 21).
2 See Smith (1989: xvii) and Malink (2013: 25). Horn (2001: 45–79) discusses the opposition between "symmetricalists" and "asymmetricalists" on the relation between affirmation and negation.
3 Aristotle's negative copula seems to fit the description that Ladusaw (1996: 141) gives of an "exocentric" operator: "An operator which combined a predicate and an individual to form a proposition denying the predicate of the individual would be an exocentric negative operator because its result (a proposition) is not a possible argument for it". On such an approach, affirmation and negation are best seen as "modes of judgement or predication".
4 Expressions like "not-man" and "not-just" are called by Aristotle "indefinite names" (16a32, 19b8–9). He finds this label appropriate because what they signify is "in a way one thing, but indefinite" (19b9). Whitaker (1996: 63–4) provides a good explanation of the label.
5 See *e.g.* Prior (1962: 127) and Kneale and Kneale (1962: 57).

6 Łukasiewicz (1957: 72) and Patzig (1968: 127). Less radically, Ferejohn states that "Aristotle's attitude towards negative predicates [is] one of deep ambivalence" (2009: 273).

7 See, among others, Mignucci (2000), Malink (2013), and Corkum (2015).

8 The reader interested in knowing more can start with Crivelli (2004: 152–80, 2012: 123–4).

9 A view of this sort is defended by Peter Strawson in (1952: 112).

10 See also *Int.* 20a34 ("a negation must always be true or false"), which rules out any *meaningless* negation; and 21b4.

11 The second option is taken without argument by Cavini (1985: 19).

12 Ackrill concurs that for Aristotle "not-white" means "of some colour other than white" (1963: 143). It is curious that Mignucci links term negation to ordinary language. David Ross says instead that the form "*A* is not-*B*" "is really an invention of logicians" (1949: 423). However, Ross agrees also with Restricted Complements and says that, for something to be not-equal, it must be "a quantitative thing unequal to some other quantitative thing", a requirement that is absent from the conditions for not being equal (p. 422). Whitaker (1996: 139n10) seems hesitant over the relation between "not-equal" and "unequal".

13 That Striker includes case (iii), when nothing falls under S, distinguishes her from the other interpreters I have quoted. I agree with Striker that Aristotle thinks that "S is not P" and "S is not-P" differ in truth-value in case (iii), as it will become clear. My disagreement is over case (ii) and the claim that Aristotle uses term negation to mark the distinction between (i) and (ii)-or-(iii).

14 In *Cat.* 12a20–5, Aristotle says that, if there are no names for the intermediates between two contraries, "it is by the negation of each of the extremes that the intermediate is marked off, as with the neither good nor bad and neither just nor unjust". This is hard to make literal sense of because, if he is willing to say that stones are neither just nor unjust, it seems that "neither just nor unjust" applies also to things outside the range, which are not intermediate, properly speaking.

15 I agree with Striker that Aristotle "is using 'predication' here as the opposite of 'privation' instead of the usual 'state' or 'possession' (ἕξις)" (2009: 244).

16 Which should not be surprising, given what Aristotle said at the end of *Categories* 10, viz. that it is distinctive of the opposition between affirmation and negation that "it is necessary always for one to be true and the other one false" (13b2–3).

17 In a similar case (in *Int.* 12, 21b4), wanting to show that "is a white man" and "is a not-white man" can be both false (and so are not opposed as affirmation and negation), Aristotle gives a *log* as example of a possible subject. Of course, a log is something coloured.

18 Transitivity of "belonging to every" is what underwrites the validity of the perfect mood *Barbara*. See *Cat.* 3, 1b10–5 and *APr.* I 4, 25b32–26a2.

19 Given the reflexivity and transitivity of parthood, "A is a part of B" and "Every part of A is a part of B" are logically equivalent, as are "A is not a part of B" and "Some part of A is not a part of B".

20 See Cotnoir and Varzi (2021).

21 The reluctance to call them "names" is not a reluctance to use them or to acknowledge their meaningfulness.

22 Barnes (2007: 494) describes the supposed relation ("A holds of every B and B holds of everything of which A holds except of A") and considers that "it is worse than odd – it is incoherent".

23 Of course, there can be, in some cases, also a *proper* part of S that is not a part of P. But that is not guaranteed; hence, it cannot be what the principle relies on.

24 Corkum (2015, 2018) agrees with Malink that Aristotle does not assume strong supplementation but argues that he is committed to a *weak* form of supplementation, entailing that nothing can have only one proper part. Weak supplementation, however, does not validate the principle of *o*-ecthesis, nor does it guarantee the existence of complements.

25 I am adopting the text of Minio-Paluello and using Ackrill's translation, with a minor change. Weidemann (2015, 2020) believes that the text of lines 20a20–23 is corrupted and proposes an emendation, according to which Aristotle would be stating equivalences instead of affirmation-to-negation entailments only. In his view, the doctrines of *Int*. 10 and *APr*. I 46 differ substantially; in particular, the first understands negative terms in terms of unrestricted complements, while the second understands them in terms of restricted complements (2020: 308–9). I find the view implausible and his main argument for the emendation unconvincing. He reads the words ἀνάγκη γὰρ εἶναί τινα (20a23) as saying that necessarily some (man) is (just) (p. 303), while I think they are better understood as saying that there must be some (men), an existential requirement that (as I shall defend in the next section) is part of the truth conditions of "some man is just", but not of "not every man is not-just".

26 See, among others, Prior (1962); Wedin (1990); Bäck (2000); Striker (2009) and Corkum (2018).

27 That interpretive stance faces some objections, one of which derives from a passage in *Int*. 11, 21a24–8, where Aristotle seems to deny that "Homer is a poet" entails "Homer exists". For an attempt at reconciling the texts, see Wedin (1978). Other objections will be addressed at the end of this section.

28 The truth conditions of *i*- and *e*-propositions do not need to be changed because the requirement of their subject being non-empty is already present in the former (an affirmation) and absent in the latter (a negation).

29 See Ross (1949: 423) and Ackrill (1963: 143).

30 I say "strongly" because the two kinds of cases that Striker has in mind never overlap, since if "S" is empty, it does not refer to anything. Aristotle is not a Meinongian who believes in non-existent objects.

31 In fact, Aristotle contemplates two possibilities: either the major and minor terms are identical or they are related "as a whole to a part". This means that he considers "Every scientific knowledge is good" and "No medical knowledge is good" as being also opposite premises, that lead (by *Camestres*) to the conclusion that "No medical knowledge is scientific knowledge" (which he evidently takes to entail that "Some scientific knowledge is not scientific knowledge"). To simplify matters, I am focusing on the first type of case only.

32 Assuming Aristotle's usual notion of a counterexample (an instance of an inference form with true premises and false conclusion), no inference from opposite premises can have a counterexample. But that does not mean that all such inferences are valid.

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6   Proof and Demonstration

The Meanings of δεικνύναι in the *Posterior Analytics*

Pierre-Marie Morel

In the *Posterior Analytics*, δεικνύναι is often synonymous with ἀποδεικνύναι. This is the case when it means "demonstrate" in the strict sense of a syllogistic deduction. However, in other occurrences, it seems to designate something different, like a "proof" in general or a particular kind of proof. This difference is indirectly attested, e.g. in [1] *APo*. II 7, 92b37–8: "definitions neither demonstrate nor prove anything" (οὔτε ὁ ὁρισμὸς οὐδὲν οὔτε ἀποδείκνυσιν οὔτε δείκνυσιν).[1] Aristotle does not explain the difference in this passage, but it is quite clear that *there is* a difference, since he takes "demonstrate" and "prove" as two distinct options. He probably means something like this: definitions are not ἀποδείξεις; hence, they do not demonstrate strictly speaking. Moreover, they are not even proofs ("demonstration" in a broader sense), that is, sorts of inferences. By "inference", I mean, roughly, this: some things are posited and other things are derived from them. In some other occurrences, as we shall see, δεικνύναι can hardly be translated by "prove": when it is applied to induction, and if "proof" is reserved to a sort of deductive reasoning, "show" seems more appropriate. After all, as J. Barnes reminds us, "the root meaning of δεικνύναι is 'show'" (Barnes 1993: 172).

Any translator of the *Posterior Analytics* faces these ambiguities: Should we translate "δεικνύναι" differently from case to case? Or should we keep one and the same translation, despite the aforementioned variations? In fact, the usual translations are "to prove" (adopted by Barnes 1993), "prouver" (Tricot 1979; Pellegrin 2005), "provare" (Mignucci 2007, who also uses "mostrare", i.e. "to show") and "beweisen" (Detel 2011). One could respond that the issue does not deserve too much attention, arguing that the verb is not very important in Aristotle's vocabulary in the *APo*. Indeed, he does not use δεῖξις in the *APo*. (as sometimes he does in *APr*.) so that there is a sort of imbalance between, on the one hand, the extensive semantic family of "demonstration", which includes not only the verb ἀποδεικνύναι but also the emblematic substantive ἀπόδειξις and the crucial adjective ἀποδεικτικός and, on the other hand, the small family of δεικνύναι, almost exclusively restricted to the verb itself. In the *Posterior Analytics*, this is a verb without corresponding substantive.[2] Perhaps, one could say, Aristotle's use of this verb is a weak one, without significant consequences.

In my view, on the contrary, there is an important point at stake, and this is what I would like to show.[3] Following a path which has been traced by Bonitz for the corpus aristotelicum as a whole, I shall consider five kinds of occurrences of the verb δεικνύναι: (1) as synonymous with ἀποδεικνύναι; (2) a weak or instrumental meaning of the term (e.g. by reference to a previous argument); (3) as departing in extension from ἀπόδειξις, when δεικνύναι is taken as a generic term, indicating any kind of proof, or as designating a particular sort of demonstration; (4) as naming a non-demonstrative operation; (5) indirect or negative meanings, when Aristotle seems to demarcate δεικνύναι from ἀποδεικνύναι in the strict sense.

1. The Synonymy with ἀποδεικνύναι

Very often, δεικνύναι is synonymous with ἀποδεικνύναι. This is a matter of fact, and I will content myself with some examples.

1.1

In many occurrences, the use of δεικνύναι is a mere substitution, which is attested by a direct connection to the objects and structure of demonstrative συλλογισμός. Aristotle, in these cases, could use ἀποδεικνύναι indifferently.

In I 3, 73a17, against those who say that demonstrations may proceed in a circle, Aristotle says that [2] "items which are not counterpredicated cannot ever be proved (δεῖξαι) in a circle" (τὰ δὲ μὴ ἀντικατηγορούμενα οὐδαμῶς ἔστι δεῖξαι κύκλῳ). I will come back to this passage later on. For the moment, I just notice, by comparison with the following passage, that there is no distinction, in this context, between ἀποδεικνύναι and δεικνύναι: [3] "That it is impossible to demonstrate *simpliciter* in a circle is plain, if demonstrations must proceed from what is prior and more familiar" (κύκλῳ τε ὅτι ἀδύνατον ἀποδείκνυσθαι ἁπλῶς, δῆλον, εἴπερ ἐκ προτέρων δεῖ τὴν ἀπόδειξιν εἶναι καὶ γνωριμωτέρων, 72b25–6).

The same can be said about [4] II 12, 95b36: "Again, if there will be a house, in the same way there will be stones earlier. As before, the proof is (δείκνυται) through the middle term: there will be a foundation earlier" (πάλιν εἰ ἔσται οἰκία, ὡσαύτως πρότερον ἔσονται λίθοι. δείκνυται δὲ διὰ τοῦ μέσου ὁμοίως ἔσται γὰρ θεμέλιος πρότερον). Here, the construction with "διά + genitive" and τὸ μέσον as complement clearly attests the synonymy with ἀποδεικνύναι. Similarly, in [5] I 23, 84b31: "when you have to prove (δεῖξαι) something, you should assume what is predicated primitively of B. Let it be C; and let D be similarly predicated of C, etc."

Aristotle contrasts arguments that proceed from case to case (for example, among magnitudes, proceeding from what holds for numbers to what holds similarly for lines, solids, or times), with arguments where a property is shared by the species because it belongs to the genus. Of the latter, he says that [6] "now, however, it is proved universally: what they suppose to hold of them universally does not hold of them as lines or as numbers but as this" (νῦν δὲ καθόλου δείκνυται οὐ γὰρ ᾗ γραμμαὶ ἢ ᾗ ἀριθμοὶ ὑπῆρχεν, ἀλλ' ᾗ τοδί, ὃ καθόλου ὑποτίθενται ὑπάρχειν, I 5, 74a23–5).

Sometimes, δεικνύναι is explicitly connected to ἀπόδειξις in the same sentence, for example in I 13, 78a39:

> **[7]** It is also possible to prove the latter [i.e. the fact that the planets do not twinkle] through the former [i.e. the nearness of the planets], and then the demonstration will give the reason why.
> ἐγχωρεῖ δὲ καὶ διὰ θατέρου θάτερον δειχθῆναι, καὶ ἔσται τοῦ διότι ἡ ἀπόδειξις.[4]

1.2

In another set of occurrences, δεικνύναι is opposed to the knowledge of the principles and refers clearly to the deductive process. Accordingly, it is demarcated from mere assumption, often named by the verb λαμβάνειν. Chapter I 10 of the treatise, from this point of view, is very significant. The text runs as follows. The first sentence, the definition of principles, gives, from the outset, the key of what comes after: [8] "I call principles in each kind those items of which it is not possible to prove that they are" (Λέγω δ᾽ ἀρχὰς ἐν ἑκάστῳ γένει ταύτας ἃς ὅτι ἔστι μὴ ἐνδέχεται δεῖξαι, 76a31–2). Then Aristotle distinguishes between signification, which is just assumed or posited (λαμβάνεται), and existence, which is "assumed" in the case of the principles, but "proved" (δεικνύναι) in the case of the other things. It is obvious that the process by which the "other things" are proved is demonstration itself. It is confirmed a few lines later (76b10–5), when Aristotle sets out the three elements which constitute the demonstrative science (ἀποδεικτικὴ ἐπιστήμη): what it posits to exist, that is the genus; the common axioms, that is the primitive notions or propositions "from which demonstrations proceed" (ἐξ ὧν πρώτων ἀποδείκνυσι); and the attributes, whose meaning is assumed. Significantly, at 76b21–2, he offers a synthesis where the verb δεικνύναι gets the first role: [9] "Nonetheless *by nature* there are these three things: that about which the science conducts its proofs, what it proves, and the items from which it proves" (ἀλλ᾽ οὐδὲν ἧττον τῇ γε φύσει τρία ταῦτά ἐστι, περὶ ὅ τε δείκνυσι καὶ ἃ δείκνυσι καὶ ἐξ ὧν),[5] which are, respectively, the genus or subject, attributes or properties, and the principles. Aristotle, obviously, does not worry about using δεικνύναι to designate, directly or indirectly, the objects and fundamental processes which constitute the demonstrative science itself. It is also clear that δεικνύναι can be used to demarcate the deductive reasoning in contrast to the knowledge of the principles.[6] In all these occurrences, it is clear that the verb could be translated by "demonstrate", as well as by "prove", as long as the latter translation does not alter the deductive meaning.

2.   Δεικνύναι in Cross-References

We find also another kind of occurrences, with a mere instrumental use of δεικνύναι, to cross-reference to previous arguments. This case is perhaps less important, at least at first sight: it sounds purely conventional and serves as a mere transition. But it turns out to be an interesting case. For example, we read in I 3, 73a8,[7] "If a

single item is laid down, I have proved (δέδεικται) that it is never necessary that anything else be the case". Let us consider what follows immediately, marking the two different uses of "prove" (I 3, 73a11–7):

> [10] Now if A follows B and C, and these follow one another and A, in this case it is possible to prove[i] (δεικνύναι) all the postulates reciprocally in the first figure, as I have proved[ii] (ὡς δέδεικται) in my account of deduction. I have also proved[ii] (δέδεικται) that in the other figures either no deduction at all comes about or else none concerning the assumptions. But items which are not counterpredicated cannot ever be proved[i] (δεῖξαι) in a circle.
>
> ἐὰν μὲν οὖν τό τε Α τῷ Β καὶ τῷ Γ ἕπηται, καὶ ταῦτ' ἀλλήλοις καὶ τῷ Α, οὕτω μὲν ἐνδέχεται ἐξ ἀλλήλων δεικνύναι πάντα τὰ αἰτηθέντα ἐν τῷ πρώτῳ σχήματι, ὡς δέδεικται ἐν τοῖς περὶ συλλογισμοῦ. δέδεικται δὲ καὶ ὅτι ἐν τοῖς ἄλλοις σχήμασιν ἢ οὐ γίνεται συλλογισμὸς ἢ οὐ περὶ τῶν ληφθέντων. τὰ δὲ μὴ ἀντικατηγορούμενα οὐδαμῶς ἔστι δεῖξαι κύκλῳ . . .

In this passage, δεικνύναι names not only the demonstrative proof as such (*to prove[i]*), but also the results of previous enquiries, that is, what is now taken for granted and does not need further justification (*to prove[ii]*). These internal references (according to Ross, Barnes, Pellegrin, Mignucci) relate to some passages of the *Prior Analytics*, about the conditions of genuine circular proofs, that is, demonstrations involving convertible propositions (at 73a14, it is alluded to *APr* II 5–7), which are "rare in the demonstrative sciences" or "in the demonstrations" (ἐν ταῖς ἀποδείξεσιν), as he says at *APo*. I, 3, 73a18. More precisely, at 73a8, Aristotle probably refers to *APr*. I 25, but it is also true, as Barnes reminds us, that it alludes to the very definition of the συλλογισμός. So it is clear that, even though "*to prove[ii]*" takes second place to "*to prove[i]*", it is along the same lines: it is about a non-hypothetical truth, which does not need further justifications. One could say the same about, for instance, II 3, 90b25, where what is referred to is beyond doubt: "Again, the principles of demonstrations are definitions, and it has been proved (δέδεικται) earlier that there will not be demonstrations of principles". What has been "shown" earlier has been "proved" as well, in the sense that it can be now taken for granted.

3.   The Floating Extension of δεικνύναι

However, in other circumstances, δεικνύναι differs in extension from ἀποδεικνύναι in the strict sense.[8] Two different cases may be considered under this heading: generic extension and specification of the demonstration.

3.1

As a generic term, δεικνύναι indicates any kind of proof, including ἀπόδειξις as one of its species.

As a matter of fact, δεικνύναι can even be the genus of the very definition of ἀπόδειξις. It is the case in II 3, 90b34–7:

> [11] Again, every demonstration proves something of something, i.e. that it is or is not; but in the definition nothing is predicated of anything else – e.g. neither animal of two-footed nor this of animal, nor indeed figure of plane (for a plane is not a figure nor is a figure a plane).
> ἔτι πᾶσα ἀπόδειξις τὶ κατὰ τινὸς δείκνυσιν, οἷον ὅτι ἔστιν ἢ οὐκ ἔστιν ἐν δὲ τῷ ὁρισμῷ οὐδὲν ἕτερον ἑτέρου κατηγορεῖται, οἷον οὔτε τὸ ζῷον κατὰ τοῦ δίποδος οὔτε τοῦτο κατὰ τοῦ ζῴου, οὐδὲ δὴ κατὰ τοῦ ἐπιπέδου τὸ σχῆμα οὐ γάρ ἐστι τὸ ἐπίπεδον σχῆμα, οὐδὲ τὸ σχῆμα ἐπίπεδον.

That we have to do with a sort of abbreviated definition of demonstration as such is attested by the comparison with the essence of definition itself. Aristotle seems to distinguish, in this passage, between the τί ἐστι of the demonstration and the τί ἐστι of the definition. Now, δεικνύναι is clearly the generic term for non-definitional procedures, and the specification is given by the τὶ κατὰ τινός. Moreover, it is echoed by [12] II 4, 91a14–5: "A syllogism proves something of something through the middle term" (ὁ μὲν γὰρ συλλογισμὸς τὶ κατὰ τινος δείκνυσι διὰ τοῦ μέσου). Here the same definition, applied to the συλλογισμός in the strict sense, is completed by the mention of the middle term.

Further confirmation of this is to be found in I 24, 85b23–7, where the adjective δεικτικός gets the generic function:

> [13] Again, if demonstrations are probative deductions which give the explanation and the reason why, and if universals are more explanatory . . . then universal demonstrations are better. For it is rather they which give the explanation and the reason why.
> Ἔτι εἰ ἡ ἀπόδειξις μέν ἐστι συλλογισμὸς δεικτικὸς αἰτίας καὶ τοῦ διὰ τί, τὸ καθόλου δ' αἰτιώτερον (ᾧ γὰρ καθ' αὑτὸ ὑπάρχει τι, τοῦτο αὐτὸ αὑτῷ αἴτιον τὸ δὲ καθόλου πρῶτον αἴτιον ἄρα τὸ καθόλου) ὥστε καὶ ἡ ἀπόδειξις βελτίων μᾶλλον γὰρ τοῦ αἰτίου καὶ τοῦ διὰ τί ἐστιν.

In the first sentence, the adjective δεικτικός is just transitive: the syllogism demonstrates the conclusion by revealing the "cause" or "the reason why". It is clear that the emphasis should be put on "αἰτίας καὶ τοῦ διὰ τί" rather than on "δεικτικός". To be probative, to prove something, is the proper function of a syllogism so that the adjective δεικτικός does not seem to add something significant to the substantive. Nevertheless, there is probably more to this expression. Indeed, we know that some syllogisms, or some inferences that one may call "syllogisms", can be either non-demonstrative deductions, or weak (or incorrect) syllogisms. So the formula "συλλογισμὸς δεικτικός⁹ plus genitive", as a whole, sounds like a general designation of any kind of deduction, of which ἀπόδειξις properly speaking (i.e. the deduction which reveals the universal, because it is what is most explanatory) is a species.

There is another clue about this in the same chapter, in 85a26–8, where Aristotle says that "a universal demonstration shows that something else and not the thing itself is in fact so-and-so (e.g. of the isosceles it shows not that an isosceles but that a triangle is so-and-so), whereas a particular demonstration shows that the thing itself is in fact so-and-so". The passage is clearly dialectical: Aristotle, first, argues for "particular demonstrations" against "universal demonstrations" before defending, subsequently, the latter against the former. In this sentence, he uses the verb ἐπιδεικνύναι, translated here by "show". This is a *hapax* in the *Analytics*. In fact, the lexicon of the ἐπίδειξις does not belong to Aristotle's technical vocabulary of the theory of science.[10] In this context, it seems to be a very general term, and not a technical one, like the adjective δεικτικός. In this text too, the idea of "showing something by way of inference", expressed by a paronym of δεικνύναι, is taken at the generic level and applied to different specific cases.[11]

It is true that there is a specific difficulty in this section (Chapters 24–26 of Book I) of the *Posterior Analytics*: Aristotle deals with several kinds of "demonstrations" (ἀπόδειξις) and evaluates their respective merits, taking them in pairs: universal and particular demonstrations, positive and privative demonstrations, and demonstrations which demonstrate directly and those which lead to impossible. I shall come back to the last pair later on. For the moment, it is sufficient to notice that the word ἀπόδειξις names several forms of deductions which differ in value. Hence, it is not so easy to isolate the best demonstration, or demonstration properly speaking. In any case, concerning the first pair, it is absolutely clear, in I 24, 86a9–10, that a demonstration in the highest sense, ἀπόδειξις without qualification, is a universal demonstration: "a universal demonstration is better since it is more of a demonstration".

To sum up, I think that all this gives good support to the idea that the mere "probative" function, i.e. to show something by an inferential way, is more general than the demonstration properly speaking, particularly when the latter is taken as the best demonstration, demonstration without qualification. At any rate, the most crucial is this: having to our disposal δεικνύναι in this broad sense, as a genus, serves to define the demonstrative syllogism and to show its specific difference.

3.2

Conversely, the family of δεικνύναι, in particular the adjective δεικτικός, may also be used to specify ἀπόδειξις. This is the case in the expression ἀπόδειξις δεικτική ("probative" or "affirmative" demonstration) at I 24–6, at *APr*. II 14, and in other passages of the *APr*, where ἀπόδειξις δεικτική is opposed either to demonstration *per impossibile* or to privative demonstration. Besides, δεικτική appears only five times in the *APo*, precisely in the mentioned section.

The expression ἀπόδειξις δεικτική is somewhat strange since every demonstration is, by definition, "probative" in the sense of "able to prove". Nevertheless, when it is opposed to the "privative demonstration" *(στερητική ἀπόδειξις)*, it means the same as "positive demonstration" (κατηγορική ἀπόδειξις).[12] For the clarity of the translation, there are good reasons to choose "direct" in I 25, rather

than, e.g. "demonstration which proves" ("démonstration qui prouve" in Pierre Pellegrin's translation) or "affirmative demonstration" ("démonstration affirmative" in Tricot).

There is a supplementary difficulty due to the fact that the same adjective, in I 24–6, refers to two different cases, as Barnes points out (1993: 183): as opposed, on the one hand, to "privative demonstration", and to "demonstration *per impossibile*", on the other. In addition, a privative demonstration may be said "δεικτική", when opposed to demonstration *per impossibile*, as it is the case in I 26, 87a5. For this reason, the Mignucci-Pellegrin proposal for δεικτική in this passage, "ostensive",[13] is an interesting suggestion.[14]

I am not sure that there is much to infer from this set of occurrences, especially because the exact meaning of the term depends on the list of its opposites, which is not easy to establish. For instance, as Striker says, even though demonstrations from hypothesis involves demonstrations *per impossibile*, some demonstrations from hypothesis are direct proofs. Moreover, G. Striker (2009: 109) observes, regarding δεικτικῶς, that "Aristotle nowhere defines this expression".

All this reinforces the sense of "show" rather than the idea of deduction.[15] More precisely, this meaning has more to do with *a certain way* of deducing, than with deduction itself, as it is suggested by the adverb within the expression δεικτικῶς συλλογίζεσθαι, in *APr*. I 29, 45b14–5. This is the reason why I am inclined to think that translations like "ostensive demonstration" and "ostensive syllogism" are suitable and much better than "probative": after all, privative and *per impossibile* deductions are called by Aristotle "demonstrations" as well, so that they are also "probative" to some extent. Demonstrations *per impossibile* are convertible, and Aristotle insists that [14] "syllogisms that lead to the impossible work in the same way as the ostensive ones, for they come about through the terms that follow or are followed by each of the two terms" (*APr*. I 29, 45a23–5: Τὸν αὐτὸν δὲ τρόπον ἔχουσι καὶ οἱ εἰς τὸ ἀδύνατον ἄγοντες συλλογισμοὶ τοῖς δεικτικοῖς· καὶ γὰρ οὗτοι γίνονται διὰ τῶν ἑπομένων καὶ οἷς ἕπεται ἑκάτερον). The difference is this: [15] "in the ostensive syllogism both premises are posited in accordance with the truth, while in the syllogism that leads to the impossible one of the premises posited is false" (*APr*. I 29, 45b10–2: ἐν μὲν τῷ δεικτικῷ κατ᾽ ἀλήθειαν ἀμφότεραι τίθενται αἱ προτάσεις, ἐν δὲ τῷ εἰς τὸ ἀδύνατον ψευδῶς ἡ μία).

All the same, using δεικτική in the case of positive demonstration by contrast with privative demonstration, as in the case of non-*per-impossibile* demonstration – even if it could be a source of confusion and, Barnes says, a "unfortunate" decision – is understandable. There is, indeed, something common in both cases: the idea that the demonstration in question "shows directly" what it proves, in accordance with the core meaning of δεικτικός and δεικνύναι.

4.   Non-Deductive Attestation

So far, we have dealt with deductive meanings: δεικνύναι applied to deductions, or to sorts of συλλογισμοί. However, in some other texts of the *Posterior Analytics* it is also applied to non-deductive procedures and attestations, especially to

induction. It is the case in the famous opening section of the *Posterior Analytics*, at I 1, 71a5–9:

> [16] Similarly with arguments, both deductive and inductive: they effect their teaching through what we already know, the former assuming items which we are presumed to grasp, the latter proving something universal by way of the fact that the particular cases are plain.
>
> (Barnes 1993)

> ὁμοίως δὲ καὶ περὶ τοὺς λόγους οἵ τε διὰ συλλογισμῶν καὶ οἱ δι' ἐπαγωγῆς ἀμφότεροι γὰρ διὰ προγινωσκομένων ποιοῦνται τὴν διδασκαλίαν, οἱ μὲν λαμβάνοντες ὡς παρὰ ξυνιέντων, οἱ δὲ δεικνύντες τὸ καθόλου διὰ τοῦ δῆλον εἶναι τὸ καθ' ἕκαστον.

This text should be compared with I 31, 88a2–6, about induction itself:

> [17] for we have seen that there is no perception of universals. Nevertheless, if we observed this happening often and then hunted for the universal, we would possess a demonstration; for it is from many particulars that the universal becomes plain. Universals are valuable because they make the explanations plain.
> οὐ γὰρ ἦν τοῦ καθόλου αἴσθησις. οὐ μὴν ἀλλ' ἐκ τοῦ θεωρεῖν τοῦτο πολλάκις συμβαῖνον τὸ καθόλου ἂν θηρεύσαντες ἀπόδειξιν εἴχομεν ἐκ γὰρ τῶν καθ' ἕκαστα πλειόνων τὸ καθόλου δῆλον. τὸ δὲ καθόλου τίμιον, ὅτι δηλοῖ τὸ αἴτιον·

The second passage clearly echoes the sentence "proving something universal by way of the fact that the particular cases are plain", in the first text. Induction, which is not a demonstration (ἀπόδειξις) *from* the universal, "makes clear", or by itself "reveals", the universal. True, in the second text, it seems that there is a sort of ἀπόδειξις at the end of the inductive process, and this should remind us that, as Mignucci, for example, observes, *APo.* I 1, 71a5–9 is not about natural or naïve induction.[16] This should remind us that induction is not absolutely disconnected from the deductive reasoning. After all, in I 13, 78a34 ss., Aristotle adds that what is established by induction can, in certain cases, constitute a "syllogism of the fact" or a deduction which gives the fact. Be that as it may, Barnes' translation rightly underlines the temporal order of the successive stages of the process,[17] and this leads to consider induction as a distinct way of "showing" things.

For the same reason, Mignucci (2007), at *APo.* II 7. 92b1, translates δείκνυσιν with "show" ("*mostrare*") in the sentence "an induction does not show what a thing is, but rather that it is or is not".[18] Indeed an induction does not "prove" properly speaking, if one understands by "proof" a deductive process. In his commentary,[19] Mignucci interestingly adds that Aristotle is playing here with the meanings of δεικνύναι, which sometimes means "prove", but other times "show". According

to Mignucci, in the latter sense, what is a δεικνύναι, is not only a "deductive demonstrative argument" but also an "induction" ("*non solo una argomentazione deduttiva dimostrativa, ma anche un "induzione*"") so that the verb has the generic meaning of "justify" ("*giustificare*"). More generally, if it is true that δεικνύναι may have this generic meaning, let us also say that it fits well the particular case of induction, each time it refers to the mere fact of "showing" something.

So how should we translate οἱ δεικνύντες in I 1 and should we admit the common translation of "proving"?[20] I think the answer depends in part on what we expect of "proof". If one takes the most demanding conception of what a proof is, especially in the context of the *Posterior Analytics* this translation does not fit well: if "the universal" designates a universal concept (e.g. the universal notion of the figure or the triangle), and not a universal proposition, it is not something to prove but something to grasp or something to derive further things from. Nevertheless, you could adopt a more relaxed conception of what a "proof" is. After all, the modern term "proof" admits several levels of technicity and complexity. In a police investigation, the alibi of a suspect can be taken as a factual "proof" that he is innocent. On the contrary, the absence of any alibi, although it is not an evidence that he is guilty, may be considered as an element, among others, of the inquiry that aims at "proving", by a sort of deduction (in the broad sense), the culpability of the guilty person. So we have, on the one hand, evidence or immediate proof and, on the other hand, a chain of elements linked by a deductive process. In both cases we may talk about "proofs", although we have to distinguish between two different kinds of attestation.

However, what Aristotle wants to point out in I 1 (text [16] above) is not the scientific or epistemic value of induction, the positive outcomes one can expect from it. This is not an evaluation of the epistemological power of induction. Rather, as the first lines of the chapter make clear, Aristotle's purpose is to emphasise that induction – as well as deduction although in a different way – implies a sort of preexisting knowledge (the knowledge of the particulars), and that induction is able to bring about a certain sort of "teaching" (διδασκαλία).

Moreover, I think that the second text (I 31; text [17]) points out that induction does not give "the reason why", *to aition*, which is only given by the universal itself. The inductive process just leads to the universal and, actually, precedes the stage of the demonstration, which, for its part, starts from the universal.[21] In addition, in the first text (I 1), οἱ δεικνύντες are on the inductive side, by contrast with those who have recourse to deductions or syllogisms. Mignucci's commentary on that point (1975: 6), is very clear and useful: here, Mignucci says, δεικνύναι is not to be understood in the strong sense of "prove", but in the sense of "exhibit", "show" (in Italian: *esibire, mostrare*). He adds that induction does not "prove", excepted in the case of complete enumeration or perfect induction (*APr.* II 23, 68b27–9).

For all these reasons, for clarity, and if one takes into account the grammatical structure of the passage (which emphasises the difference between διὰ συλλογισμῶν and δι' ἐπαγωγῆς), I think that "showing the universal" is a better translation for δεικνύντες τὸ καθόλου.

5. Indirect Implications for the Theory of Demonstration

Finally, one may detect a fifth class, containing indirect semantic effects due to certain uses of δεικνύναι. One should be cautious on that point because it is not always easy to make a clear distinction between, on the one hand, indirect or negative occurrences and, on the other hand, the generic and relaxed sense of the term. Nevertheless, there are good reasons to think that Aristotle, in some passages, is happy to use, with δεικνύναι, a verb which is flexible enough to designate not only a genuine "proof" but also a weak or incorrect kind of inference.

To begin with, one may observe that, taken that way, the term plays an important role in dialectical arguments. See, for example, II 4, 91a35–b1:

> [18] Those people who prove through conversion what soul is (or what man is, or anything else which exists) postulate what was set at the beginning. E.g. if someone were to claim that soul is what is itself explanatory of its own being alive, and that this is a number which moves itself: it is necessary to postulate that soul is just what is a number which moves itself, in the sense of being the same thing as it.
> οἱ μὲν οὖν διὰ τοῦ ἀντιστρέφειν δεικνύντες τί ἐστι ψυχή, ἢ τί ἐστιν ἄνθρωπος ἢ ἄλλο ὁτιοῦν τῶν ὄντων, τὸ ἐξ ἀρχῆς αἰτοῦνται, οἷον εἴ τις ἀξιώσειε ψυχὴν εἶναι τὸ αὐτὸ αὑτῷ αἴτιον τοῦ ζῆν, τοῦτο δ' ἀριθμὸν αὐτὸν αὐτὸν κινοῦντα· ἀνάγκη γὰρ αἰτῆσαι τὴν ψυχὴν ὅπερ ἀριθμὸν εἶναι αὐτὸν αὐτὸν κινοῦντα, οὕτως ὡς τὸ αὐτὸ ὄν.

In other words, those – probably some Platonists like Xenocrates – who pretend to prove the essence through conversion, actually do not prove anything because their argument is a mere postulation of what is to be proved. It would have been weird to use ἀποδεικνύναι in this context since, according to Aristotle, this is not a case of correct demonstration. Obviously, δεικνύναι is more suitable for the implicit expression of a critical distance, with the sense of "those people who *try to* prove".[22]

Beyond the particular case of dialectical arguments, δεικνύναι may name erroneous inferences, that is pseudo-demonstrations.[23]

See I 5, 74a4–6:

> [19] It must not escape our notice that we often make mistakes – what we are trying to prove does not hold primitively and universally although we think we are proving it universally and primitively.
> Δεῖ δὲ μὴ λανθάνειν ὅτι πολλάκις συμβαίνει διαμαρτάνειν καὶ μὴ ὑπάρχειν τὸ δεικνύμενον πρῶτον καθόλου, ᾗ δοκεῖ δείκνυσθαι καθόλου πρῶτον.

Among the examples which are given in this chapter, there is the so called "proof" according to which perpendiculars do not meet because they are perpendiculars; actually, it is not *qua* perpendiculars since it holds insofar as angles are equal (it does not hold for right angles only). I think it is significant that the verb δεικνύναι is used at the beginning of this passage for a pseudo-demonstration. An objection may be raised: ἀπόδειξις too appears at 74a10–1 concerning the case

δεικνύναι is applied to. But this is straightaway followed by the opposition with a more technical and more demanding conception of demonstration, i.e. "universal demonstration": the demonstration which applies to its subject primitively and universally. So, all things considered, we can guess that δεικνύναι, in the first lines of I 5, prepares the ground for this opposition: one may say that an incomplete or partial demonstration is a sort of proof, and even a sort of ἀπόδειξις in the broad sense, but this is not a demonstration in the strictest sense of the word, a "universal demonstration" since it does not consider the appropriate extension of the genus.

Another example of this way of contrasting general terms with the technical vocabulary of demonstration is offered by I 9, about inappropriate principles. Let us briefly recall this passage. First, Aristotle posits the premises of his own argument: [20] "you cannot demonstrate anything except from its own principles if what is being proved holds of it as such" (75b37–8: ἕκαστον ἀποδεῖξαι οὐκ ἔστιν ἀλλ᾽ ἢ ἐκ τῶν ἑκάστου ἀρχῶν, ἂν τὸ δεικνύμενον ὑπάρχῃ ᾗ ἐκεῖνο). Consequently, the aforementioned criteria of right demonstration are not sufficient: [21] "scientific knowledge is not simply a matter of proving something from what is true and indemonstrable and immediate" (75b39–40: οὐκ ἔστι τὸ ἐπίστασθαι τοῦτο, ἂν ἐξ ἀληθῶν καὶ ἀναποδείκτων δειχθῇ καὶ ἀμέσων). In both sentences, δεικνύναι and the terms of the same family are to be understood in the first way, i.e. as equivalent to ἀποδεικνύναι properly speaking[24] whereas, in the second case, it seems that we have the generic sense.[25] Indeed, Aristotle intends to refine, in the following lines, his own conception of scientific knowledge, adding a supplementary difference: scientific knowledge as such requires – given the subject it is dealing with – the appropriate principles (76a4–7), so premises and conclusion share a genus: "they must be of a kind with (συγγενῆ) them" (76a30). Now, in order to demarcate the right conception of demonstration (that is, the kind of proof which satisfies this principle of homogeneity) from inappropriate demonstrations, Aristotle evokes the way Bryson "proved", as it were, the squaring of the circle:

[22] you cannot demonstrate anything except from its own principles if what is being proved holds of it as such, scientific knowledge is not simply a matter of proving something from what is true and indemonstrable and immediate. Otherwise it will be possible to prove things in the way in which Bryson proved the squaring of the circle. Such arguments prove in virtue of a common feature which will also hold of something else; and so the arguments also attach to other items which are not of a kind with them. Hence you do not understand the item as such but only incidentally – otherwise the demonstration would not attach to another kind as well.

(75b37–76a3)

ἕκαστον ἀποδεῖξαι οὐκ ἔστιν ἀλλ᾽ ἢ ἐκ τῶν ἑκάστου ἀρχῶν, ἂν τὸ δεικνύμενον ὑπάρχῃ ᾗ ἐκεῖνο, οὐκ ἔστι τὸ ἐπίστασθαι τοῦτο, ἂν ἐξ ἀληθῶν καὶ ἀναποδείκτων δειχθῇ καὶ ἀμέσων. ἔστι γὰρ οὕτω δεῖξαι, ὥσπερ Βρύσων τὸν τετραγωνισμόν. κατὰ κοινόν τε γὰρ δεικνύουσιν οἱ τοιοῦτοι λόγοι, ὃ καὶ ἑτέρῳ ὑπάρξει· διὸ καὶ ἐπ᾽ ἄλλων ἐφαρμόττουσιν οἱ λόγοι οὐ συγγενῶν.

οὐκοῦν οὐχ ᾗ ἐκεῖνο ἐπίσταται, ἀλλὰ κατὰ συμβεβηκός· οὐ γὰρ ἂν ἐφήρμοττεν ἡ ἀπόδειξις καὶ ἐπ' ἄλλο γένος.

Bryson did offer a proof, and even a sort of "demonstration" (line 76a2–3), but this is not a proper demonstration because, as a parallel passage from the *Sophistical Refutations* 11[26] shows, he pretended to solve a geometrical problem through principles which belong, actually, to both geometry and arithmetic.

I admit that these semantic nuances are not crystal clear and that there is, probably, a certain indecision in Aristotle's terminological choices. Nevertheless, the terminology of "proof" appears twice in the quoted passage, and I think that this is at least a clue in favour of the hypothesis that sometimes δεικνύναι indicates an incorrect way of proving. The translation by "prove", in this context, is probably better than "show" since it designates a kind of deduction, provided that we keep in mind that it does not refer, in this particular case, to the real, scientific deduction. This is precisely what we are looking for in this section of the *Posterior Analytics*: the "demonstration and science *simpliciter*", ἀπόδειξις and ἐπιστήμη ἁπλῶς, as it is named, just before our passage, in I 8, 75b23–5 (see also I 9, 76a14): the kind of deductive reasoning which derives a conclusion from true, immediate, universal, and necessary premises, through the middle term, and in which premises and conclusion are homogeneous.

6.   Conclusion

It is doubtful that Aristotle intends to assign a crucial meaning to δεικνύναι in each case. Moreover, this verb admits several degrees of precision and even its logical extension is fuzzy. Indeed, as we have seen, it covers a wide range of meanings and connotations. It is, in this sense, an unstable term. Nevertheless, if it is taken as an alternative to other terms which are, like ἀποδεικνύναι, at the core of Aristotle's theory of science, it is vested with an important function. Most of the time, the traditional translation ("prove", "proof") does the job, provided that we keep in mind that a single consistent translation admits a set of nuances, depending on the particular context of each occurrence.

More fundamentally, what is at stake here, beyond mere questions of translation? Three reasons may explain, at least in part, the pervasive presence of δεικνύναι in the *Posterior Analytics*, in particular when it clearly differs from ἀποδεικνύναι.

First, to the extent that it is distinct from ἀπόδειξις and ἀποδεικνύναι, the case of δεικνύναι reminds us that there is room, in addition to scientific deduction properly speaking, for a less demanding and more relaxed conception of deduction.

Second, when it is applied to induction, with the sense of "showing something", δεικνύναι reminds us that the first principles are to be grasped without demonstration.

Lastly, and perhaps most importantly, one may suspect that Aristotle *does* need this unstable verb (and other terms of the same family) in order to preserve, in contrast to ἀποδεικνύναι (and to ἀπόδειξις), the technical sense of "demonstrate" (and "demonstration") in the strict sense of the term – for instance, in the expression

ἀποδεικνύναι ἁπλῶς. The verb δεικνύναι is not the most suitable term for scientific reasoning, and it is not even one of the most refined terms of Aristotle's lexicon in the *Posterior Analytics*, but I think it is one of his main semantic tools to build the terminology of demonstration, insofar as it leads the reader to focus on demonstration in the highest sense of the word. Taken that way, δεικνύναι is perhaps a term whose proper meaning is less important than its function in Aristotle's lexical strategy. Paradoxically, the flexibility of the vocabulary of "proof", if not its imprecision, serves the cause of Aristotle's project, in the *Posterior Analytics*, to build a rigorous scientific terminology.

Notes

 1 Translation (Barnes 1993), here and in the following, with slight modifications. Note that if one does not follow Barnes in translating συλλογισμός by "deduction", "deduction" could be a candidate, keeping in mind that certain "proofs" are not deductions, as we shall see. I especially thank Matthew Duncombe for his careful rereading of my text, as well as the anonymous referees and the participants in the Conference at Lisbon for their valuable remarks and suggestions.
 2 This is true for *APo.*, but not for *APr.*, where δεῖξις appears several times: I 15, 34a4; I 29, 45a35; II 7, 59a33, 41 (where it gets the same meaning as ἀπόδειξις).
 3 Although this chapter starts from translation issues and hopes to contribute to solve them, I do not think that arguments of a linguistic nature can be strictly distinguished from philosophical points of interpretation. At any rate, I consider semantic distinctions as a necessary (but not sufficient) basis for conceptual distinctions (here between δεικνύναι and ἀποδεικνύναι mainly).
 4 It is worth noting that ἀποδεικνύναι, in this context, does not always refer to a "demonstration" properly speaking, i.e. to a sound syllogism proceeding from premises prior by nature. In the same chapter, indeed, Aristotle admits that it is possible to "demonstrate", in a sense, *from* the fact (78a30; 36). I cannot dwell on the issue of the so called "syllogism of the fact". At any rate, I consider this weaker or generic use of ἀποδεικνύναι as an exception in the *APo*. As we shall see, δεικνύναι would have been more appropriate in this case since this latter term may designate both the demonstration in the strict sense and a so-called "demonstration" (or the generic meaning of "demonstration").
 5 Here again, the grammatical construction reinforces the synonymy claim; for ἀπόδειξις + ἐκ + genitive, see text [3]. "By nature": emphasised by Barnes 1993.
 6 See also I 2, 71b23; 72a39; 11, 77a28.
 7 For similar cases, see *APo*. I 11, 77a34; 32, 88b25–6; II 3, 90b25; II 12, 96a1, and many other occurrences in the *corpus aristotelicum* as a whole.
 8 As we have seen in *APo*. I, 13, also different meanings of ἀποδεικνύναι may correspond to different extensions. I thank one of the anonymous referees for this remark.
 9 See also I 23, 85a2. As Mignucci (1975: 511), says: "qui . . . l'aggettivo ha un impiego non tecnico".
10 By contrast, in Plato's dialogues, it designates, not only the sophistic way of developing discourses (e.g. *Prt*. 320c), but also any kind of account or statement (e.g. *Phd*. 99d).
11 For a different case of the generic sense of δεικνύναι, one may also refer to *EN*. VII 1, 1145b4, 7 (two occurrences), where it is related to ἔνδοξα which are drawn from the most authoritative opinions on *akrasia*. It is clear that this is not a demonstrative syllogism, but a dialectical one.
12 See I 24, 85a13 for the latter expression. With δεικτική, see I 25, 86a32; 86b31; 26, 87a5 (*vs* demonstration *per impossibile*).
13 This term is admitted in logic and in mathematics for a direct reasoning or a demonstration which makes clear the intermediaries.

14 This is also Striker's translation for δεικτικῶς in her translation of the *Prior Analytics*, e.g. in *APr*. I 8, 29a31–3 (*vs* demonstration *per impossibile*), I 23, 40b25 (*vs* demonstration *per impossibile* as counting as a kind of hypothetical argument). Same translation ("ostensive") for the adjective in 40b27 (again: *vs* demonstration *per impossibile* as counting as a kind of hypothetical argument). Cf. Striker (2009).

15 Cf. in this sense the German translation by Detel, "aufweisende Demonstration".

16 About scientific (or perfect) induction and its connection to deduction (which can be obtained from induction through the conversion of one of its premises), see *APr.* II, 23, 68b15–29.

17 See also Ross' remarks: "The knowledge of a universal principle which supervenes on perception of particular facts is not itself deduction, but intuitive knowledge, won by induction . . . but the principles thus grasped may become premises from which the particular facts may be deduced" (Ross [1949] 1965: 599).

18 As Medda (2016: 1015) also does, whereas in *APo*. I 1, 71a8, he prefers "prove" ("le seconde provano l'universale attraverso l'evidenza del particolare").

19 Mignucci (2007: 262–3).

20 I refer here to text [16]. Among the modern translations, see Barnes in the *Complete works*: "proving the universal"; Barnes (1993): "proving something universal"; Tricot: "en prouvant l'universel"; Mignucci (2007): "provando l'universale"; Pellegrin: "en prouvant l'universel", etc.

21 In this sense, see Barnes (1993: 194).

22 Italics are mine. See Barnes (1993): "try to prove".

23 See again I 32, 88b15, against the undiscriminating use of any principle to prove anything.

24 See section 1.1.

25 See section 3.1.

26 See 171b16; 172a2–7.

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7 Causal Explanation and Demonstration in *Posterior Analytics* II 11

Pierre Pellegrin

We should certainly agree with David Ross, according to whom "this chapter is one of the most difficult in Aristotle",[1] but it is also a crucial one since it comes to grips with the connexion between the two main aspects of Aristotelian science, namely, causal explanation (aetiology) and demonstration. I will consider the first part of the chapter only, up to 94b26, where this combination is at stake, leaving aside, among other subjects, the very interesting question of the unity of the chapter. There are two problems notoriously difficult is this section: the status of the formal cause, and the way the causal syllogism may be constructed in the case of the final cause. To those two problems I will add another one and begin with it: how are we to understand the sentence πᾶσαι αὗται (i.e. αἰτίαι) διὰ τοῦ μέσου δείκνυνται at the beginning of the chapter (94a23)? Answering this question will help us to solve the second difficulty, that concerning the final cause. All translators and commentators (except myself) consider δείκνυνται as a passive form. But in what way could the causes be *demonstrated*? If we are to adopt this interpretation, we should take δείκνυνται in a weak sense: "the cause is exhibited through the middle term"

But this common position seems hardly possible since the ἐπίστασθαι of the first line refers to "science" in a proper and strong sense and therefore to causal explanation in a proper and strong sense. Δείκνυνται must then certainly be understood as meaning "demonstrate" in a proper and strong sense. In my French translation of the *Posterior Analytics*,[2] I propose to take δείκνυνται as a middle voice form. One could object that Aristotle is supposed to make a distinction between ἀποδείκνυμι and δείκνυμι, the first term referring to demonstration in a full Aristotelian sense and the second to the fact of making something clear. But readers and translators of Aristotle know that he quite often uses δείκνυμι to indicate a demonstration in the proper sense. Let us try to follow the first section of this chapter.

The first four lines remind us that there is no scientific knowledge except through the knowledge of the causes; then Aristotle quickly describes the four causes, and he undertakes to consider what relationship each of the causes has with the middle term of the scientific syllogism under consideration, beginning with the material cause.

The first three lines of this section on the material cause[3] are translated in this way by Jonathan Barnes:[4]

> An explanation [i.e. a cause in Barnes' terminology] of the type "if something holds it is necessary for this to hold" occurs not when a single proposition is assumed but only when at least two are. This is so when the propositions have a single middle term. Thus when this one item is assumed, it is necessary for the conclusion to follow.
>
> (94a24–7)

This has been interpreted in two ways:

1 These lines just remind us what a syllogistic demonstration is, and this applies to all kinds of causes. This is Averroes' position and also that of "the Latins" according to Zabarella.[5]
2 According to "the Greeks" (Zabarella says), these lines concern the material cause only, since they repeat in the singular the description of this cause given at the beginning of the chapter (τό τε γὰρ οὗ ὄντος τοδὶ ἀνάγκη εἶναι on the one hand at 94a24, τὸ τίνων ὄντων ἀνάγκη τοῦτ' εἶναι on the other at 94a21). Zabarella adopted this interpretation, relying on the δῆλον δὲ καὶ ὧδε at 94a27 ("this is *also* clear in virtue of what follows"), which proposes an example of what has been just said: as this example is an example of the material cause, what had been said in the lines 94a24–27 also concerns the material cause. Aristotle gives as an example of the working together of the syllogistic form of the argument and of the material causality the angle inscribed in a semicircle: if B (half of two right angles) holds of A (right angle), necessarily A belongs to C (angle inscribed in a semicircle). B is the middle term and the material cause in virtue of which A belongs to C. In my 2005 translation of the *Posterior Analytics*, I have also adopted the interpretation (2), considering that Averroes and "the Latins" have probably been misled by the similarity of the definition of the material cause offered here with that of the syllogism found at the beginning of the *Prior Analytics* (a syllogism is "a discourse in which, certain things having been supposed, something different from the things supposed necessarily results because these things are what they are," 24b18).[6]

In fact, both "the Latins" and "the Greeks" are right to some extent since lines 94a24–7 may also be applied to any syllogistic demonstration because no syllogism may work with a single premiss. We could then paraphrase the text in the following way: "the four causes demonstrate through a middle term, which presupposes that the argument have two premises and not only one, and this is evidenced by (γάρ) what happens with the material cause".

Much has been said on the present description of the material cause as "if certain things hold, it is necessary for this to hold", and I do not want to devote much time to this question. Let me just mention that I am not convinced that we have to refer to "intelligible matter" to understand this, as some did.[7] We should just remember that at *Physics* II 3,195a16 the premisses (αἱ ὑποθέσεις) are given as the τὸ ἐξ οὗ αἴτιά

of the conclusion, just as matter is τὸ ἐξ οὗ αἴτιά of artefacts. This means that what is caused is included in the cause: from this point of view, there is nothing else in the statue but the marble it is made of, and nothing else in the conclusion but what is already present in the premises. On the contrary, in the case of the moving cause, we need some additional reality: the physician is external to the patient he is healing.

Much has been said also of the geometrical example in this passage. In fact, this example refers to geometrical procedures that are much less complicated than those to which it is usually considered to refer. In my view, Aristotle possibly alludes to a demonstration of this kind: the angle AON is equal to two angles OAP (since the triangle OAP is isosceles), and the angle AOP is equal to two angles OAN (since the triangle OAN is isosceles), these two propositions relying on the Pythagoras theorem (see the following). Therefore, the angle NAP is equal to the half of the sum of the angles AON and AOP, this sum being equal to two right angles. Therefore, NAP is a right angle.
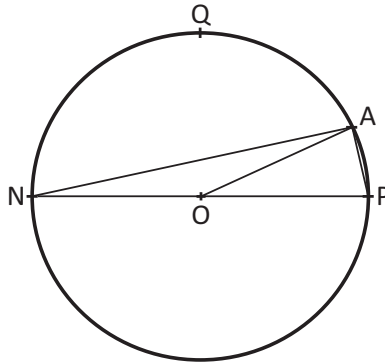
It does not seem necessary to refer to *Metaphysics* IX 9, 1051a24–9 (which does not consider a demonstration but an "immediate grasping") as Ross does. But we should assume that such a demonstration takes for granted that the angles at the base of any isosceles triangle are equal (a theorem attributed to Thales), and that the sum of the angles of any triangle is equal to two right angles (attributed to Pythagoras). In other words, this syllogistic demonstration presupposes some extensive mathematical knowledge.

We have the following syllogism: AaB, BaC, AaC, in usual terms:

> Half of two right angles is a right angle
> The angle inscribed in a semicircle is half of two right angles
> The angle inscribed in a semicircle is a right angle

An example like this shows clearly enough what a scientific syllogism is, or rather is not: it is certainly a demonstrative procedure that makes a statement persuasive in proving it, but not a heuristic procedure. If the premises of this syllogism are true, it is impossible to doubt that an angle inscribed in a semicircle is a right angle,

but in no way does this syllogism establish the proposition "an angle inscribed in a semicircle is a right angle". Syllogisms offer a cogent reformulation of propositions that have been established by other means. That is what mathematics does and not by means of syllogisms.

In the case of the material cause, then, the material cause and the middle term are one and the same thing, namely, B ("half of two right angles") in Aristotle's example. But this happens to be true *also* in the case of the moving cause. This is what Aristotle explicitly asserts at the end of the section devoted to the moving cause: "in this case *too* [i.e. as in the case of the material cause] the cause, namely the first mover, is the middle term" (94b6).[8] "Being first to attack" is at the same time the moving cause of the fact that the Athenians have been involved in a war with the Persians (because the Athenians took the initiative to attack Sardis, a Persian city), and the middle term of the syllogism:

> Whoever is first to attack has to face war
> The Athenians were first to attack
> The Athenians had to face war

I therefore continue to think that it is better to consider the δείκνυνται at 94a23 as a middle voice form rather than a passive one. The causes are the *demonstrans*, not the *demonstrandum*: they do not appear in the conclusion. It seems that, contrary to what he pretends to do, that is what Barnes in fact does in translating "each of the four types of explanation [i.e. causes] is proved through the middle term", given the reformulation he proposes in his commentary: "each [of the causes] can appear in a demonstrative deduction [i.e. syllogism]" (Barnes 1994: 225). This is in fact equivalent to Ross' position: the cause "is exhibited through" the middle term, taking δείκνυνται as a passive form, but in a weaker sense. But the context is that of scientific demonstration, as I said.

But things definitely go wrong in the case of the final cause.[9] In spite of the very numerous (and inventive) proposals of the commentators, there is no way of having the syllogism concerned with the final cause, this final cause being also the middle term of this syllogism.

The text is quite confused and should be read carefully:

> 94b16: δοκεῖ γὰρ ὑπάρχειν τῷ περιπατεῖν τῷ Γ τὸ Β τὸ μὴ ἐπιπολάζειν τὰ σιτία, τούτῳ δὲ τὸ Α τὸ ὑγιεινόν. τί οὖν αἴτιον τῷ Γ τοῦ τὸ Α ὑπάρχειν τὸ οὗ ἕνεκα; τὸ Β τὸ μὴ ἐπιπολάζειν.

Which may be translated as something like "For it seems that B [digestion, defined as "the food not remaining on the surface", i.e. at the mouth of the stomach, or in other words "the sinking of the food"] belongs to C [walking after dinner]. To this one [B] belongs A [being healthy]. For what cause does A belong to C, for what purpose? Because of B (not remaining on the surface)". We have: BaC, AaB, AaC. Or, in usual terms:

> Walking after dinner helps digesting
> Digesting produces health
> Walking after dinner produces health

"Digestion", which is the middle term of the syllogism under consideration, is certainly the cause explanatory of the fact that walking after dinner makes people healthy. But it can in no way be the final cause of health. It is rather its moving cause. Health, on the other hand, is the final cause of walking after dinner. We are, then, facing a dilemma. Either the text is incoherent or corrupted, or, in the case of the final cause, διὰ τοῦ μέσου does not mean that the (final) cause operates as the middle term of the syllogism.

To solve this problem, we have to go back to the beginning of the chapter, more precisely to 94a23–27. Let us quote and translate this passage again:

> πᾶσαι αὗται διὰ τοῦ μέσου δείκνυνται. τό τε γὰρ οὗ ὄντος τοδὶ ἀνάγκη εἶναι μιᾶς μὲν προτάσεως ληφθείσης οὐκ ἔστι, δυοῖν δὲ τοὐλάχιστον τοῦτο δ' ἐστίν, ὅταν ἓν μέσον ἔχωσιν. τούτου οὖν ἑνὸς ληφθέντος τὸ συμπέρασμα ἀνάγκη εἶναι.
>
> All causes demonstrate [are exhibited] through the middle term. For "if something is the case, it is necessary for this to be the case", this does not work if we take one premiss: we need at least two. And it works when these propositions have one middle term in common. Thus, if this common term is assumed, the conclusion necessarily follows. [The example of the right angle inscribed in a semicircle immediately follows.]

Of course, we know, from *Posterior Analytics* I 13 and other passages, that it is not enough for a syllogism to be valid to be a demonstrative (scientific) syllogism: it must, in addition, meet some other requirements concerning its premisses, and its middle term should be the cause of the conclusion. This is clearly illustrated by the famous example of the non-twinkling planets: "it is not because the planets do not twinkle that they are near, but because they are near that they do not twinkle" (I 13, 78a37). I then take the clause πᾶσαι αὗται (i.e. αἰτίαι) διὰ τοῦ μέσου δείκνυνται just to resume the position expressed several times in the *Posterior Analytics*: if you want to have scientific knowledge (ἐπίστασθαι) of something in a primary and strong sense, you must (1) have recourse to causal explanations (which are of three or four types; see the following) and (2) have recourse to a syllogism the middle term of which is causal (explanatory) of the conclusion. But I do not see here the requirement that this explanatory middle term must in addition be the cause which the scientist has recourse to in explaining the facts he has to explain. In the case we are considering, that of a syllogism demonstrating a proposition through the final cause (We walk *in order to* be in good health), the middle term should be explanatory of the conclusion (good digestion explains *why* we are in good health), but this middle term is not the final cause of the conclusion.

David Ross is then certainly wrong in entitling our chapter "each of the four types of cause can function as a middle term". Or, more precisely, this may be the case, but it also may not. And in fact, our chapter gives examples of the two possibilities:

1 The cause itself is the middle term. For example, "being aggressors first" is both the middle term of the syllogism that explains why the Athenians had to

  face war and the moving cause of the situation of the Athenians (they suffer war *because* they have been first aggressors).

2 The middle term is of course causally explanatory, but it may be the case that it does not display the cause which is supposed to explain the fact which is to be explained. The middle term "digestion" is causative of the fact that walking makes people healthy, but not as a final cause (probably as a moving cause) of health. Digestion is nevertheless involved in a final explanation: people walk *in order to* be healthy, and this happens *because*, doing this, they have a good digestion.

We should notice an additional and quite important point. In case (1) the middle term, which is at the same time the cause involved in the explanation (for instance the moving cause), disappears in the conclusion. This actually must be the case in any syllogism: the middle term belongs to both premises, but not to the conclusion. "Being aggressors first" is not present in the conclusion "the Athenians had to face war". But in case (2) the final cause is present in the conclusion: health is the final cause of walking after dinner, and the conclusion is "we walk in order to be in good health". But given what a syllogism is, the final cause cannot be both the middle term of the syllogism and present in the conclusion.

  Jonathan Barnes, one of the commentators who seriously intended to tackle this difficulty, thinks that the problem is specific to the medical example of the text and that we could find some explanations through the final cause in which the final cause is at the same time the middle term of the syllogism, and this is precisely what Aristotle alludes to at 94b9–10: διὰ τί οἰκία ἔστιν; ὅπως σῴζηται τὰ σκεύη ("Why is there a house? For the sake of protecting belongings"). Barnes imagines the following example:

  Shelters for belongings are roofed
  Houses are shelters for belongings
  Houses are roofed

But this is certainly not what Aristotle has in mind here because he parallels the two propositions "we walk in order to be healthy" and "houses exist in order to protect goods", both propositions being the conclusion of the syllogism and including the final cause. The syllogism Aristotle is alluding to is rather something like this:

  Roofed buildings are for the sake of protecting goods
  Houses are roofed
  Houses exist for the sake of protecting goods

We then certainly should accept that the final cause is not the middle term of the syllogism in the conclusion of which this cause is present, and, therefore, πᾶσαι αὗται διὰ τοῦ μέσου δείκνυνται does not imply that the cause at stake in a demonstrative syllogism has also to be the middle term of this syllogism.

In fact, the final cause cannot work but in connection with some material/moving cause(s), whereas a material/moving cause may be explanatory by itself. Having attacked Sardis is sufficient to explain why the Athenians had to face war. In the same way, if walking helps digesting, and digestion produces health, then walking produces health, which is a sufficient explanation for health. If one wants to introduce a final explanation, namely that walking is *for the sake of* health, one should take for granted a previous syllogism in which the middle term "digestion" is at the same time the moving cause of the conclusion. Final explanations are second-order explanations.

The other difficult question we have to consider is that of the formal cause. I think that the formal cause does not appear here in its own right but only combined with the other causes. And this is the reason for which there is no example of the formal cause after Aristotle has presented the material cause with the example of the angle inscribed in a semicircle and before the moving cause with the example of the Athenians. The order of text is interesting in itself. In the list of the four causes at the beginning of the chapter, the formal cause comes first. But in the examination of each cause in turn, it comes just after the material cause. Why is this?

The passage should be translated in this way:

> Then if B [being the half of two right angles] holds, A belongs to C (this means that the angle in a semicircle is right). For <B> is the same thing as the essence of <C>, because this is what the definition signifies. But on the other hand, it also has been shown that the cause as the essence is the middle term.
>
> (94a32–6)[10]

Contrary to the other commentators, who understand "For <B> is the same thing as the essence of <A>", we should accept Barnes' reading ("<B> is the same thing as the essence of <C>"): Not "'half of two right angles' is the essence of 'right angle'", but "'half of two right angles' is the essence of 'angle inscribed in a semicircle'". The usual reading, Barnes says, "ascribes to Aristotle the absurd view that *being half of two right angles* is the essence of *being a right angle*" (Barnes 1994: 227). Mario Mignucci,[11] followed by Roberto Medda,[12] wisely accepts Barnes' reading.[13]

In the case of the material cause, "being the half of two right angles" is the formal cause (definition) of "angle inscribed in a semicircle", and it is also the middle term. The same is true for the moving cause. "Being aggressors first" is the essence of the Athenians (what the Athenians are) in the particular situation they were in when they attacked Sardis. In this particular situation, the Athenians could be *defined* as those who attacked Sardis, though they had not been attacked. This combination of the formal cause with the other causes is a condition for these causes to be part of a scientific demonstration because in scientific demonstrations premises should have the form of I-predications,[14] as I tried to show in an article published in 1990.[15] This interpretation agrees with those adopted by Robin, Le Blond, and some others.

But we should take a further step. The sentence at 94a35–36 may be read in three ways:

1 ἀλλὰ μὴν καὶ *τοῦ τί ἦν εἶναι αἴτιον δέδεικται τὸ μέσον* (ms., Barnes, Mignucci, Medda though he prints Ross' text) = it has also been shown that the cause of the essence is the middle term.
2 ἀλλὰ μὴν καὶ *τὸ τί ἦν εἶναι αἴτιον δέδεικται τὸ μέσον <ὄν>* (Ross) = it has also been shown that the middle term is the cause as the essence.
3 ἀλλὰ μὴν καὶ *τὸ τί ἦν εἶναι αἴτιον δέδεικται τὸ μέσον* (Philoponus and a 14th century Coislinianus manuscript, Bekker, Waitz) = it has also been shown that the essence being the middle term is the cause.[16]

In my 2005 translation I have adopted (1), but I now definitely prefer (3). This may be applied to the three examples considered by Aristotle in this chapter. "Half of two right angles" is the essence of "angle inscribed in a semicircle" and is also the middle term of the syllogism, and, as such, the cause for which the angle inscribed in a semicircle is a right angle. "Being first aggressors" is the essence of "the Athenians" (i.e. their definition in the peculiar situation when they have been attacked in retaliation of their own aggression) and also the middle term of the syllogism demonstrating why the Athenians had to face war. Finally, "digesting" (making the food sink) is the essence of "health", as Aristotle explicitly says at 94b19–20,[17] and B (digestion described as "the food not remaining at the surface", 94b14) is also the middle term, and, as such, the cause for which walking makes people healthy. These middle terms are of course to be found only in the premises, not in the conclusion. As the formal cause is present in the three cases, those of material, moving and final causes, it is not surprising that it does not appear in its own right, and that no example of it be given.

Here we should notice that in many *definitions*, especially in biology, the formal cause merges with the final cause. The definition of the lung, for instance, as a cooling organ at the same time gives the goal of the lung. This is a situation which is quite common in natural science, as Aristotle recognises at the beginning of the *Generation of Animals*: there are also "causes as the end and causes as the formula of the essence, but those two should be considered pretty much as one" (I 1,715a5).[18]

But the cause as the essence (τὸ τί ἦν εἶναι, 94a21) may also combine with causes other than the final one, as I tried to show in my 1990 article. If we consider the causes of sleep, its final cause is the conservation of the organism, but sleep cannot be defined as "the function that preserves organisms". Let us have a look at the final paragraph of the *De Somno*, using J.I. Beare's translation:

> We have now stated the cause of sleeping, viz., that it consists in the recoil by the corporeal element, borne upwards by the connatural heat, in a mass upon the primary sense-organ; we have also stated what sleep is, having shown that it is a seizure of the primary sense-organ, rendering it unable to actualize its powers; arising of necessity . . . , i.e., for the sake of its conservation; since remission of movement tends to the conservation of animals.
>
> (3, 458a25–32)

In the proceedings of the seventh Symposium Aristotelicum (1975),[19] Jürgen Wiesner considers the question of the unity of the *De Somno*. Commenting on this last section of the treatise, he writes, "it has to be conceded that the only treatment of the formal cause is to be found in the final recapitulation, and unlike the other causes it has not been gone into in detail previously".[20] But why is there no material cause in this recapitulation? In fact, we should assume that the formal cause merges with the material cause: the seizure of the primary sense-organ (τοῦ πρώτου αἰσθητηρίου κατάληψις, *De Somno* 3,458a28), i.e. the heart, making it unable to exercise its capacities, independently of the process which brought this seizure about (this process being the moving cause of sleep), is precisely *what sleep is*: it is much more definitory of sleep than the end of sleep, namely, the conservation of the organism, or than the upwards recoil by the corporeal element, which is its moving cause. And this seizure is the material cause of sleep. In the same way, the definition of sperm is identical to its moving cause, the process of concoction of the food, not to its material cause, the food, nor to its final cause, the production of an offspring.

The idea that, in the syllogism demonstrating through the final cause, the explanatory middle term is the moving cause is, to some extent, according to Aristotle, made clearer if one "transposes the formulas" (94b22). Unfortunately, the cryptic formula μεταλαμβάνειν τοὺς λόγους is anything but clear to us. I am not sure, but I want to propose a hypothesis, given the comment Aristotle makes on this formula at 94b23, namely, αἱ δὲ γενέσεις ἀνάπαλιν ἐνταῦθα καὶ ἐπὶ τῶν κατὰ κίνησιν αἰτίων ("the generations occur in the opposite order than the order of moving causes"). I take γενέσεις to refer to the final causes (because of the ἐνταῦθα, "in the present case") and τῶν κατὰ κίνησιν αἰτίων to the moving causes. If the order of the terms is inverse in explanations through final causes to those through moving causes, the "transposition" could be this: Instead of BaC, AaB, and AaC, we could have CaB, BaA, and CaA. Or in usual terms:

Instead of:

   Walking after dinner helps digesting
   Digesting produces health
   Walking after dinner produces health

We could have:

   Good digestion is produced by walking
   Health is produced by good digestion
   Health is produced by walking

What is remarkable in this syllogism is that the premises and the conclusion are expressions of a moving cause: health is certainly the final cause of walking after dinner, but walking is the moving cause of health. A situation which is described in *Physics* II,3,195a8–11, a text which happens to be crucial for the interpretation of our chapter of the *Posterior Analytics*: "things can be causes of each other, as, for example, exercise is cause of good physical condition and the latter of exercise, although not in the same way, but the one as end and the other as starting point of the movement". In the same way, walking is the moving cause of health, and health is the final cause of walking.

Why is everything clearer in this case (καὶ οὕτως μᾶλλον ἕκαστα φανεῖται, 94b19)? Efficient causality is certainly the most obvious of all the kinds of causes, and this is one of the reasons for which, from the Stoics onwards, causality has been restricted to efficient causality, as it is nowadays. This passage could be a first step towards the modern conception of causality as the action of something on something else.[21]

To conclude, we can say that the clause πᾶσαι αὗται (i.e. αἰτίαι) διὰ τοῦ μέσου δείκνυνται (94a23) should be read as implying two theses: (1) all causes prove a proposition (e.g. the Athenians have to face war) through a middle term which is causal (explanatory), this middle term being sometimes the cause under consideration itself, sometimes not, and (2) this causal middle term (as Pacius says) is also a formal cause.

Notes

1 Ross (1949: 638).
2 Pellegrin (2005).
3 "Τό τε γὰρ οὗ ὄντος τοδὶ ἀνάγκη εἶναι μιᾶς μὲν προτάσεως ληφθείσης οὐκ ἔστι, δυοῖν δὲ τοὐλάχιστον· τοῦτο δ᾽ ἐστίν, ὅταν ἓν μέσον ἔχωσιν. τούτου οὖν ἑνὸς ληφθέντος τὸ συμπέρασμα ἀνάγκη εἶναι".
4 Barnes (1994: 59).
5 Zabarellæ ([1597] 1996: 1149 B-C).
6 "Λόγος ἐν ᾧ τεθέντων τινῶν ἕτερόν τι τῶν κειμένων ἐξ ἀνάγκης συμβαίνει τῷ ταῦτα εἶναι".
7 For example, Barnes (1994: 227).
8 "Μέσον ἄρα καὶ ἐνταῦθα τὸ αἴτιον, τὸ πρῶτον κινῆσαν".
9 "La prova della possibilità che il medio possa esprimere la ragione finale è disperatamente oscura", as Mario Mignucci says in his posthumous translation with a commentary of the *Posterior Analytics* published in 2007 (Mignucci 2007: 280).
10 "Τοῦ Β οὖν ὄντος ἡμίσεος δύο ὀρθῶν τὸ Α τῷ Γ ὑπάρχει (τοῦτο δ᾽ ἦν τὸ ἐν ἡμικυκλίῳ ὀρθὴν εἶναι). τοῦτο δὲ ταὐτόν ἐστι τῷ τί ἦν εἶναι, τῷ τοῦτο ημαίνειν τὸν λόγον. ἀλλὰ μὴν καὶ τὸ τί ἦν εἶναι αἴτιον δέδεικται τὸ μέσον".
11 Mignucci (2007: 115, 279).
12 Cf. his Italian translation of the *Posterior Analytics* (Migliori 2016).
13 More precisely "half of two right angles" can be considered as what the tradition called the "nominal definition" of "right angle", as "a figure with three angle" is the nominal definition of "triangle" (Cf. Philiponus *In APo*. 362,25- 372,18 Wallies).
14 According to Barnes' terminology, "a propostion is an *I-predication* if (i) it is of the form 'Every B is A', and (ii) it is true in virtue of the fact that A holds of B in itself" (Barnes 1994: 112).
15 Pellegrin (1990: 197–219).
16 To step over the problem of the absence of an article before αἴτιον, Julius Pacius, in his famous 1597 (second) edition of the *Organon*, reads αἴτιον with τὸ μέσον: "quiditatem ostendimus esse causam mediam", which an alternative version of (iii).
17 "Τὸ Β τὸ μὴ ἐπιπολάζειν. τοῦτο δ᾽ ἐστὶν ὥσπερ ἐκείνου [i.e. of A] λόγος· τὸ γὰρ Α οὕτως ἀποδοθήσεται": "B, the fact for the food to sink, is something like the formula of A [health], for it has been shown that A is this [i.e. you are in good health when you digest well]". This is true, as I said earlier, only in the situation described in Aristotle's examples: "digesting well" is no more the essence of health *per se*, than "being aggressors" is the *per se* essence of the Athenians.

18 "ὡς τέλος καὶ ὁ λόγος τῆς οὐσίας, ταῦτα μὲν οὖν ὡς ἕν τι σχεδὸν ὑπολαβεῖν δεῖ". Cf. *Metaph.* VIII 4,1044b1.
19 Lloyd and Owen (1978).
20 Wiesner (1978: 248).
21 Cf. the illuminating article by Michael Frede (1980: 217–49).

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8 Aristotle on Multiple Demonstration

A Reading of *Posterior Analytics* II 17–8

David Bronstein and Breno Zuppolini

Introduction

Can the same demonstrable attribute be explained by different causes? Or, to put it in syllogistic vocabulary, can the same major term admit of different explanatory middle terms? Call this "the question of multiple demonstration". Aristotle deals with it in *APo* II 17–8 and, to a lesser extent, in II 16. Interpreters have reacted negatively to these chapters. For example, Jonathan Barnes (1994: 256–7) complains that they contain conflicting views for which "there is no reconciliation" and that "we do not have Aristotle's last word" on the topic. Michael Ferejohn (2013: 147–55) argues that Aristotle is committed to two alternative models of scientific explanation and that there is insufficient textual evidence to support any attempt to integrate them. R. J. Hankinson (2019: 488) concludes that "Aristotle's account seems wholly inconsistent". In this paper, we offer a reading of *APo* II 17–8 in which we defend a more positive verdict. We argue that there are several versions of the question of multiple demonstration, that Aristotle's answers vary depending on the version, and that they form a philosophically motivated and coherent view. His account sheds light on the structure of demonstrations and the kind of scientific knowledge one has in virtue of grasping them. It also presents an ancient answer to the contemporary question of explanatory pluralism: can different explanations of the same state of affairs be true at the same time?[1] As we will see, Aristotle's answer is in a way "yes" and in a way "no", depending on (1) the relations between the different explanations and (2) how states of affairs are individuated.

In Section 1 we identify three versions of the question of multiple demonstration and present an overview of Aristotle's answers. In sections 2–5 we discuss these answers in more detail. We proceed line by line through *APo*. II 17 and 18, which we believe should be printed as a single chapter (because they pursue a single line of argument). We divide the text as follows: 99a1–5 (T1, Section 2), 99a5–16 (T2, Section 2), 99a16–29 (T3, Section 3), 99a30–7 (T4, Section 4), 99a37–b7 (T5, Section 4), 99b7–13 (T6, Section 5).[2]

1.   The Question of Multiple Demonstration

APo II 17 opens: "Is it possible or not for there to be not the same cause of the same thing for all the things [to which it belongs] but different [causes]?" (99a1–2). The question can be interpreted in at least three different ways. First:

Q1: Can the same major term admit of different, inclusive explanatory middle terms for the same minor term?

Aristotle's answer is affirmative. According to his well-known doctrine of the four causes, some natural phenomena are explained by a conjunction of a material, an efficient, a formal, and a final cause.[3]

As Elena Comay del Junco (2019: 7–8) helpfully argues, Q1 should be distinguished from the main question addressed in *APo*. II 17–8, which is whether the same demonstrable attribute can be explained by different, *exclusive* causes. This gives us two other versions of the question:

Q2: Can the same major term admit of different, exclusive explanatory middle terms for the same minor term?
Q3: Can the same major term admit of different, exclusive explanatory middle terms for different minor terms?

Aristotle's answer to Q2 is negative. As we will see, if P is a demonstrable attribute of S, there are not different, exclusive middle terms each of which explains why S is P.

Aristotle presents three distinct answers to Q3, depending on the nature of the minor terms involved. A key factor is his notion of a "commensurately universal attribute".[4] Firstly, if P is a commensurately universal and demonstrable attribute of a genus G, then P is co-extensive with G and there is a cause M that explains why all and only Gs are P. For example, leaf-shedding is a commensurately universal and demonstrable attribute of broad-leafed plant, and Aristotle identifies coagulation of sap as the cause of all instances of leaf-shedding in broad-leafed plants:

PaM   Leaf-shedding belongs to all coagulation of sap
MaG   Coagulation of sap belongs to all broad-leafed plant
PaG   Leaf-shedding belongs to all broad-leafed plant

Secondly, Aristotle believes that if S^1 and S^2 are species of G, we should not try to explain why S^1 and S^2 are P through different causes that are peculiar to each of the species. Rather, we should aim for a unifying cause that explains why P is a feature of all species of G.[5] In other words, for subjects that are members of such a broader kind, the answer to Q3 is negative. Interestingly, for Aristotle, the unifying cause of the species S^1 and S^2 having P is G itself. In *APo* II 16 (98a35–b4), Aristotle says that the cause of certain species (e.g. vines, fig trees) shedding their leaves is the genus "broad-leafed plant", not "sap-coagulation" as we might expect. In the

following lines (98b5–10), the demonstration of the fact that vines shed their leaves is presented with "broad-leafed plant" as the middle term:

PaG	PaG	Leaf-shedding belongs to all broad-leafed plant
GaS^1	GaS^2	Broad-leafed plant belongs to all vine/fig tree
PaS^1	PaS^2	Leaf-shedding belongs to all vine/fig tree

Therefore, although the answer to Q3 is negative for different subjects that are species of the same genus (like vine and fig tree), the answer to Q3 is affirmative when the subjects are related as species to genus (like vine and fig tree are each related to broad-leafed plant): the middle term of "leaf-shedding" for "broad-leafed plant" is "coagulation of sap", while for "vine" and "fig tree" it is "broad-leafed plant". One of our aims in this paper is to explain why this is the case.[6]

Finally, for some demonstrable attributes there is no genus to which they belong as a commensurately universal attribute, which means they are explained by different causes depending on the subject. In these cases, the answer to Q3 is affirmative. For example, lack of bile is the cause of longevity for quadrupeds, while having dry bodies is the cause of longevity for birds (*APo* II 17, 99b6–7):

(P) Longevity belongs to all (M^1) dryness	(P) Longevity belongs to all (M^2) lack of bile
(M^1) Dryness belongs to all (S^1) bird	(M^2) Lack of bile belongs to all (S^2) quadruped
(P) Longevity belongs to all (S^1) bird	(P) Longevity belongs to all (S^2) quadruped

Let us briefly summarise the picture we have achieved so far, with the three questions and their respective answers.

Q1: Can the same major term admit of different, inclusive explanatory middle terms for the same minor term?

Answer: Yes.

Q2: Can the same major term admit of different, exclusive explanatory middle terms for the same minor term?

Answer: No.

Q3: Can the same major term admit of different, exclusive explanatory middle terms for different minor terms?

Answers: (i) No, if the minor terms designate species of a genus of which the major term is a commensurately universal attribute.

(ii) Yes, if one of the minor terms designates a species and the other designates a genus to which the species belongs and of which the major term is a commensurately universal attribute.

(iii) Yes, if there is no genus of which the major term is a commensurately universal attribute.[7]

In what follows we aim to show that these are Aristotle's answers to these questions and that they form an interesting and coherent view on how scientific explanations should be structured.

2. Aristotle's Initial Answer: *APo* II 17, 99a1–16

At the beginning of *APo* II 17, Aristotle gives his initial answer to the question of multiple demonstration:

T1 Is it possible or not for there to be not the same cause of the same thing for all the things [to which it belongs] but a different [cause]? Or [is it that] if [it] is demonstrated *per se* and not by a sign or incidentally, then it is not possible? For the account of the extreme is the middle term. But if [it] is not [demonstrated] in this way, it is possible. And it is possible to inquire incidentally about both that of which the cause [is the cause] and that for which [the cause is the cause].

(99a1–5)

Aristotle states that if the conclusions are demonstrated *per se* (καθ᾽ αὑτὸ) and not "by sign" (κατὰ σημεῖον) or "incidentally" (συμβεβηκός), the causes are not different but the same.[8] What mainly interests us here is the opposition between conclusions demonstrated *per se* and conclusions demonstrated incidentally. We think that this is the distinction between *per se* and incidental causes.[9] When a builder happens to be a doctor, both *the doctor* and *the builder* might be said to be causes of the house, but only *the builder* is the *per se* cause (i.e. the builder builds *as a builder*), while the doctor is a mere incidental cause.[10] Similarly, we can say of the isosceles that *being a triangle* is the *per se* cause of its having 2R,[11] while *having two equal sides* (although an essential property of isosceles) is only an incidental cause. In other words, 2R belongs to the triangle *as such*, but to the isosceles *not as such*, the reason being that 2R belongs to the isosceles because it is a triangle and independently of its being isosceles, i.e. independently of its having two equal sides.[12] This is Aristotle's way of saying that the fact that the isosceles is a triangle is the cause (or a relevant part of the cause) of the fact that it has 2R, whereas its being isosceles (or having the features that distinguish the isosceles from other triangles) plays no explanatory role.

What is the connection between demonstrating "incidentally" and demonstrating through multiple causes? If we try to explain why S^1 is P without taking care to distinguish, among S^1's features, the causally relevant ones from those that are causally irrelevant (and only incidental causes), we might end up with a middle term M^1 that belongs to S^1 but not S^2 and so fail to detect the common feature in virtue of which both S^1 and S^2 are P. For example, to demonstrate that 2R belongs to the isosceles through features that are peculiar to the isosceles is to take 2R as

belonging to the isosceles *per se* and *qua* isosceles. The geometer who realises that 2R belongs to the triangle *per se* and to the isosceles not *per se* will look for an explanation among features that are common to all and only triangles and eventually identify one cause for all instances of the attribute (*APo.* I 4, 74a1–3; I 5, 74a16–b4; I 24, 85b4–15).

An important aspect of *per se* inquiries is that, in the resulting demonstration, "the middle term is the definition of the extreme" (99a3–4). As Aristotle makes clear later, the middle term is the definition of the major term: leaf-shedding is defined as sap coagulation at the connection of the seed (99a28–9). This is congenial to *APo.* II as a whole, in which the middle term is said to be a *logos* of the major term least six times (*APo.* II 8, 93a30–3, b3–7, b9–12; II 17, 99a3–4, a21–3, a25–6).[13] In fact, one of the main theses advanced in *APo.* II is that, if P is a demonstrable attribute, there is a *per se* cause that makes P a genuine, definable kind and figures as a middle term in the demonstration that displays P's essence.[14]

In the sequel to T1, Aristotle continues to contrast "incidental" and "*per se*" inquiries and demonstrations (for clarity's sake we include the last sentence of T1):

T2 And it is possible to inquire incidentally about both that of which the cause [is the cause] and that for which [the cause is the cause]. But these [incidental inquiries] do not seem to be problems. If [we do] not [inquire incidentally],[15] then the middle term will be similar; if the items are homonymous, the middle term will be homonymous, and if they are as if in a kind, it [i.e. the middle term] will be the same way. For example, why do proportionals alternate? For the cause in lines and numbers is different and the same: *qua* line, different; *qua* having this sort of ratio, the same. It's like this in all cases. For the cause of a colour being similar to a colour and a shape to a shape is different in each different case. For similarity is homonymous in these cases. For in the latter case it is perhaps having the sides proportional and the angles equal, and in the case of colours it is the existence of a single perception or something else of that sort. Things that are the same by analogy will also have the middle term [the same] by analogy.

(99a4–16)

Aristotle first claims that (1) incidental inquiries do not yield genuine "problems" or *explananda*. He then argues that (2) when the *explananda* are investigated *per se*, the cause(s) will possess unity and sameness of one kind or another. Let us consider (2).

In the first situation Aristotle analyses, the scientist realises that there is a unifying cause, when she formerly thought that there was not one. For example, "why do proportionals alternate?" (99a8). At first, we might think that the answer depends on the subjects considered: proportional *numbers* and proportional *lines* alternate for different reasons. This first impression is justified. After all, there is not a proper, broader kind to which numbers, lines, and other magnitudes belong as species to a genus, nor is there a genuine kind-term to designate it and serve as the minor term in the demonstration (see *APo.* I 5, 74a20–1). Nevertheless, it would be wrong to think that

proportional numbers or proportional lines alternate *qua* numbers or *qua* lines, with their respective, exclusive causes. As Hasper (2006: 262–9; 2019) puts it, Aristotle believes there is a common, open description such as "quantities of type X", where X is a variable for different types of quantity in different scientific domains. If so, a single cause exists if numbers and lines are treated "as if in a kind" (ὡς ἐν γένει), i.e. not *qua* numbers or *qua* lines but *qua* having such-and-such a ratio (ᾗ δ' ἔχον αὔξησιν τοιανδί) (see *APo.* I 5, 74a17–24; I 24, 85a36–b1). Thus, the alternation of proportionals is similar to the leaf-shedding example, introduced earlier. Just as there is a unifying cause for all instances of leaf-shedding – because there is a genus to which it belongs as a commensurately universal attribute, namely, broad-leafed plant – so too there is a unifying cause for all cases of alternation of proportionals. The difference between the two examples is that there is a kind-term that is proper to a particular scientific domain (botany) and that is co-extensive with leaf-shedding (broad-leafed plant), whereas for the alternation of proportionals there is only a description that designates different kinds in different scientific domains, which makes it harder for us to see that there is a universal explanation.

In the second case discussed in the passage, a scientist realises that what appears at first to be the same attribute admitting different causes turns out to be different attributes sharing the same name, i.e. a case of homonymy. For example, the reason that two shapes are similar is that their sides are proportional and their angles equal, while the cause of two colours being similar is the perception being the same (99a11–5). One might seek a common cause for shapes and colours without realising that similarity does not have a universal cause and, therefore, is not a genuine kind with its own distinctive essence. The reason for this mistaken impression is that in ordinary language there is a single name for different attributes. Although we use the term "similar" to vaguely describe items that somehow resemble one another, when it comes to providing scientific explanations, there is not one but several attributes to be explained (shape similarity and colour similarity). Therefore, although we have "the same" attribute admitting different causes depending on the subjects under consideration (and the answer to Q3 is affirmative), the attribute is the same only by homonymy. Considered in another way, we have two different attributes, each with its own unique cause. This reading is confirmed by Aristotle's claim that the middle term is the definition of the major term. If "similarity" designated the exact same attribute when predicated of shape and colour, and if it were demonstrated through different middle terms in each case, the exact same attribute would have two (equally correct) definitions and, therefore, two different essences. Since the exact same thing cannot have two essences, "similarity" must designate not one but two different attributes, each with its own essence. In fact, since in *per se* demonstrations the middle term is the definition of the major, it is reasonable to conclude that homonymy is a feature of any major term that is a demonstrable attribute of several subjects without being a commensurately universal attribute of any genus that encompasses these subjects.[16]

Aristotle describes the kind of sameness and unity we find in the causes of these sorts of attributes by saying that "the middle term will be similar" (99a5).

He means that if two distinct subjects S¹ and S² are P *by homonymy* (in the conclusions), their respective middle terms M¹ and M² will be P *by homonymy* as well (in the respective major premises). Similarly, if S¹ and S² are P *as if in a kind* (in the conclusions), M¹ and M² will be P *as if in a kind* as well (in the respective major premises). Therefore, whenever an *explanandum* is inquired into *per se* and not incidentally, there will be some sameness and unity in the cause: either in a straightforward way, as in broad-leafed plants shedding their leaves or triangles having 2R, or in a more complex way, as in cases of homonymy or ones that are "as if in a kind".

3. Demonstrating an Attribute of a Genus and Its Species: *APo*. II 17, 99a16–29

After sketching his initial answer to the question of multiple demonstration, Aristotle presents his answer (ii) to Q3:

> T3 [a] The cause, that of which [it is] the cause, and that for which [it is] the cause follow one another, as follows. Taking [things] case by case, that of which [it is] the cause extends further. For example, having external [angles] equal to four [right angles] extends further than triangle and rectangle, but extends equally to them all (for they are as many as have external [angles] equal to four [right angles]). And the middle term is similar. And the middle term is the account of the first extreme, which is why all the sciences come about through definition. [b] For example, leaf-shedding follows vine and at the same time exceeds it, and [it follows] fig [and at the same time] exceeds it; but it does not [exceed] all of them, but is equal [to them]. [c] And if you take the primary middle term, it is the account of leaf-shedding. For there will be at first a middle term for the others, that all are such and such; then [there will be] a middle term for this, that the sap coagulates or something else of that sort. What is leaf-shedding? The coagulation of the sap at the connection of the seed.[17]
>
> (99a16–29)

We focus on the example of leaf-shedding, but our interpretation also holds for the passage's first example, external angles equal to four right angles, and for any other demonstrable attribute that is a commensurately universal attribute of a genus that encompasses several species. Our main proposal is that Aristotle presents not just one demonstration of leaf-shedding but three demonstrations, where one of these forms a series with each of the other two.[18]

We begin with T3b, where we think Aristotle presents the following:

Syllogism 1a

Leaf-shedding belongs to all broad-leafed plant
Broad-leafed plant belongs to all fig tree
Leaf-shedding belongs to all fig tree

Syllogism 1b

Leaf-shedding belongs to all broad-leafed plant
<u>Broad-leafed plant belongs to all vine</u>
Leaf-shedding belongs to all vine

We have two reasons for supposing that "broad-leafed plant" is the middle term. The first is that in *APo.* II 16 (98b5–10) Aristotle presents Syllogism 1b and calls it a "demonstration". The second is the phrase "a middle term for the others, that all are such and such" in T3c (99a26–7). The phrase "such and such" is a place-holder for something essential to each subject – in our view, the genus of which each is a species.[19] Aristotle's claim is that since fig tree and vine are species of the genus broad-leafed plant of which leaf-shedding is a commensurately universal attribute, leaf-shedding belongs to each species because it is a broad-leafed plant. As we have seen, he presents the same account in *APo.* I 5 (see also II 14), where he argues that 2R belongs to each species of triangle (isosceles, scalene, etc.) *qua* triangle (74a16–b4). As we discussed, it is crucial to Aristotle's account that there is a single cause of the fact that leaf-shedding belongs to these two distinct subjects, "fig tree" and "vine": their genus, "broad-leafed plant". This is not a case in which we have different, exclusive causes of the same attribute for different subjects. We return to this point in the following.

In T3c Aristotle mentions "the primary middle term", which "is the account of leaf-shedding", and "a middle term for this, that the sap coagulates". These phrases describe the same middle term: "coagulation of sap". This is confirmed by the final lines of T3, where Aristotle says that coagulation of sap is what leaf-shedding is, picking up his claim that "the primary middle term . . . is the account of leaf-shedding". Since "broad-leafed plant" is the middle term in the demonstrations of leaf-shedding for vine and fig tree, "coagulation of sap" must be the middle in a demonstration of leaf-shedding for a different subject, namely, broad-leafed plant.[20] Evidence for this is the phrase "a middle term for this, that the sap coagulates". "This" refers back to the immediately preceding phrase, "a middle term in the other direction, that all are such and such". That is, "this" refers to the middle term "broad-leafed plant". The middle term for "broad-leafed plant" connects either the major term ("leaf-shedding") to "broad-leafed plant" or the latter to the minor term ("vine" or "fig tree"). In other words, when Aristotle claims that there is "a middle term for this", he means either that the major premise of Syllogisms 1a and 1b is demonstrable or that the minor premises are demonstrable. However, the minor premises are indemonstrable, for a genus is predicated essentially and indemonstrably of each of its species. Aristotle, then, must mean that the major premise is demonstrable: there is a middle term for "Leaf-shedding belongs to all broad-leafed plant".[21] Since this middle term is "coagulation of sap", he must have in mind the following:

Syllogism 2

Leaf-shedding belongs to all coagulation of sap
<u>Coagulation of sap belongs to all broad-leafed plant</u>
Leaf-shedding belongs to all broad-leafed plant

Syllogism 2 forms a series of demonstrations with each of Syllogism 1a and 1b (its conclusion is their major premise).[22] The crucial point is this. Here we have a case of the same attribute (leaf-shedding) belonging to distinct subjects (vine and fig tree, on the one hand, and broad-leafed plant, on the other) because of different causes (broad-leafed plant and coagulation of sap, respectively). That is, we have an affirmative answer to Q3. However, these causes are links in a single line of explanation: vines and fig trees shed their leaves because they are broad-leafed plants, which shed their leaves because their sap coagulates. That is, we have answer (ii) to Q3. Therefore, the relationship between Syllogisms 1a/1b and Syllogism 2 is different from the relationship between the two demonstrations of longevity examined further here and any other case of homonymy (answer (iii) to Q3). For in the latter case there is no single line of explanation linking the different demonstrations.

   We can understand the sequence of middle terms Aristotle discusses in T3c in the following way.[23] He has in mind a chain of universal "a" predications:

AaBaCaD

A: leaf-shedding
B: coagulation of sap
C: broad-leafed plant
D: fig tree

In the phrase "there will be at first a middle term for the others", "the others" are the species of broad-leafed plant, such as vine and fig tree. To demonstrate leaf-shedding (A) of one of these subjects, e.g. fig tree (D), we look for the term nearest to it: broad-leafed plant (C).[24] To demonstrate leaf-shedding of our new subject, broad-leafed plant, we select the term nearest to it: coagulation of sap (B). Thus, this chain of predications gives rise to two demonstrations: A of D through C (= Syllogism 1a) and A of C through B (= Syllogism 2). In the following we argue that it also gives rise to a third demonstration: B of D through C (= Syllogism 4a). We also argue that we are not permitted to demonstrate A of D through B. Therefore, this chain of predications gives rise to exactly three demonstrations.

   In T3a Aristotle remarks on the extensional relations at play in Syllogisms 1a, 1b, and 2. Leaf-shedding extends beyond each species of the genus broad-leafed plant but not beyond the genus itself, making it a commensurately universal attribute of the genus. He adds that the middle term, which is a definitional account of the demonstrable attribute, is "similar". This means that the middle term in Syllogism 2, "coagulation of sap", extends beyond each species of the genus but not beyond the genus itself, making it too a commensurately universal attribute of the genus. If leaf-shedding is a commensurately universal attribute of coagulation of sap, then Syllogism 2 is a demonstration made up of three universal propositions in which all the terms are co-extensive with each other.

4. Demonstrating a Homonymous Attribute: *APo*. II 17, 99a30–b7

The next part of *APo*. II 17 marks a shift in Aristotle's discussion: he presents answer (iii) to Q3. He returns to the case, already discussed in 99a11–5, where a homonymous attribute belongs to different subjects because of different, exclusive causes. The example he offers is longevity, which belongs to all birds because they have dry bodies and to all quadrupeds because they lack bile (99b5–7). Aristotle does not argue that there are such cases of multiple demonstration. Rather, he assumes that there are such cases and then argues for several claims about the extensional relations between the terms involved in them. Three central claims emerge from his discussion. In a scenario in which there are different demonstrations of a homonymous attribute for different subjects through different, exclusive causes, the following hold true:

1 In each demonstration, the middle and minor terms are co-extensive.[25]
2 In each demonstration, the major term extends beyond the middle term.
3 The minor term of any one demonstration among the different demonstrations is not co-extensive with the middle term of any of the other demonstrations.

We divide the passage into two parts. In the first (99a30–7, T4), Aristotle advances 1 and 2. In the second (99a37–b7, T5), he advances 3.
   He begins:

T4 [a] In the following way one will show [this] in the figures to those seeking the interrelation of the cause and that of which it is the cause. [b] Let A belong to all B, and B to each of the Ds, and to extend beyond them. Thus B would [belong] universally to the Ds. For I call this universal, that with which it does not convert; but a primary universal [I call] that with which each does not convert but [with which] all of them convert and extend alongside. [c] For the Ds, the cause of A is B. Therefore, it's necessary that A extend alongside (παρεκτείνειν) beyond B.[26] Otherwise, why will this be the cause rather than that?

(99a30–7)

We think that several assumptions are needed to understand Aristotle's discussion. First, we take the Ds introduced in T4b to be species of the genus D, not individuals.[27] Second, when he says that "B would [belong] universally to the Ds", we take him to mean that while B extends beyond each species of D taken individually (as he states in the previous sentence), it is co-extensive with all the Ds taken collectively, i.e. with the genus D. Evidence for this is the fact that he immediately goes on to distinguish between two types of universal predication. In the first, X belongs to all Y and extends beyond Y. In the second, X belongs to all Y and does not extend beyond Y; X and Y are co-extensive. He claims that B's relation to each species of D exemplifies the first type of universal predication. There would be little point in identifying the second type if B's relation to the genus D did not exemplify it. Furthermore, as we argue here, this assumption is necessary for making sense of Aristotle's inference in

T4c. So we assume that B and D are co-extensive. Since he states in T4c that B is the cause of A for D, it follows that in this demonstration, the middle and minor terms are co-extensive. As we noted, we take this to be one of Aristotle's main claims about multiple demonstrations of the sort he discusses in this part of *APo.* II 17: in each demonstration the middle and minor terms are co-extensive.

Our final assumption about T4 is that (as we have already indicated) A stands for a homonymous attribute that belongs to different subjects because of different, exclusive causes – e.g. longevity, which belongs to birds and quadrupeds because of dryness and lack of bile, respectively. This assumption is also needed to make sense of Aristotle's inference, and it is confirmed by the sequel to T4 (99a37–b7, T5), as we will soon see. The two passages taken together give two demonstrations:

A belongs to all B   A belongs to all C
B belongs to all D   C belongs to all E
A belongs to all D   A belongs to all E

Drawing on 99b4–7 (T5e) we suggest that the terms can take the following values:

A: longevity
B: dryness
C: lack of bile
D: bird
E: quadruped

Longevity belongs to all dryness   Longevity belongs to all lack of bile
Dryness belongs to all bird   Lack of bile belongs to all quadruped
Longevity belongs to all bird   Longevity belongs to all quadruped

With these claims in place, we can make sense of T4c, which has puzzled commentators.[28] Aristotle says that B is the cause of A for D and infers from this that A extends beyond B. We think that A extends beyond B for two reasons: first (his explicit reason), B is the cause of A for D; second (his implicit reason), C is the cause of A for E, where C is a cause different from and exclusive of B, and E is a subject distinct from D. If A did not extend beyond B, then it would not be a homonymous attribute belonging to different subjects because of different, exclusive causes, contrary to Aristotle's assumption. For example, longevity extends beyond dryness for two reasons: dryness is the cause of longevity for birds and longevity belongs to quadrupeds because of lack of bile. If longevity did not extend beyond dryness (i.e. if they were co-extensive), then it could well be the case that dryness is the cause of longevity not only for birds but also for quadrupeds, contrary to Aristotle's assumption. This gives us the second of the three main claims we noted: in a case of multiple demonstration such as the one he assumes in this part of *APo.* II 17, in each demonstration, the major term extends beyond the middle term. Again, Aristotle is not arguing that there are such cases of homonymous attributes belonging

to distinct subjects because of different, exclusive causes. He is assuming that there are such cases and analysing the extensional relations between the relevant terms.

At this point one might ask, on our interpretation, how is the fact that B is the cause of A for D relevant to the fact that A extends beyond B? This is the only reason Aristotle offers, so it is important that we clarify its relevance. We do so as follows. If B were not the cause of A for D, then it would not matter whether or not A extends beyond B. Suppose that B is not the cause of A for D and that A and B are co-extensive. In that case, it is possible that A belongs to some other subject E because of some cause C, which is what Aristotle wants. That is, if B were not the cause of A's belonging to D, then the fact that A and B are co-extensive would be no obstacle to A's belonging to E because of C. The scenario that poses a problem for Aristotle is the one in which A and B are co-extensive and B *is* the cause of A for D. For in that case, B could well be the cause of A for both D and E, in which case A would not belong to different subjects because of different, exclusive causes (it would belong to different subjects because of the *same* cause), contrary to Aristotle's assumption. For example, if longevity and dryness were co-extensive and dryness were the cause of longevity for birds, then dryness could also be the cause of longevity for quadrupeds, contrary to Aristotle's assumption. So the fact that B is the cause of A for D is relevant to the fact that A extends beyond B. Our claim is that this is not the only relevant fact. It is also relevant that A belongs to a different subject E because of a cause C that excludes B.

T4 ends with Aristotle stating that if the attribute A did not extend beyond the cause B, "why will this [i.e. B] be the cause rather than that [i.e. A]"? In other words, if A did not extend beyond B but was instead co-extensive with it, then we would have no way of knowing which of the following two syllogisms is genuinely explanatory (i.e. a demonstration):

A belongs to all B	B belongs to all A
B belongs to all D	A belongs to all D
A belongs to all D	B belongs to all D

Barnes finds this claim vexing: "Could Aristotle have written this without gloss or apology, immediately after writing 99a21 (which says that AaB *must* convert) and 98b19–24 (which explains how we should discriminate between the two candidate demonstrations)?" (1994: 256). We think that Aristotle's claim is consistent with these other passages, if it is understood epistemically, calling our attention to the difficulty of knowing, for two co-extensive attributes, which is the cause of the other.[29] Recall the present scenario: B belongs to all D and is co-extensive with it, B is the cause of A for D, and A belongs to all B and extends beyond it (and thus beyond D). He now imagines that A does not extend beyond B but is co-extensive with it. This creates a new scenario: A and B are co-extensive and belong to all D with which they are also co-extensive. Now A is no longer a homonymous attribute that belongs to different subjects because of different, exclusive causes. In this new scenario, we no longer know and must now investigate whether B is the cause of A

for D or vice versa. Pace Barnes, Aristotle is not denying that the major and middle terms of a demonstration can be co-extensive. Rather, he is claiming, correctly, that if all we know about two terms A and B is that they are co-extensive, then we do not know, and must investigate, which of the two is the cause and which is the effect for some subject D with which they are also co-extensive.

In the sequel to T4, Aristotle continues to investigate the extensional relations between the terms in multiple demonstrations of a homonymous attribute for different subjects:

T5 [a] If A belongs to all the Es, then all those things will be some one thing different from B. [b] For otherwise, how will it be possible to say that A belongs to everything to which E belongs, but E does not belong to everything to which A belongs? [c] For why won't there be a cause such as there is for the fact that A belongs to all the Ds? [d] But will the Es be some one thing? It's necessary to investigate this. Let them be C. [e] It is possible, then, for there to be multiple causes of the same thing, but not for items same in form. For example, the cause [of being] long-lived for four-footed animals is their not having bile, whereas for birds it is their being dry or some other thing.

(99a37–b7)

In T5a–d, Aristotle presents the second of the two "longevity" demonstrations we introduced earlier:

A belongs to all B   A belongs to all C
B belongs to all D   C belongs to all E
A belongs to all D   A belongs to all E

A: longevity
B: dryness
C: lack of bile
D: bird
E: quadruped

Let us first focus on T5a–b. If A belongs to all E, then E must be something different from B. We take this to mean that if A belongs to all E and E is a subject distinct from D (the subject of the first "longevity" demonstration), then it is not possible that B and E are co-extensive. For example, if longevity belongs to all quadrupeds, which are different from birds, then it is not possible that dryness (the cause of longevity for birds) and quadrupeds are co-extensive.

To see why, suppose that B and E are co-extensive and that A belongs to all E. Now recall that in the previous passage (T4), Aristotle had said that A must extend beyond B, if B is the cause of A for D. The explanation we offered was that, in addition to A's belonging to D because of B, A must also belong to some subject distinct from D, namely, E, because of some cause distinct from B, namely, C, given that A is a homonymous attribute. However, if B and E are co-extensive, then the

reason for asserting that A must extend beyond B evaporates. Here it is important to remember that B and D are co-extensive. Since B and E are also co-extensive (our assumption for *reductio* purposes), it follows that D and E are co-extensive. Now if A belongs to all E, but D and E are co-extensive and B is the cause of A's belonging to D, then it could well be that B is also the cause of A's belonging to E. This is just what Aristotle says in T5c: "For why won't there be a cause such as there is for the fact that A belongs to all the Ds?" This means if B and E are co-extensive, implying that D and E are co-extensive, then the cause of A's belonging to E could well be the same as the cause of A's belonging to D, namely, B.

This sets up the final, crucial move. We have just seen that if B and E are co-extensive, then B could well be the cause of A's belonging to E. In this new scenario, it is possible that A and B are co-extensive: it is no longer necessary that A extends beyond B. In the previous scenario, it was necessary that A extends beyond B in order for it to belong to a subject distinct from D (namely, E) because of a cause distinct from B (namely, C). However, these considerations are no longer relevant in the new scenario in which D and E are co-extensive (as a result of the fact that B and E are co-extensive). But if, in the new scenario, it is possible that A and B are co-extensive and B and E are co-extensive, then it is possible that A and E are co-extensive. This is just what Aristotle says in T5b: if it is not the case that B and E are not co-extensive (i.e. if B and E are co-extensive), then it is possible that A and E are co-extensive. However, it is not possible that A and E are co-extensive. Rather, A must belong to all E and extend beyond it because A is a homonymous attribute that belongs to different subjects because of different, exclusive causes. So A must belong to all E without being co-extensive with it in order for it to belong to the distinct subject D. To achieve this result, Aristotle states in T5b that B and E cannot be co-extensive. For, again, if they were, then it is possible that A and E are co-extensive. This, then, is Aristotle's conclusion: if A is to belong to all E and E is to be a subject distinct from D (to which A also belongs), then B (the cause of A for D) and E cannot be co-extensive. For A to belong to all E as a subject distinct from D, there must be a cause distinct from B. In T5d this turns out to be C.

To illustrate Aristotle's reasoning, let us take his example in T5e. Suppose that longevity belongs to all quadrupeds and suppose (for *reductio* purposes) that dryness and quadruped are co-extensive. Now we assumed previously that dryness and bird are co-extensive. It follows (absurdly, of course) that quadruped and bird are co-extensive. If quadruped and bird are co-extensive and dryness is the cause of longevity for birds, then dryness could well be the cause of longevity for quadrupeds. In that case, it is not necessary that longevity extends beyond dryness: it is possible that the two are co-extensive. But if dryness and quadruped are co-extensive and it is possible that longevity and dryness are co-extensive, then it is possible that longevity and quadruped are co-extensive. So if longevity is to belong to quadrupeds as a subject distinct from birds, which is Aristotle's assumption, then quadruped and dryness cannot be co-extensive. For longevity to belong to quadrupeds as a subject distinct from birds, there must be a cause distinct from dryness. In T5e this turns out to be lack of bile.

In sum, T5 gives us the third claim we identified earlier. In a case of multiple demonstration of the sort Aristotle discusses in this part of *APo.* II 17, the minor term of any one demonstration among these multiple demonstrations is not co-extensive with the middle term of any of the other demonstrations. T5 thus contributes to the task of identifying some of the extensional relations that hold between the terms in a case of multiple demonstration where the demonstrable attribute is homonymous.[30]

5.   Demonstrating an Attribute of a Genus and Its Species, Revisited: *APo.* II 18

In Section 3 we argued that Aristotle presents the following demonstrations, where Syllogism 2 forms a series with each of 1a and 1b:

Syllogism 2

Leaf-shedding belongs to all coagulation of sap
Coagulation of sap belongs to all broad-leafed plant
Leaf-shedding belongs to all broad-leafed plant

Syllogism 1a

Leaf-shedding belongs to all broad-leafed plant
Broad-leafed plant belongs to all fig tree
Leaf-shedding belongs to all fig tree

Syllogism 1b

Leaf-shedding belongs to all broad-leafed plant
Broad-leafed plant belongs to all vine
Leaf-shedding belongs to all vine

One might infer from Aristotle's discussion in *APo.* II 17 that he also regards the following as demonstrations:

Syllogism 3a

Leaf-shedding belongs to all coagulation of sap
Coagulation of sap belongs to all fig tree
Leaf-shedding belongs to all fig tree

Syllogism 3b

Leaf-shedding belongs to all coagulation of sap
Coagulation of sap belongs to all vine
Leaf-shedding belongs to all vine

After all, since vines and fig trees shed their leaves because they are broad-leafed plants, which shed their leaves because their sap coagulates, it surely follows that vines and fig trees shed their leaves because their sap coagulates. In our view, Aristotle agrees with this inference: coagulation of sap is the underlying causal process responsible for leaf-shedding in vines and fig trees. However, it does not follow that he regards Syllogisms 3a and 3b as demonstrations. Indeed, we believe that he denies that they are demonstrations. We now argue that he gives his reasons for doing so in *APo*. II 18.[31]

Here is the full chapter:

T6 [a] If [the causes] do not immediately arrive at what is atomic and there is not one middle term but several, then the causes too are several. [b] Which of the middle terms is the cause for the particulars, the one that is first relative to the universal or the one that is first relative to the particular? Clearly, the one nearest to each thing for which it is the cause. [c] For this [e.g. broad-leafed plant] is the cause of the fact that the first thing [e.g. fig tree] falls under the universal [cause, e.g., coagulation of sap]. [d] E.g., C is the cause for D of B's belonging to it. And so C is the cause for D of A's [belonging to it], B [is the cause] for C of A's [belonging to it], and B itself [is the cause of A's belonging to it].

(99b7–13)

We propose that in T6a Aristotle re-introduces his answer (ii) to Q3, which we examined in Section 3:

Q3: Can the same major term admit of different, exclusive explanatory middle terms for different minor terms?

Answer: (ii) Yes, if one of the minor terms designates a species and the other designates a genus to which the species belongs and of which the major term is a commensurately universal attribute.

Suppose we have two demonstrations:

A belongs to all C   A belongs to all C
C belongs to all D   C belongs to all E
A belongs to all D   A belongs to all E

Here the causes "do not arrive at what is atomic".[32] This means that the major premises are demonstrable:

A belongs to all B
B belongs to all C
A belongs to all C

Therefore, there are different demonstrations of A with different middle terms (B and C), meaning that the causes of A are "several". This is the same situation we find with

Syllogisms 1a, 1b, and 2. On our reading, then, T6a returns us to 99a16–29 (T3) and reminds us of the kind of demonstrative series we find with Syllogisms 1a, 1b, and 2.

Next, in T6b by "particulars" Aristotle means species, such as fig tree and vine, and by "universal" he means the genus of which they are members, such as broad-leafed plant. His question in T6b is, when we are demonstrating that an attribute of a genus belongs to its species, which of two candidate middle terms is the proper one: (1) the one that is "first relative to" and "nearest to" the genus or (2) the one that is "first relative to" and "nearest to" the species? In our example, the middle term nearest to the genus is "coagulation of sap". The middle term nearest to the species is "broad-leafed plant". His answer is (2), "broad-leafed plant". His claim is that we demonstrate an attribute such as leaf-shedding of a species such as fig tree through the genus (broad-leafed plant) and *not* through the cause of the attribute belonging to the genus (coagulation of sap).

Aristotle has in mind the chain of predications and the corresponding demonstrations that we introduced in Section 3:

AaBaCaD

A: leaf-shedding
B: coagulation of sap
C: broad-leafed plant
D: fig tree

In T6b he claims that when we are demonstrating A of D, we are to select as a middle term the term nearest to D, namely, C. We are not to select B. Indeed, he implies that C and *not* B is the cause of A's belonging to D. We should not take this to mean that Aristotle denies that coagulation of sap is the underlying causal process responsible for leaf-shedding in fig trees. We should rather take it to mean that we are not permitted to demonstrate leaf-shedding of fig trees through coagulation of sap. For in doing so we inappropriately skip the middle term that is nearest to D, namely, C. Syllogisms 3a and 3b are not legitimate demonstrations.

This is a striking claim. In T6c Aristotle justifies it: the cause (coagulation of sap) of the attribute (leaf-shedding) belonging to the genus (broad-leafed plant) belongs to the species (fig tree) because of the genus. This implies that it is not the case that the genus belongs to the species because of the cause. Fig tree undergoes sap-coagulation *because* it is a broad-leafed plant; it is not the case that it is a broad-leafed plant *because* it undergoes sap-coagulation. Therefore, with respect to fig tree, broad-leafed plant enjoys causal priority over sap-coagulation. This suggests that the following are demonstrations:

Syllogism 4a

Coagulation of sap belongs all broad-leafed plant
Broad-leafed plant belongs to all fig tree
Coagulation of sap belongs to all fig tree

Syllogism 4b

Coagulation of sap belongs all broad-leafed plant
Broad-leafed plant belongs to all vine
Coagulation of sap belongs to all vine

Since these are genuinely explanatory syllogisms, it follows, in his view, that when we are demonstrating that leaf-shedding belongs to fig tree or vine, "broad-leafed plant" and not "coagulation of sap" is the appropriate middle term. That is, his acceptance of Syllogisms 4a and 4b as demonstrations suggests that he rejects Syllogisms 3a and 3b as demonstrations in favour of the demonstrative series comprising Syllogisms 1a and 2 and 1b and 2. The problem with Syllogisms 3a and 3b is that they falsely suggest that e.g. fig trees undergo sap-coagulation *qua* fig trees and thus undergo leaf-shedding *qua* fig trees, whereas in fact they undergo sap-coagulation *qua* broad-leafed plants (Syllogism 4a) and thus undergo leaf-shedding *qua* broad-leafed plants (Syllogism 1a). Aristotle, then, is committed to the following principle:

> Genus-Species: If P is a commensurately universal attribute of a genus G, then if "P belongs to all M, M belongs to all G, P belongs to all G" is a demonstration, then for any species S^n of G, "P belongs to all G, G belongs to all S^n, P belongs to all S^n" is a demonstration and "P belongs to all M, M belongs to all S^n, P belongs to all S^n" is not a demonstration.

This principle bears directly on the central question of *APo.* II 17–8: can there be multiple demonstrations of the same attribute? Aristotle's claim is that if P is a commensurately universal and demonstrable attribute of a genus G encompassing several species $S^1, \ldots S^n$, then not only *can* we have distinct causes of P for these different subjects (G on the one hand and $S^1, \ldots S^n$ on the other), we *must*. However, as we argued earlier, the causes, while distinct, form a single line of explanation represented in a demonstrative series.[33]

This interpretation is confirmed by T6d, where we get the following three syllogisms (in this order):

1	2	3
B belongs to all C	A belongs to all C	A belongs to all B
C belongs to all D	C belongs to all D	B belongs to all C
B belongs to all D	A belongs to all D	A belongs to all C

It is important to note that these syllogisms are demonstrations: he says in each case that the middle term is "the cause". These are precisely the three demonstrations to which the chain of predications gives rise:

AaBaCaD

A: leaf-shedding
B: coagulation of sap

C: broad-leafed plant
D: fig tree

Column 3 demonstrates leaf-shedding of its proper subject, broad-leafed plant, through the cause, sap-coagulation. Thus, it is identical to Syllogism 2:

(A) Leaf-shedding belongs to all (B) coagulation of sap
(B) Coagulation of sap belongs to all (C) broad-leafed plant
(A) Leaf-shedding belongs to all (C) broad-leafed plant

Column 2 demonstrates leaf-shedding of fig tree through the cause, broad-leafed plant. Thus, it is identical to Syllogism 1a:

(A) Leaf-shedding belongs to all (C) broad-leafed plant
(C) Broad-leafed plant belongs to all (D) fig tree
(A) Leaf-shedding belongs to all (D) fig tree

Column 1 demonstrates sap-coagulation of fig tree through the cause, broad-leafed plant. Thus, it is identical to Syllogism 4a:

(B) Coagulation of sap belongs all (C) broad-leafed plant
(C) Broad-leafed plant belongs to all (D) fig tree
(B) Coagulation of sap belongs to all (D) fig tree

Our proposal, again, is that Syllogism 4a is Aristotle's way of justifying his view that the proper way to demonstrate leaf-shedding of fig tree is through the demonstrative series comprising Syllogisms 1a and 2 rather than through Syllogism 3a. Now, as we mentioned, Aristotle accepts that fig trees undergo sap coagulation and that this is the underlying causal process responsible for leaf-shedding in them. His claim is that fig trees undergo sap coagulation because of some further (in fact, essential) feature: their being broad-leafed plants. Fig trees undergo sap coagulation *qua* broad-leafed plants. Therefore, they undergo leaf-shedding *qua* broad-leafed plants. Broad-leafed plant is thus the appropriate cause of their shedding leaves.

Conclusion

We have argued that the question of multiple demonstration can be interpreted in at least three different ways: Q1, Q2, and Q3. The most complex version of the question is Q3, and Aristotle's answer to it depends on whether (1) the different minor terms are species of a genus to which the major belongs as a commensurately universal attribute ("no"), (2) one of the minor terms is the relevant genus and the other is one of its species ("yes"), or (3) the minor terms are not members of such a genus ("yes").

We would like to highlight two specific results of our interpretation. First, texts such as *APo.* II 17, 99a16–29 (T3) and *APo.* II 18 (T6) are explained by Aristotle's

commitment to Genus-Species. Some interpreters might think that his reason for accepting this principle is purely taxonomic: Syllogisms 1a and 1b would be mere classificatory inferences, meant to upgrade scientific problems by formulating them at the proper level of generality – not surprisingly, they are sometimes called "application arguments".[34] Against this view, we have argued that Aristotle's motivation for endorsing Genus-Species involves explanatory concerns. Syllogisms 1a and 1b take into account a fundamental part of the causal process, which Syllogisms 3a and 3b ignore: vines and fig trees shed their leaves because they are broad-leafed plants. Second, we have tried to show that 99a30–b7 (T4–5) does not contradict Aristotle's "official" answer to Q3 in 99a1–5 (T1). In demonstrations of attributes such as longevity or similarity, the major term extends beyond the middle and minor terms because it is homonymous, i.e. it designates different attributes, each with its own distinctive causal definition. If so, the existence of two exclusive middle terms for the same major term does not mean that there are two competing and equally successful explanations of the same scientific phenomenon. We hope these results help mitigate the worries frequently shared by readers of these difficult chapters.[35]

Notes

1 We are grateful to an anonymous referee for calling out attention to this.
2 Lennox's extensive work on *APo*. II 14–8 (1987 [2001, chapter 1]; 2001: chapters 2–3; 2014a; 2021: chapter 2) shows that Aristotle's account of scientific explanation in these chapters is continuous with his account of the stages of scientific inquiry in *APo*. II 1–10. Our approach to *APo*. II 17–8 complements Lennox's interpretation. We think that Aristotle's claims about the structure of demonstrations and the extensional relations among demonstrative terms hold true outside of the context of inquiry: they are features of a finished science. So while Lennox has rightly highlighted the relevance of inquiry, we are concerned with working out the details of what gets discovered in the course of inquiry and finds its place in a finished science.
3 See *APo*. II 11; *Phys*. II 3, 194b16–26; II 7; *PA* I 1, 639b11–21; *Metaph*. V 2, 1013a24–b28.
4 This is the notion of universal (καθόλου) predication, discussed in *APo* I 4–5. A predication "P belongs to S" is "universal" in this special sense if (i) P belongs to every case of S (κατὰ παντὸς), (ii) P belongs to S per se or in itself (καθ᾽ αὑτὸ), and (iii) P belongs to S as such (ᾗ αὐτό), i.e. P belongs to S qua S (*APo*. I 4, 73b26–7). In order to distinguish this particular sense of "καθόλου" from more common meanings of the term, Aristotle sometimes uses the expression "πρῶτον καθόλου" (*APo*. I 5, 74a4–6; II 17, 99a33–5).
5 For a helpful discussion of this issue in the context of Aristotle's theory of "problems" (προβλήματα), see Lennox (2001: chapters 2–3; 2014a; 2021: chapter 2).
6 As we noted, Ferejohn (2013: 147–55) claims that Aristotle presents two "alternative ways of explaining" leaf-shedding (Ferejohn 2013: 149). Ferejohn also rejects attempts to reconcile the two explanations, arguing that there is insufficient textual evidence. One of our aims in this paper is to show that Ferejohn's interpretation is mistaken. For responses to Ferejohn along similar lines, see Bronstein (2016, chapter 3) and Lennox (2014b).
7 As we will see in Section 2, as-if-in-a-kind (ὡς ἐν γένει) demonstranda are an exception to (iii): the different subjects involved are not members of a proper genus, but nonetheless there is a common description that covers them and figures as a minor term in a demonstration with a middle term that covers all instances of the major.

8 This does not mean that if the conclusions are demonstrated per se, the causes are identical. As we argue here, what Aristotle means is that in per se demonstrations of the same attribute for different subjects, if the causes are not identical, they are nonetheless the same in some way, which is compatible with their being different in another way. Thus, Aristotle's claim in T1 is compatible with the view that in some cases the answer to Q3 is affirmative.

9 See e.g. Aquinas *In APo,* lib. 2 l.19 n. 3; Angioni (2016: 95–100). For a different view, see Ross (1949: 669) (cf. Barnes (1994: 254)).

10 See *Phys*. I 8, 191b4–10; cf. II 1,192b23–7; II 3 195a32–b3; *Metaph*. VI 2, 1026b37–102 7a4.

11 2R = interior angles equal to two right angles.

12 This intensional aspect is commonly associated with the "ᾗ αὐτό" clause in *APo*. I 4, 73b26–7. See e.g. Angioni (2012: 50–2; 2018: 179, n. 44); Bronstein (2016: 43–4); Charles (2000: 206–9); Hasper (2006); Kosman (1973: 375–6); Lennox (1987: 90–4); McKirahan (1992: 95–102); Zuppolini (2018b: 130–2).

13 There are aspects of Aristotle's theory of demonstration that suggest that the middle term might be essential to the minor term. On this, see Bronstein's distinction between Model 1 and Model 2 demonstrations (2016: 48–50). See also Ferejohn (2013: 102–55); Zuppolini (2018a).

14 For a systematic discussion of this thesis, see Charles (2000).

15 In 99a6, "εἰ δὲ μή" could be taken either as (1) "if it is not the case that these accidental inquiries are not genuine problems" (= "if they are genuine problems") or as (2) "if we do not inquire incidentally". Ps-Philoponus (*In APo* II, 427.5 Wallies) favours (1). Hasper (2006: 268) seems to have a similar view: "if not" means "if one investigates problems where the proof is not per se". On this reading, in the cases described in 99a5–16, the demonstration is not per se and we do have multiple explanations of the same major term. However, Aristotle is trying to establish that these explanations present a certain unity that is not found in incidental causes. We thus prefer option (2): "if not" means "if we do not study the attribute and the subject incidentally". For this reading, see Aquinas *In APo*, lib. 2 l. 19 n. 3; Barnes (1994: 254); Ross (1949: 669).

16 For a defence of the view that longevity is also a case of homonymy, see Zuppolini (2018a: 253–6).

17 For an important parallel to this passage, see *APo*. I 5, 74a26–33, with Lennox (1987: 91).

18 Here we are in broad agreement with Lennox (1987: 95–7; 2001: 52–3) and Ross (1949: 671).

19 See *APo*. I 10, 76a40 and 76b6.

20 Lennox (1987: 95–7; 2001: 52–3); Ps-Philoponus *In APo* II, 429.32–430.6 Wallies; Ross (1949: 671).

21 Lennox (2014a: 33).

22 See Lennox (1987) for whom Syllogisms 1a and 1b are examples of what he calls "type A" explanations and Syllogism 2 is an example of a "type B" explanation.

23 Ps-Philoponus *In APo* II, 429.32–430.6 Wallies.

24 See Aristotle's use of the expression "nearest" in *APo*. II 18, 99b10 discussed further here.

25 This claim does not fit Aristotle's account of longevity in his biological works. "Absence of bile" and "quadrupeds" are not co-extensive, nor are "dry bodies" and "birds". Additionally, absence of bile is the cause of longevity in quadrupeds and non-quadrupeds (*PA* IV 2, 677a30–b10). As is often the case in the *Posterior Analytics*, Aristotle's example does not match his scientif ic view.

26 At 99a36–7 Ross substitutes ἐπεκτείνειν for παρεκτείνειν, which is found in the manuscripts. We follow Barnes in retaining παρεκτείνειν, which is modified by ἐπὶ πλέον.

27 Ross (1949: 671).

28 See e.g. Barnes (1994: 256).

29 If instead it is understood metaphysically, stating that two co-extensive attributes cannot be such that one is the cause of the other and not vice versa, then Barnes' worry stands and Aristotle's claim seems unintelligible.

30 Our reason for claiming that longevity is homonymous is that it belongs to different subjects because of different, exclusive causes. Since the scientific definition of an attribute is based on its cause, longevity has different scientific definitions, making it homonymous in a scientific sense. An alternative reading is that it is a non-homonymous attribute with a disjunctive scientific definition. We reject this proposal because we think that there is insufficient evidence that Aristotle countenances disjunctive scientific definitions. Note that our view is compatible with the claim that longevity is non-homonymous in an ordinary sense: wherever it appears, it is the attribute of living a long life (relative to other species or to members of the same species). Our claim is that longevity is scientifically homonymous because it is causally disunified. (We are grateful to Marko Malink for discussion here.)

31 Our reading of *APo.* II 18 is in line with the interpretations found in Detel (1993 vol.2: 823, 827); Malink (2020: 120 n88) and Tricot (2012: 237 n4).

32 For this use of "atomic" see *APo.* I 15, 79a33–6; cf. I 17, 81a35–7.

33 According to some scholars (Detel 1997: 84; Hankinson 1998: 160–5; 2019: 485–8; Mignucci 2007: 300), *APo.* II 18 contradicts Aristotle's preference for so-called "universal demonstrations" (discussed in *APo.* I 4–5; I 24 and II 17) and presents a defence of "particular demonstrations" in which (1) the minor term is not the genus to which the major belongs as a commensurately universal attribute but one of its species and (2) the middle term is a feature peculiar to the species, instead of one co-extensive with the genus – e.g. the fact that fig trees shed their leaves would be explained by a middle term peculiar to fig trees. In our view, the middle term of Syllogism 1a is "broad-leafed plant" and, therefore, not something peculiar to fig trees but a universal term that covers all instances of leaf-shedding. Additionally, Syllogism 1a forms a continuous line of explanation with Syllogism 2, which presents the "primary middle term" (99a25) that defines leaf-shedding, namely, "coagulation of sap". Therefore, there is no incompatibility between *APo.* II 18 and Aristotle's preference for universal demonstration.

34 See McKirahan (1992: 177–87); Ferejohn (2013: 122–31). As noted in n. 22, Lennox (1987) calls them "type A" explanations.

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9 Linguistic Theory and Dialectical Rules in the *Topics*

Colin Guthrie King

Introduction

The *Topics* is known as a system of rules for dialectical argumentation. But whence these rules? And why did Aristotle choose these ones for inclusion in his "method" of dialectic?

Perhaps the rules of the *Topics* express, albeit indirectly, a "logical" cannon in Plato's Academy.[1] Certainly many items which will count as rules have a practical character: the τόποι of the *Topics* codify rules in "recipes" of argumentation, i.e. instructions for making particular arguments.[2] As Aristotle's dialectical method is a method for making deductions (συλλογίζεσθαι), we may expect that at least some of these rules – however practical their purpose – will serve to articulate criteria for the validity of the deductions made.[3] In any case, we must understand whence the normative part of the rules comes. That is the purpose of this paper.

An answer to the first question has just been sketched: the rules are selected because they are appropriate, at least *prima facie*, for making deductions. The second question, as to the normative character of (at least some) rules in the *Topics*, will be the main object of concern. The paper has two parts. In the first, I consider the relationship between reflection on language and its role in establishing the logical framework of the *Topics*, in particular the theory of the predicables. The second section concerns pragmatic and semantic aspects of the theory of the predicables in the *Topics*. In the first section I argue that certain rules associated with an exclusive interpretation of the predicables are best understood as rules of control or verification for assertions in dialectical contexts. In the second part of the paper I relate the theory of predicables to semantic and pragmatic features of Aristotle's theory of dialectic. A main upshot of the paper is to show the role of linguistic theory in the *Topics*.

1. Language and the Logical Framework of the Topics

Aristotle conceives the activity of dialectical argumentation in terms of deduction (συλλογισμός), i.e. arguments in which, when certain things are posited, something

other than what is posited results by necessity through what was posited (*Top*. I 1, 100a25–7). Interpreters are generally agreed that deduction in dialectical contexts is the primary object of Aristotle's theory of dialectic in the *Topics*.[4] If we accept this (and I do), then the question becomes: how is deductive validity conceived in the context of Aristotle's theory of dialectic? How do I know when I have been refuted, not only sophistically but dialectically through a deduction? The negative aspect of this latter question, i.e. determining illegitimate refutation and "solving false deduction", is of acute concern in the *Sophistical Refutations* (in particular *SE* 18). There are fewer clear indications in the main books of the *Topics* concerning the criteria for deduction.

We may approach the logical framework of the *Topics* with a view to the task of the dialectician. As Brunschwig has written, the task of the questioner in dialectic is to construct an argument which is "formally constraining" using premises which the answerer cannot refuse and which "logically entail" the contradictory of the answerer's thesis as the conclusion.[5] It would be good to know what is formal here and what is meant by entailment. This is to be sought in the functioning of the τόποι, the means by which the dialectician finds premises which really do entail the desired conclusion.[6] The τόπος helps the dialectician accomplish this task by providing a rule, a construction procedure, and a law. The rule is a rule of verification, which seeks to determine if a certain proposition, *p*, is verifiable given the conclusion-proposition sought, *c*. The construction procedure gives the content of the propositions under consideration, again in departure from the concrete conclusion sought, *c*. The law has the function of introducing a relationship of consequence between *p* and *c*, with the relations under consideration being types of implication. When the dialectician has determined the relevant propositional σχῆμα for the conclusion sought, she may proceed by means of the rule to finding the right propositional *schema* for the premiss. And when this is done, the relevant law articulating the implication relation between the two σχήματα can be identified. Thus, the dialectician will then have the means to establish the conclusion by *modus ponens* if *p* happens to imply *c*, to destroy the conclusion by *modus tollens* if *c* happens to imply *p* (since if *c* implies *p*, by contraposition not-*p* implies not-*c*), or to do either if *p* and *c* imply each other.[7]

This picture of how deduction is accomplished with the resources of the *Topics* is widely shared.[8] One aspect of this interpretation which is often emphasised is that the logical laws in the τόποι express schemes of argumentation.[9] Thus, the logical framework of the *Topics* would be based on a theory of propositional relations.[10] It has been noted that the deductions themselves as they figure in the *Topics* are premiss-conclusion arguments with one premiss.[11] This fits well with the thesis that the warrants or laws of the *Topics* are theses about propositional relations. But it is also noted that such arguments may be "gappy" in the sense that they seem to leave certain necessary premises unexpressed.[12] More recently it has been argued that the approach to deduction in the *Topics* lacks formality precisely because Aristotle is not concerned in a systematic way with missing premises and gapless deductions there, but that he does pursue such concerns systematically in the theory of the syllogistic.[13]

This picture seems clear and basically correct. Still, one would like to understand more precisely how the τόποι relate to the core concept of deductive validity in the *Topics* and its conspicuous logical framework, the predicables. The *topoi* do not in themselves provide standards or tests of validity; they serve rather to conduce the user to construct tests for the truth of a proposition, given some previous conclusion.[14] The theory of the predicables provides the most salient normative component of such tests: Aristotle says, after all, that dialectical premises and problems "refer to" these (*Top*. I 4, 101b17–8). My main interpretive thesis in the following is that linguistic reflection on the constraints of the types of predication identified by the predicables is a source of the verification tests in certain *topoi* of the *Topics*. The purpose of my interpretation is to bring out how the theory of predication in the *Topics* serves to explicate the rules of verification and deduction in dialectic.

I begin with a point from Alexander. Deductions are for Aristotle linguistic items. Aristotle's theory of deduction is concerned with utterances; a deduction is a type of utterance.[15] A primary object of the dialectical theory of deduction is to evaluate utterances with a view to their correctness given the kind of predication they involve.[16] There is precedent for assigning "dialectic" the task of developing linguistic controls, i.e. metalinguistic rules for arbitrating the proper meaning of linguistic expressions. We find such a conception of dialectic's role for example in Plato's *Cratylus* and *Sophist*.[17] Plato's preoccupation in these dialogues with determining the "natural" relation of linguistic expressions for items might seem out of place in the *Topics*, where respect for linguistic convention is recommended (*Top*. II 1, 109a27–33; II 2, 110a14–22). But as we shall see in a moment, Aristotle does not entertain diverging construals of the predicables, and he thinks that it is decidable whether and how they are used in a given context. This is consistent and in fact it is concomitant with the view that predicables serve to control the correctness of predications.

The control function of the predicables is prominent in contexts in which the exclusive construal for the predicables is in evidence. On the exclusive construal of the predicables, each predicable involves a type of predication which is distinct from and exclusive of every other type of predication.[18] On the inclusive construal of the predicables, this is not the case. Thus, if a predicate can be said of a subject, it will qualify as an accident, but it could also qualify as a genus (that would remain to be seen). It has been argued that the exclusive interpretation is the official, but not the operative view in the *Topics*: that most of the core books assume an inclusive interpretation and that the exclusive construal is not well suited to the "original purpose" of the work.[19] But the exclusive interpretation is well motivated. Its purpose as a linguistic control for correctness of a proposition is clear. It occurs in the very first τόπος of the accident, which also introduces linguistic terminology in the explanation of the rules associated with it.

> One first place is to look and see if the answerer gave as accident something which belongs in some other way. This mistake is made most with respect to genera, for example if someone should say [Ex. 1] "it belongs accidentally to

white to be a color". For it is not true that color belongs to white; white's genus is color. Sometimes the answerer will clarify this in his linguistic expression, for example by saying that [Ex. 2] "it belongs accidentally to justice to be a virtue". But oftentimes even without such clarification it becomes clear that he has given the genus as an accident, for example if someone were to say [Ex. 3] "whiteness is a state of having color" or [Ex. 4] "walking is a state of motion". [Rule 1] For the predication of the genus to the species never occurs in a derivative form: all genera are synonymous with their species, i.e. the species take on both the name and the definition of the genera. One who says [Ex. 5] "the white has taken on the state of color" has not given [color as] the genus, nor has he indicated [color] as *proprium* or definition, since he has spoken in a way which indicates a derivation. [Rule 2] For the definition and the *proprium* do not belong to any other thing, whereas many other things have achieved a state of being colored, e.g. wood, stone, a person, or a horse. It is clear, then, that he has given the term as an accident.

(*Top*. II 2, 109a34–b12)[20]

This τόπος, together with some others, gives evidence of the exclusive interpretation.[21] It is not obviously concerned with inference schemes. We have in examples 1–5 several concrete instances of utterance. These utterances serve as illustrative cases in which the speaker has, by virtue of verbal expression, made a certain non-accidental predicate an accident. The use of a specific linguistic formulation, either of a stative perfect or of the verb "belongs accidentally to" (συμβέβηκεν), is construed as sufficient evidence for the speaker's commitment to an accidental predication, where a genus predication is required. Aristotle considers the inverse case of giving the accident as genus in his discussion of the τόποι of the genus (*Top*. II 1, 120b15–20). The sought conclusion in both of these cases is that the speaker has used the wrong type of predication. The rules invoked in this context concern the type of predication involved in the answerer's utterance. Utterances which feature a "derivative" or paronymic type of relation between predicate and subject when the predicate is a genus must be rejected because genus and species are "synonyms", i.e. items which – like animal and human – share a name and a definition.[22] Rule 1 states the reason that such utterances are to be ruled incorrect when they feature genus terms as their predicates: they betray ignorance of the fact that the genus and its species share what might be called a concept. Rule 1 is, in this sense, intensional: human and animal do not represent the same sets of individuals, but human will involve the concept of the animal (in Leibnizian terms: *praedicatum inest subiecto*). Rule 2, by contrast, invokes an extensional criterion for linguistic correctness. The use of formulations involving accidental predication prevents one from featuring a given predicate as a *proprium* or a definition, because these types of predicates are co-extensive with their subjects, whereas accidental predicates are not (if we leave *per se* accidents off to one side).

What kind of rules are Rule 1 and Rule 2? They are not rules of inference. They do not concern the relationship between propositions. They legislate on the type of linguistic expression one uses for certain types of predication. They are rules for both the use and interpretation of language. This

is not further surprising when one considers that, in the *Topics*, the predicables often figure as linguistic items or are closely associated with such items.[23] At least they are defined in reference to linguistic procedures such as predication and signification. The definition (ὅρος) is defined as an account or expression (λόγος) *signifying* (σημαίνων) the essence (τὸ τί ἦν εἶναι) (I 5, 101b38); the property (ἴδιον) is defined as that which does not refer to (δηλοῖ) the essence, even if it belongs uniquely to the item and can be predicated in its place (102a18–9). The genus is defined as something which is predicated in the what-it-is of several items which are different in species (102a31–2); it is the sort of thing which is appropriate to *say* when one is asked what something is (102a32–5). The distinctions made among the predicables involve linguistic notions.

This is compatible with the fact that the predicables are presented as a complete and exhaustive list of what every dialectical problem and premiss "refers to" (δηλοῖ: 101b17–8). In *Top.* I 4 Aristotle considers the items "from which" (ἐκ τίνων) his method for dialectical training is derived. His basic assumption in approaching this matter is that arguments (λόγοι) and deductions (συλλογισμοί) are ultimately "from" (ἐξ) and "about" (περί) the same things and the same number of things, even if arguments are "from" premisses and deductions are "about" problems (101b13–6). This is because every premiss and every problem "refers to" (δηλοῖ) either a property (ἴδιον), a genus (γένος), an accident (συμβεβηκός), or a definition (ὅρος) (101b17–25). This "referring" is further elucidated by a distinction between two different items which the property can signify: the essence (τὸ τί ἦν εἶναι) and property (101b19–23). Aristotle decides to regiment language in this passage and fixes "definition" (ὅρος) as the expression which will signify the essence, whereas property will signify "the rest", i.e. whatever can be counter-predicated with the thing but does not signify its essence.

Let us consider some features of the system of predicables, with a view to their normative aspects.[24] Predicables may be conceived in terms of propositions featuring predications, or as actually predicated items.[25] They are not just what could be predicated but what is predicated.[26] In the architecture of the *Topics*, predicables are the most basic elements; they serve to order τόποι or "places", even if the places concerned with a certain type of predicable (namely, the genus) may feature as "elements". The strategic and pragmatic character of "places" in the *Topics* deserves special emphasis.[27] A τόπος is a storage place for propositional material in order to *attack* a given assertion; it provides material which can be used as a premiss in a deduction to the negation of the assertion.[28] As such, the τόποι are likely the product of the application of the first "instrument" mentioned in *Top.* I 13 and described in I 14, the research and selection of propositions through directed research (I 13, 10522–3; I 14). It is at least quite plausible that the *topoi* were derived from a systematic application of the notion of the predicables to actual argumentation. This would account for why the *Topics* is ordered as it is.

The material stored in the over 300 τόποι of the *Topics* is heterogenous, but a τόπος typically contains an instruction for finding a proposition in order to attack a given assertion, together with a rule or warrant which explicates why the assertion

can be defeated, i.e. shown to be false, from the "place" which the τόπος represents. On Brunschwig's account of the τόποι of the *Topics*, the rule featured is subsumed under a "law".[29] This terminology needs to be treated with care, at least if it is taken to imply a distinction between logical laws and rules which are derivative from them.[30] The logical function of an Aristotelian place is best understood in its role as directing a specific argumentative task that can be accomplished under certain background assumptions given by the predication relations of the predicables. The rules of control make those background assumptions explicit.

Consider a τόπος of the genus which features a further linguistic rule of control.

> [1] See if the species given is true of something of which the genus is not, for example: if what is or what is knowable is posited as genus of what is thinkable. [2] For the thinkable will be predicated of what is not (many things which are not the case are thinkable), but it is clear that what is, or what is knowable, will not be predicated of what is not. [3] So neither what is nor what is knowable are the genus of the thinkable, for it is necessary that the genus is predicated of everything of which the species is predicated.
>
> (*Top*. IV 1, 121a20–6)

Sentence [1] issues an instruction concerning a context in which the species term holds of a given item but the genus term does not. This is illustrated with an example. In the example, the "thinkable" (δοξαστόν) is considered as a species which will hold of "what is not" (τὸ μὴ ὄν). As explained in [2], given such a context, one can argue that "what is" (τὸ ὄν) or "what can be known" (ἐπιστητόν) cannot be genera for "thinkable", since neither of these may be truly predicated of "what is not". In [3], a rule is formulated which covers this particular example and others like it: "it is necessary that the genus is predicated of everything of which the species is predicated". The rule is derived from the practice of division, and concerns the relation of genus and species in a given definition.[31] The normative force of the rule is derived not from a relationship of consequence but from a criterion concerning the correctness of predications in extension. It is a rule for testing the correctness of a statement as a type of predication.

In concluding this part, let us consider how the predicables might control the correctness of concrete statements and how such controls are best characterised in terms of their normative function as "rules". In this connection Jacques Brunschwig made a relevant and useful observation:

> One should in fact emphasize that the predicables do not represent real relations that may obtain between a subject and the properties it possesses, but the intensional relations that may obtain between a subject and the properties that a proposition attributes to it; dialectic has as its formal objects statements about things, and not the things themselves.[32]

"Intensional relations" between a property and subject are relations which we deem to hold in virtue of the meaning of the terms involved. The meaning of a

term determines but is not identical to the term's denotation. Aristotle is aware of the possibility of semantic manipulation of terms in such a way as to undermine the meaning of a proposition as intended by a speaker/hearer. Thus, in *Top*. I 18 the study of the many ways in which something is said is recommended as a control to ensure that "deductions come about not just with regard to the word but to the matter itself" (108a20–2). If it is unclear in how many ways something is said (and thus "meant"), it is possible that answerer and questioner do not "bear their thought" to the same thing (108a22–4). The same thing to which speaker and listener are to bear their thought is not only the object under discussion but the meaning of the assertion under debate. Speaker's meaning – and in particular answerer's meaning – is normative for dialectical argumentation:

> If it has been made clear in how many ways something is said and someone posits something in bearing thought to some one of these, the questioner would appear ridiculous if he did not effect his argument with a view to this.
>
> (I 18, 108a24–6)

The theory of meaning in the *Topics* reinforces the regulative function of the rules. We will return to the relation between meaning and rules in a moment.

The framework of the predicables has as its ultimate object a privileged type of predication relation, that of the definition to its *definiendum*. Even if dialecticians in Aristotle's time did not attempt to deduce definitions (as stated in a passing remark in *Top*. VII 3, 153a7–11), the predicables themselves are defined with a view to the definition. This is supported by the order in which they are introduced in *Top*. I 5 (namely, definition, property, genus, and accident).[33] This is connected with the historical context of Aristotle's theory of predicables and predication: both are informed by practices of definition and division in the Academy.[34] Noting the Platonic provenance of Aristotle's theory of the predicables as a "regressive inquiry into the conditions of a definition", Brunschwig observed that the inquiry concerning definition would eventually lead to a wider study of predication:

> Aristotle in fact recognized that the act of defining is a complex one, decomposable into more simple elements; in his effort to reduce this complex act to laws, he was thus led to make inquiry into the laws which govern the elementary acts of which the complex one was composed, the most general of these laws being the ones which govern the most simple acts, i.e. predication pure and simple. The logic of definition thus led to a logic of predication.[35]

Brunschwig's manner of expression – with "laws" (*lois*) governing "acts" – suggests that Aristotle's task in the *Topics* is to determine logical axioms for the evaluation of predicative assertions.[36] But in the search for linguistic rules, it seems rather that actual assertions are the object of analysis in the τόποι and that rules for the evaluation of assertions are extracted from these. The difference lies in the direction of research which is in fact suggested by the first ὄργανον in *Top*. I 15: first, we

assemble linguistic evidence in the form of propositions, then we find the relevant rules which govern these statements in their respective contexts.

The difference between speaking of "rules" or of "laws" is significant. Some interpreters posit that the *Topics* contain certain non-analytic (i.e. non-syllogistic, pre-*Analytics*) laws which Aristotle continued to recognise as valid, notwithstanding Aristotle's completeness claims for his theory in the *Prior Analytics*.[37] This would imply that Aristotle hit upon some laws while listing a series of rules which are formally valid in the sense that they govern valid deductions in contexts delimited, say, by the relevant predicable under discussion. But we misunderstand the aim and objective of the *Topics* in this way. The linguistic items which are the predicables and the assertions which can be truly made featuring them seem to have been the original objects of dialectical investigation in this work. But they are not presented as abstracted from all context in the manner of "propositional content". The study of the predicables relies on examples of linguistic behaviour in dialectical contexts. This is not a trivial feature of the character of Aristotle's theorising in the *Topics*. The collection of utterances is indicative of linguistic theory. This theory informs the dialectical approach to deduction and is a salient feature of Aristotle's theory of dialectic. This theory takes utterances in context and applies the linguistic theory through rules of control. The rules which are sought for such statements are best understood not as "first order" laws but "metalinguistic" rules, i.e. rules about the use of language.[38]

In the next section I will seek to explain how such metalinguistic rules are related to a pragmatic approach to utterances and their meanings and how they serve to theorise the argumentative activity of deduction in dialectic.

2.　The Predicables in Application to Inference

Recall how Aristotle collects and orders the predicables, as linguistic items which are interrelated. In doing so Aristotle regiments existing metalinguistic terminology, for example when he restricts the expression "accident" (*Top.* I 5, 102b10–4). As noted by others, it is a feature of the *Topics* that existing concepts and material in use are ordered anew.[39] For example, the ordering of the τόποι according to the predicables to facilitate their study and memorisation has been suggested as "arguably, the primary innovation in Aristotle's exposition of the dialectical art".[40]

The innovation is not just expository or didactic. The distinction between the predicables "is the product of a methodical analysis of the conditions which a definition must satisfy".[41] The four "methods" are each based on conditions relevant to each predicable. In order to understand the status of the logical rules which underlie these tests, it is important to get a firmer grasp on the nature of the conditions which they operationalise. Here I will explore the interpretation that these are semantic and pragmatic conditions, tests, and rules. But it is first necessary to explain how the terms "semantic" and "pragmatic" can be applied to the theory of the *Topics*.[42]

The distinction between pragmatics and semantics has been used in various ways.[43] One way of making the distinction has it that semantics concern the conventional linguistic meaning of utterances or sentences, and pragmatics concern

the ways in which the meaning of an utterance can vary from the meaning of a speaker.[44] Factors which contribute to such variance include the indexicality of certain terms and expressions, ambiguity, vagueness, semantic underdetermination, implicitness, and non-truth-conditional content. Since the use of natural language inevitably involves many expressions which are indexical, pragmatics would have on this version of the distinction a very broad dossier: anything which does not belong to the "propositional content" would be pragmatic. Another way of distinguishing pragmatics from semantics is to refer "what is said" – the propositional content of utterances – to semantics and have pragmatics be the "study of linguistic acts and the contexts in which they are performed".[45] Close to this is the conception of pragmatics as concerned with communicative intentions not completely explicit in the utterances made. This conception of pragmatics was suggested by Grice's influential distinction between "what is said" and "what is implied" in a given utterance. Here, "what is said" refers to the conventional meanings of statements and expressions; what is implied is a further matter, to be reconstructed based on considerations of context, considerations informed by a principle of cooperation between interlocutors and in accordance with certain maxims of conversation that follow from the cooperative principle.[46]

More recent work in pragmatics supports the view that the contextual features and effects of utterances contribute substantially to the content of "what it said", *pace* Grice.[47] An important starting point in this regard was the observation of Strawson that referring is something speakers do, not words; the same holds for assertion.[48] This basic observation about language (which goes for English as for Ancient Greek) is compatible with the view of the concept of proposition as it is expressed in the *Topics*. There, the concept of proposition is implied by Aristotle's distinction between two types of interrogative moves in dialectic that are explicitly characterised in terms of actions of a speaker:

> The problem and the premiss differ in their mode of expression. If someone speaks in this way: "Is it the case that the definition of man is two-footed land animal?", or: "Is it the case that animal is the genus of man?", then a premiss comes about. But if [one says]: "Is the definition of man two-footed land animal, or not?", a problem comes about. And the same for other cases.
>
> (*Top*. I 4, 101b28–33)

This is a pragmatic distinction, a distinction between ways of framing the content of a question. If you present the question as a premiss, you are engaged in one kind of action: you introduce it for acceptance or denial. The answer forms part of the dialogue record, i.e. what the argument is "from" (101b15–6). If you present a question as a problem, you present it as the object of discussion and invite the interlocutor to take a position on what will be the issue in question, i.e. what the argument is "about" (101b16). The pragmatic distinction between problem and premiss gives rise to the properly semantic (i.e. truth-conditional) conception of a proposition as the item which is the object of acceptance or denial. Aristotle articulates elsewhere that the dialectical question is an invitation to take one part

of a contradiction (*De int.* 11, 20b22–4). In the *Prior Analytics*, the dialectical question is prefaced by a general definition of the "premiss" (πρότασις) as a statement which affirms or denies something about something (λόγος καταφατικὸς ἢ ἀποφατικός: *APr.* I 1, 24a16; cf. *APo.* I 2, 72a8–10). The notion of πρότασις has here evidently come to take on the wider meaning of any predicative assertion or denial (without the *Topics* distinction of its argumentative use). The specific term for utterances which may be true and false is however the "assertive statement" (λόγος ἀποφαντικός: *Int.* 4, 17a2–3).[49] But even in this wider employment of the term πρότασις, its pragmatic aspect is clear in the marked difference between two different speaker intentions (assertion *or* denial). It has been noted that Aristotle nowhere explicitly raises the question of what bearers of truth and falsehood are.[50] In the *Topics*, the approach to the specific linguistic items which can be bearers of truth and falsehood is conspicuously pragmatic. He is interested in their context of use. Contexts of use are made explicit, as seen in the first topos of the accident, by reference to the appropriate linguistic forms of predication given by each predicable.

This approach to the verification of statements can also be seen as pragmatic. Having distinguished the predicables, Aristotle goes on to emphatically state that dialectical premisses and problems do not all explicitly mention the predicables:

> Let no one assume that each of these [i.e. property, genus, accident, definition] is, said by itself, a premiss or a problem, but rather that premisses and problems come about from these.
>
> (*Top.* I 4, 101b26–8)

How are we to understand the claim that premisses and problems are *from* the predicables? Aristotle states here that he should not be understood as stating that each premiss or problem in dialectic explicitly mentions one of the predicables as such. The qualification that dialectical question-premisses and question-problems are *from* the predicables may be understood as saying that they are presupposed in such discourse. In this case, we could understand this *from* pragmatically. The predicables would then form part of the implicit framework of dialectical discourse. And as the predicables are the proper object of Aristotle's investigation in core books of the *Topics*, this framework would also be central to the conception of Aristotle's investigation of dialectic. But the predicables themselves also have semantic features. The predicables track types of commitments of speakers in dialectical argumentation, and their detection is useful because it activates a series of strategies with associated rules of operation in the appropriate context. The determination of the predicables themselves can be seen as ways of identifying the type of commitment a speaker has made. We may see this in the case of the definition, the compass of the entire system in the *Topics*. The definition is a kind of signifying expression: a formula (λόγος) which signifies the essence, where the essence itself is expressed either by a single word or by a formula, i.e. a phrase (I 5, 101b38–102a1). Aristotle's reason for the claim that there is one and the same

"method" for definitional-type statements is made by appeal to their (refutational) use in argumentation in connection with claims of difference and identity:

> If we are able to argue that [the definition] is the same [as what it is predicated of] and that it is different, then in the same way we shall also be in a good position to attack definitions, for when we have shown that it [*scil.* the definition] is not the same [as that of which it is predicated], we will have destroyed the definition.
>
> <div align="right">(I 5, 102a11–4)</div>

This elucidation of the unity of the "method" of definition is instructive. Once the interlocutor has committed to a definition-type statement, we can use the semantic conditions associated with this type of statement – in the case of the definition, the extensional requirement that the definition be co-extensive with the subject and the non-extensional requirement that the subject be "in" the definition – to refute that statement. Committing to a claim involving a certain type of predicable, as a semantic type, has certain pragmatic consequences which can be exploited. It commits the interlocutor to the semantic constraints associated with this predicable and activates a series of rules which can be used in argumentation against one who is committed to said claim.

The identification and distinction of predicables thus serves as the key for identifying rules which can be applied to someone committed to such a claim. That the other predicables may be used in this way is indicated by the language in defining them. The property is a counter-predicating expression which does not *indicate* (δηλοῖ) the essential part of the essence, for example the property of human beings that they are able to learn grammar (I 5, 102a18–22). A constraint for the invocation of a property in linguistic expression is that the utterance with this feature cannot be used to signify something which can belong to something else – or, if such an expression is used to express a property, it requires further qualification so that it can function as a property (102a22–8). The use of such further qualifications, in such a case, can be considered as a pragmatic indication that someone is using this predicable.

Predications involving the predicable of the genus are a particularly important, *elemental*, linguistic types for dialectical discussions. These discussions, at least on the model assumed in the *Topics*, concern definitions, or are related to them. Thus, predications of the genus-type are used to respond to the question "what is it"? (102a32–4). This is also the point at which the system of predicables intersects with the other main semantic system in the *Topics*, that of the "types of categories" or predication. The first category in *Topics* I 9 is given as the "what-it-is" (103b20–3) – though it is clear from that chapter that predicables can occur in all categories and that, in fact, the "what-it-is" may sometimes mean the essence of the item, sometimes the quality, sometimes the quantity, *et cet.* (103b27–9). The predicable of the genus is involved in predications that indicate a definitional feature which is shared by many things differing in species (102a31–2). As a method, the study of the genus concerns all the tests and rules relevant for determining if two items are

in the same genus, and so it will also concern the marking off of a species from a genus through one or more *differentiae*.

As we have seen, something like the theory of metalinguistic types (a theory of types of linguistic expressions) must have already been alive when Aristotle wrote the *Topics*, for he introduces his terminology by way of appropriation. We see this in the two definitions of the accident cited in *Top*. I 5. On one definition, accident is defined as "that which is neither definition nor property nor genus, but which belongs to the item" (I 5, 102b4–5). This is consistent with an exclusive division of the predicables featured in *Top*. I 8, 103b6–19, on which every proposition belongs to only one type of predication. But the accident also figured as "that which can belong to one and the same item, or not belong to it, for example: being seated can belong to a certain individual, or not" (I 5, 102b6–8). This definition has been taken by some commentators, already in antiquity, to be related to the two-category scheme know in the Early Academy wherein all things were said either "in themselves" (τὰ καθ᾽αὐτά) or "in relation to something else" (τὰ πρός τι).[51]

Interpreting the predicables as semantic-pragmatic types and as the linguistic basis for finding concomitant rules for these types may help us understand fluctuation in the system of the predicables. If we are attacking a certain statement, we might have an interest in interpreting the statement of the interlocutor as one type, namely, the type with which we may most readily refute the thesis. The strategic purpose of refutation will in any case inform our interpretation of the interlocutor's utterances – if destroying the statement is the overriding goal. But if we are constructing a definition, it might be useful to first establish any kind of belonging whatsoever, e.g. the loosest type of belonging: the accident, with a view to the further question of whether the item which may be predicated as a property is truly a definitional type. This will involve a more open interpretation, one typical rather of a constructive kind of argumentation not primarily concerned with refuting claims but testing them. It is quite likely that Aristotle makes reference to just such a type of dialectic in *Top*. VIII 4–6. The *démarche* of the predicables in the *Topics* may be seen not only as one featuring ever more stringent tests for the purpose of refutation but also, from a constructive point of view, as building up from the most basic kind of belonging (the accident) to the most specific type of belonging (the definition).

It has been noted that Aristotle's assertoric syllogistic works only with the relation of "belonging" enriched by a rigorously applied quantificational scheme, whereas the τόποι of the accident include only basic quantification.[52] In particular, Aristotle does not consider in the *Topics* unquantified expressions such as "man is animal" as unquantified. Because of the lack of positive determinations about the relation of "belonging", Aristotle was confronted with the question of whether *p* belonging to *s* would imply, in itself, anything else. In this way he arrived at nonanalytic logical laws such as the law of contraposition: if a belongs to b, then non-b belongs to non-a.[53] But in this domain, too, semantic features of the terms involved cannot be ignored and are even especially prominent in Aristotle's treatment. Some of the very first τόποι of the accident concern semantic features of terms: whether the term involved is being employed in popular usage or not (*Top*. II 2, 110a14–22)

and whether it is used in many senses (*Top*. II 3, 110a23–32). Unlike the asser-
toric syllogistic, which uses only quantification as a semantic enhancement of three
statements relating three terms through a middle term, this is an approach which
makes full use of the semantic features of language to generate implications and to
explore the rules which govern them.

Conclusion

Jacques Brunschwig once employed a developmental conjecture to explain the co-
occurrence of the two interpretations of the predicables. His theory has it that the
inclusive interpretation is the original one, closely tied to the "fundamental pro-
ject" of the *Topics*, and that the exclusive interpretation is characteristic of a later
stage of composition of the *Topics* documented in *Top*. I and early chapters of *Top*.
V.[54] He bases this interpretation in part on the claim that the inclusive interpretation
is more characteristic of dialectic as practiced.[55]

His conjecture is hard to verify or falsify. I have tried instead to show the impor-
tance and argumentative function of the exclusive reading of the predicables. Aristo-
tle extracts, by means of this version of the theory, norms for assertions in dialectic
which enforce certain interpretations on the utterances of the participants. Which in-
terpretation of the utterance we take may depend on what we seek to be doing in the
argument. If our aim is constructive and exploratory, then an inclusive interpretation
of the predicables may be preferable because it permits us to begin with a relation
of belonging and then to specify with tests of increasing specificity how an attribute
belongs. If our aims are refutation or the testing of an existing definition, it will be
useful to apply an exclusive interpretation of the predicables to see if the parts of the
definition are correctly assigned, i.e. to see if what is given as a property is really
a property in the exclusive sense of being co-predicated with the subject while not
being its definition. Thus, in V 3, 131b37–132a9, where an exclusive interpretation
of the property is explicitly in force, the argumentative intention of the arguer is to
refute (ἀνασκευάζοντα, 131b37) and, in particular, to show that the definition has
been given as if it were a property. When the property is given in this way, it is not
"well formulated" (καλῶς κείμενον), because the semantic function of the definition
is to signify the essence, and "the property must not signify the essence" (131b38–
132a1). The exclusive interpretation is thus indicative of a more precise semantics,
one which restricts the meaning of the utterance. This more precise semantics will
be useful for certain critical or peirastic purposes, but perhaps not only for those.

The difference between these two intentions in argumentation is reflected in the
difference between the inclusive and exclusive interpretations of the predicables.
Both interpretations are informed by an understanding of what each predicable
implies when it is interpreted in one of the relevant ways. As a study of *Top*. V has
shown, even here most of the τόποι are open to either the inclusive or the exclusive
interpretation – and thus are useful for both argumentative intentions.[56]

I have argued for a particular reading of the predicables on which they are open
to either interpretation. The decision regarding their interpretation depends in part
upon the type of dialectical procedure one is engaged in, and this in turn informs

the kind of theory sought when exploiting the predicables in order to derive from them rules of implication.

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Notes

1 Hambruch (1904: 21) suggests that Aristotle formulated the rules in the *Topics* in order to prepare his students for debate with members of the Academy, as a "clever application of Academic logic for disputations with Academics". For Hambruch this meant that the *Topics* is to be used as a source of information (albeit a biased one) for such "Academic logic".
2 Brunschwig ([1967] 2009: ix).
3 *Top.* I 1, 100a18–21: "The purpose of the treatise is to discover a method of making deductions about any problem put forward upon the basis of ἔνδοξα, and so that we ourselves, when defending an argument, will not utter anything contradictory".
4 There are two notable outliers. Maier (1900: II 78 n. 3) suggested that Aristotle "discovered" the notion of deduction only later in the course of composing the *Topics*. The view that the theory of dialectic is based on a theory of non-deductive inference was taken up later by Burnyeat (1982). Interpreters in agreement that the main body of the *Topics* is concerned with deductions (i.e. συλλογισμοί) are: Solmsen (1929: 38); Kapp (1942: 12); Brunschwig ([1967] 2009: xxxviii–xlv); Smith (1994: 144–8); Primavesi (1996: 22–6); Rapp (2000); Malink (2015).
5 Brunschwig ([1967] 2009: xxxviii).
6 Brunschwig ([1967] 2009: xxxix): a τόπος is a "machine for generating premisses based upon a given conclusion".
7 Brunschwig ([1967] 2009: xl–xli).
8 Primavesi (1996: 87) *et passim*; Smith (1997: xxviii); Rapp (2000: 22–3); Reinhardt (2000: 18–19).
9 Thus Rapp (2000: 23): "Wichtig ist für die Topoi der *Topik* folgendes: Die allgemeine Regel eines Topos dient als Argumentationsschema. Sie kann gelesen werden als "wenn der Gegner so-und-so zugesteht, dann kann darauf so-und-so deduktiv hergeleitet werden". Rapp's "allgemeine Regel" corresponds here to Brunschwig's "law", not to the instruction rule which constitutes the imperatival part of most τόποι of the *Topics*.
10 This consequence is drawn explicitly in Primavesi (1996: 87–8).
11 Rapp (2000: 24–7).
12 Rapp (2000: 27–8).
13 Malink (2015: 284–97).
14 Allen (1995: 189–90); (Allen 2001: 53).
15 Alexander, *In Top*. 7.15–25 Wallies.
16 Sainati ([1968] 2011: 31, 37, 39–41).
17 *Cratylus* 390c10–e5: the dialectician is the one who knows how to ask and answer, and the establisher of names is a "dialectical man" who looks to the nature of each name and can place its form (εἶδος) into both letters and syllables. *Sophista* 253d1–e5: the dialectician is the one who knows how to discriminate forms (εἴδη) according to their kind or type (γένη). The discussion of Being, Motion, Rest, Same, and Other in *Sophista* 255e8 ff. raises the question how these major kinds can be related through "participation" or predication.

18 This construal of the predicables is in evidence in *Top*. I 4, 101b17–25, where we read that "every premiss and problem signifies either a proprium, or a genus, or an accident"; in the definition of the accident as that which is "neither definition nor proprium nor genus" (I 5, 102b4–7); and in the "deduction" by division of the predicables as mutually exclusive types of predication in *Top*. I 8,

19 Brunschwig ([1967] 2009: lxxvi–lxxxiii); Brunschwig 1986.

20 My translation. Text as in Brunschwig ([1967] 2009: 35–6). For a helpful discussion of the τόπος, see Primavesi (1996: 117–21).

21 Brunschwig ([1967] 2009: lxxix n. 3) mentions, in addition to *Top*. II 1, 109b34 and IV 1, 120b21–35, V 3, 131b37–132a9; V 4, 132b35ff., 133a18ff.; V 5, 135a9–19. On V 3, 131b37–132a9, see Reinhardt (2000: 145–51), who suspects this passage as the product of a (not very competent) redactor. I will leave the passages in *Top*. V out of consideration for the moment and focus on *Top*. II and IV.

22 This is a slightly different relation of "synonymy" than that featured in *Cat*. 1, 1a12–5, where the items designated as συνώνυμα are species related to a genus. See Primavesi (1996: 119).

23 Outside the *Topics,* of course, the situation is different. Genus and accident are prominent as terms signifying certain non-linguistic items. For the genus, see e.g. *Metaph*. V 28, 1024a29–b4, where the term is said or applied when there is continuous generation of entities having the same species, and in order to designate types, such as plane and solid as types of figure. This is distinguished from the linguistic sense of the term in which genus figures as the "the first item in definitions, which is said in the what-it-is, and of which the differences are said as qualities" (1024b4–6). For a developmental account of Aristotle's theory of genus and differentia, see Granger (1984). The determination of accident at *Metaph*. V 30, 1025a14–5 as "that which belongs to something and which is true to say, but which is neither necessary nor for the most part" combines both an ontological and linguistic determination.

24 For treatment of the predicables, see Brunschwig ([1967] 2009: lxxvi–lxxxiii and 121–4); Sainati ([1968] 2011: 70–97); Barnes (1970); Ebert (1977) (with a criticism of Brunschwig's interpretation); Brunschwig (1986) (in reply to Ebert 1977); Slomkowski (1997: 69–93); Reinhardt (2000: 25–37), with special attention to the ἴδιον; Schramm (2004: 41–83).

25 We find predicables determined as predicative questions (i.e. propositions or problems) at *Top*. I 4, 101b17–8: "Every proposition and every problem refers either to property or to genus or to accident". When the predicables are introduced in *Top*. I 5, the focus shifts to their role as predicated items, e.g. "Property is that does not refer to the essence, but which belongs (ὑπάρχει) to the item alone and which can serve as predicate in its place" (I 5, 102a18–9).

26 Ebert (1985).

27 The following remarks are limited to the τόποι of the *Topics*. On the τόποι of the *Rhetoric* and their relationship to those of the *Topics*, see Solmsen (1929: 61–2); Rapp (2002: II 270–99).

28 Primavesi (1996: 83–4); Primavesi (1998: 1264).

29 We recall again Brunschwig [1967] 2009: xl–xli) (cited earlier): "Every [place] presents itself as a *rule*, associated with a *procedure of construction*, and founded on a *law*" (Brunschwig's emphasis, my translation). What Brunschwig calls a "rule" is part of what I am calling an instruction.

30 As e.g. in de Pater (1965: 140–3), who maintains that Aristotle's places express "axiological laws" from which certain other places may be derived.

31 de Pater (1965: 167–270) discusses the importance of division for the "common" τόποι in particular.

32 Brunschwig ([1967] 2009: l): "Il faut en effet souligner que les prédicables ne désignent pas les relations réelles qui peuvent s'établir entre un sujet et les propriétés qu'il possède, mais les relations intentionelles qui peuvent s'établir entre un sujet et les propriétés

que une proposition lui attribue; la dialectique a pour objets formels les discours sur les choses, et non ces choses elles-mêmes". See also Smith (1997: xxix).

33 See Brunschwig ([1967] 2009: xxvi), who suggests that the privileged position of the definition with respect to the other predicables is indicated by the fact that it is defined with regard to the essence (τὸ τί ἦν εἶναι), a notion which is itself not further explained in the context of the *Topics*.

34 Solmsen (1929: 153–4).

35 Brunschwig ([1967] 2009: liv): "Aristote a reconnu en effet que l'acte de définir était un acte complexe, décomposable en éléments plus simples; dans son effort pour soumettre à des lois cet acte complexe, il était donc conduit à rechercher aussi les lois qui régissent les actes élémentaires dont il se compose, les plus générales de ces lois étant celles qui régissent le plus simple de ces actes, à savoir la prédication pure et simple. La logique de la définition l'a ainsi conduit à une logique de la prédication".

36 As noted in n. 9, this interpretation was in fact offered by de Pater (1965).

37 Bocheński (1956: 58–9) refers to the "copious rules" of the *Topics* and emphasises that "most" logically relevant formulae in the *Topics* are rules, not laws (106). But he still subsumes his selection of rules from *Top*. II 8, III 6 and IV 4 to *laws* (*Gesetze*) of classes and predicates and laws of relations (105–10). Bocheński adopts a developmental view of such laws as he identifies in the *Topics* and the *Rhetoric* – these are "formulae created at a time before he discovered the analytic syllogism" (102). But this distinction between rule and law is foreign to the *Topics* – unless it is expressed by Aristotle's term κοινόν/κοινά in the sense of an "axiom" (possible in *SE* 11, 172a29, which is classified as such a use in Bonitz (1870: 400a5).

38 See the critical remarks in Sainati ([1968] 2011: 48), on Bocheński's approach to topical rules.

39 As de Pater (1965: 69) puts it, in the domain of dialectic "Aristote n'a pas inventé, mais ordonné".

40 Kakkuri-Knuuttila and Tuominen (2012: 56).

41 Brunschwig ([1967] 2009: xlix).

42 My thanks to an anonymous reader for pressing the need to clarify the distinction and its application to Aristotle's *Topics*.

43 For a helpful summary of various ways of making the distinction, see (Bach 1999) and his chronologically ordered overview (81–2).

44 Bach (1999: 66).

45 Stalnaker (1970: 275).

46 Grice ([1968] 1991: 306–7).

47 See e.g. Recanati (1989); Carston (1999: 108–99).

48 Strawson (1950).

49 Nuchelmans (1973: 32).

50 Crivelli (2004: 45).

51 Against the thesis that this two-category scheme corresponds to the substance/accident distinction in Xenocrates (Granieri 2019).

52 Brunschwig ([1967] 2009: lii–liii); Malink (2015: 278–85).

53 Primavesi (1996) sought to explore the limits and specific features of this "logically most promising" (Brunschwig) approach in his interpretation and commentary of *Top*. II.

54 Brunschwig ([1967] 2009: lxxx–lxxxiii).

55 Brunschwig ([1967] 2009: lxxxii).

56 Reinhardt (2000: 30).

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10 A Trouble-Maker for Translators

The Aristotelian Phrase τὸ τί ἦν εἶναι

Hermann Weidemann

I

To translate ancient philosophical texts in general and to translate philosophical texts written by Aristotle in particular is, as we all know, a troublesome job. What quite often causes trouble to translators of Aristotle's writings is the fact that, although it is sufficiently clear what a certain sentence or phrase literally means, it is unclear what is meant by it, but there are also cases in which it is just the other way round, in which it is not a lack of clarity about what is meant by a certain sentence or phrase that causes trouble but rather a lack of clarity about what the sentence or phrase in question literally means. A case in point is the phrase τὸ τί ἦν εἶναι – τὸ τηε for short – which has been called an "uncouth and obscure phrase" by Emerson Buchanan,[1] a "bizarre expression" by Jonathan Barnes,[2] and even a term which is "untranslatable" by more than one scholar.[3] That in the *Dictionnaire des intraduisibles*, the *Dictionary of Untranslatables*, as the *Vocabulaire européen des philosophies* is subtitled, an entry for the phrase τὸ τηε is to be found is nothing to be surprised about.[4]

Whereas the question what is meant by this phrase is clearly answered by the passages in which it occurs, the answer to the question what it literally means, which is far from obvious, is completely left open. A translator, who is not satisfied with replacing the phrase by a co-extensive phrase or term but is ambitious to render it by an expression which reflects its literal meaning, must take the trouble, therefore, to find out what this meaning is by looking for clues to it and indications of it in the relevant texts. This I shall try to do in this essay, putting the main emphasis on Aristotle's logical writings, his so-called *Organon*.[5]

It is in two treatises of the *Organon* that the phrase τὸ τηε occurs, namely, in the *Topics* (Book I, Chapters 4, 5, and 8; Book V, Chapters 3 and 4; Book VI, Chapters 1, 4, 5, and 8; Book VII, Chapters 3 and 5) and in the *Posterior Analytics* (Book I, Chapters 22 and 33; Book II, Chapters 4, 5, 6, 8, and 11). From the *Topics* we learn that the τηε of something is what its definition signifies (cf. I 5, 101b38; VII 3, 153a15–6; VII 5, 154a31–2), that signifying its τηε is what makes the definition of something differ from ἴδιον-predicates, i.e. predicates which specifically apply to it without defining it (cf. I 4, 101b19–23; I 5, 102a18–9; I 8, 103b7–12; V 3, 131b38–132a9), that an incomplete definition fails to state the τηε of the thing to

be defined (cf. VI 5, 143a17–8; VI 8, 146b31–2), and that both the definition and the τηε of something can syllogistically be demonstrated (cf. VII 3, 153a14–5). That such a demonstration is possible is a thesis which Aristotle extensively dis-cusses in Chapters 3–7 of the second book of the *Posterior Analytics*, coming to the conclusion in Chapter 8 (cf. 93b15–20) that, on the one hand, what something is cannot be demonstrated, but that, on the other hand, without a demonstration, what something is cannot be made plain and intelligible.[6] It is within this discussion that most of the occurrences of the phrase τὸ τηε in the *Posterior Analytics* are to be found. Especially worth mentioning is the beginning of Chapter 6, where the τηε of something is described as that specific property of the thing in question which is composed of all the parts of what it is (cf. 92a7–9).

As for the question what is meant by the phrase τὸ τηε, then, the answer of the relevant *Organon*-texts is unmistakable and straightforward: the τηε of some-thing is its *complete and specific essence* as opposed to its *generic essence*, which it shares with other members of the same genus, on the one hand, and its *non-essential specific properties*, which are peculiar to its species but do not belong to what it is, on the other hand. The τηε of a human being, for example, is what is signified by the ὅρος-predicate (or ὁρισμός-predicate)[7] "two-footed land animal" (*Top*. I 4, 101b30. 32; *Top*. V 3, 132a2) as opposed to the γένος-predicate "animal" (*Top*. I 4, 101b31), on the one hand, and ἴδιον-predicates like "capable of acquiring the ability to read and write" (*Top*. I 5, 102a20. 21–2) or "naturally tame animal" (*Top*. V 1, 128b17–8; V 3, 132a7), on the other hand.[8] It is tempting, therefore, to render the phrase τὸ τηε by expressions which either derive from or are more or less equivalent to the Latin word *essentia*, and there is a host of translators who have resorted to this manoeuvre.[9] Hermann Bonitz, for example, has chosen the rendering "das Wesenswas" ("the essential whatness"), which is a coinage of his own, in his German translation of the *Metaphysics*,[10] and in order to imitate the difference between the two phrases τὸ τί ἐστι and τὸ τηε, the former of which he renders as "l'essence" ("the essence"),[11] Jacques Brunschwig has coined for the latter the expression "l'essentiel de l'essence" ("the essentiality of the essence")[12] in his French translation of the *Topics*.[13] Renderings of this type, another example of which is the artificial expression "la quiddité" ("the quiddity"),[14] which Pierre Aubenque has chosen "faute de mieux",[15] are stopgap solutions of course,[16] and Brunschwig frankly avows: "la traduction que je propose est un pis-aller" ("the translation which I propose is a makeshift").[17]

II

In order to be able to render the phrase τὸ τηε by an expression which is both comprehensible and faithful to the wording of this phrase a translator has to give his answer to the following four questions, each of which concerns one of its four constituent words:

1 What is nominalised by the article τό?
2 What is asked by means of the interrogative pronoun τί?

3 What is indicated by the imperfect ἦν?
4 In what sense of the verb εἰμί is the infinitive εἶναι used?

As Robin Smith rightly remarks, the phrase τὸ τηε "is one of the most heavily discussed of Aristotelian expressions".[18] In the course of the still ongoing discussion which it has provoked a variety of answers has been given to the four questions just mentioned. Instead of reviewing this discussion in all its details, what surely would be too lengthy an enterprise to undertake here, I shall confine myself to performing two tasks: I shall, first, examine and evaluate what is today, as far as I can see, the prevailing view of the syntactical structure and the literal meaning of the phrase and, then, present a new interpretation and translation of it which avoids the shortcomings of this view.

According to the prevailing view, a prominent representative of which is Emerson Buchanan, who has devoted to our phrase two chapters of his book on Aristotle's theory of being,[19] the first three of the aforementioned four questions are to be answered as follows:

1 What the article τό nominalises is not the infinitive εἶναι, but the question "τί ἦν εἶναι;".
2 What is asked by means of the interrogative pronoun τί is not the question what the thing is whose τηε is at issue but the question what the being of this thing is.
3 What the imperfect ἦν indicates is nothing more than that an answer to the question which is introduced by the interrogative pronoun τί has already been given.

The first and the third of these three answers are certainly correct. As for the article τό, if the infinitive εἶναι were nominalised by it, τί ἦν would have to be regarded as an interposed question of its own, with the effect that the whole phrase would have a rather queer syntactical structure, which would make it literally mean "the – what was it? – being", the interrogative sentence "what was it?" being inserted as a parenthesis. Grammatically difficult to swallow and risky though it is, this interpretation has been defended by Friedrich Bassenge[20] and Charles Kahn,[21] both of whom object to the rival interpretation, which takes the question "τί ἦν εἶναι;" to be nominalised by the article τό, that it presupposes a second τό before εἶναι, the omission of which, they claim, cannot be explained.[22]

Hardly sufficient is the explanation offered by Buchanan, who suggests: "The τὸ before εἶναι is omitted in τὸ τί ἦν εἶναι, one may suppose, in order to avoid an awkward repetition".[23] The "systematic omission of the second τό"[24] would be justified, of course, if the infinitive εἶναι were to be understood as the sort of infinitive called "epexegetical or final" by Kahn,[25] as Schmitz and, independently of him, Courtine and Rijksbaron suppose it to be.[26] Being a "potential construction", as Kahn calls it,[27] the construction of εἰμί + infinitive is unlikely, however, to underlie the phrase τὸ τηε, and Kahn himself was well advised not to associate it with this phrase. After all, it is the actual being of a thing, not some being which it is capable of having, that this phrase denotes.[28] The new interpretation which I shall propose will provide a satisfactory solution to the problem of the missing article.

What speaks in favour of the view that it is the question "τί ἦν εἶναι;" and not the infinitive εἶναι that the article τό nominalises is last, but not least, as Françoise Caujolle-Zaslawsky, following Pierre Aubenque,[29] has pointed out,[30] the parallelism between the two expressions τὸ τηε and τὸ τί ἐστι, which is reflected in Aristotle's aforementioned description of the τηε as that specific property of a thing which is composed of all the parts of its τί ἐστι (cf. *APo*. II 6, 92a7–9). Since τὸ τί ἐστι is a nominalised question, τὸ τηε can fairly and squarely be assumed to be a nominalised question too.[31]

As for the interrogative pronoun τί, the question what is asked by means of it is unsatisfactorily answered both by the defenders of the prevailing view, who take the infinitive εἶναι to be the subject of the nominalised question "τί ἦν εἶναι;", and by their opponents, who take this infinitive to be the subject of the interposed question "τί ἦν;".[32] The reason why it is unsatisfactory to treat εἶναι as the subject of the question which is introduced by τί simply is this: When Aristotle coined the phrase τὸ τηε, he obviously started from the Socratic τί ἐστι question, which he tried to transform in such a way that the question resulting from the transformation revealed both its connection with and its difference from the original one. But to ask the question "τί ἐστι;" is simply to ask what such and such a *thing* is, so that, if to ask the question "τί ἦν εἶναι;" were to ask what *the being* of such and such a thing is, the connection of the latter question with the former would be extremely tenuous, not to say lost. "Aside from τὸ τί ἐστι, with its Platonic tone", we read in the *Dictionary of Untranslatables*,

> Aristotle coined another expression whose purpose was to designate εἶδος, in the specific technical sense of *species* and not γένος. Employing the grammatical model of the substantivized phrase τὸ τί ἐστι, he took care to adapt it to his own purposes.[33]

How close the connection between the two expressions is can be gathered from the fact that Aristotle frequently uses the phrase τὸ τί ἐστι, which normally has a wider range of application than the phrase τὸ τηε, in a narrower sense in which it is equivalent to it. A telling example of this use is his formulation of the thesis that the essence of something can be demonstrated syllogistically. While in the *Topics*, where he endorses it, he formulates this thesis using for essence the phrase τὸ τηε (cf. VII 3, 153a14–5), in the *Posterior Analytics*, where he rejects it, his expression for essence is τὸ τί ἐστι (cf. II 8, 93b16–7). In the same manner, when formulating the thesis that the definition of something is a phrase which signifies its essence, he uses for essence τὸ τηε in the *Topics* (cf. I 5, 101b38; VII 3, 153a15–6; VII 5, 154a31–2) and τὸ τί ἐστι in the *Posterior Analytics* (cf. II 3, 90b3–4, 91a1; II 10, 93b29, 94a11–4. 16–7). As Charles Kahn has pointed out, on any reading of the phrase τὸ τηε in which it "ceases to be a natural transformation of the τὸ τί ἐστι formula [. . .]", "the frequent equivalence of the two expressions for essence becomes difficult to understand".[34]

Kahn, who rightly regards the τὸ τηε formula as "a natural transformation of the τὸ τί ἐστι formula" and also rightly thinks that it would cease to be that if the two

questions of which these formulae are nominalisations had different subjects, er-roneously, to my mind, believes that on his reading of the τὸ τηε formula as literally meaning "the being-what-it-is"[35] they have the same subject. If the phrase τὸ τηε really meant "the being-what-it-is", it would hardly be appropriate to paraphrase its meaning, as Kahn with regard to a given thing *x* does, as "the being [for *x*] as determined by its definition, by what we have formulated in answer to the question *what is it?*".[36] To speak of the being-what-it-is of *x* in a sense in which it is not the being of *x*, but *x* itself that "it" refers to goes against the grain.[37] In the light of the new interpretation which I shall propose the τὸ τηε formula satisfies the expecta-tion that the τί contained in it corresponds to the τί of the τὸ τί ἐστι formula in a straightforward and natural way.

As for the imperfect ἦν, to take it as what is usually called a "philosophical im-perfect", and what would perhaps better be called a backward-referring imperfect, is the most natural way to take it. This use of the imperfect tense is, as Bassenge aptly describes it, "an elliptical tense attraction" ("eine elliptische *attractio tempo-ris*")[38] to the effect that "was", for example, is used as an abbreviation for "is, as has already been stated (or, already been shown)".[39] According to this interpretation of the imperfect ἦν, which is, as Buchanan says in so many words, "recommended by the fairly frequent occurrence of the 'philosophical imperfect' (i.e. the imperfect with backward reference) in other contexts",[40] the phrase τὸ τηε designates the es-sential being of a thing as specified by a definition already agreed upon.[41]

As for the last word of the phrase τὸ τηε, the defenders of the prevailing view are divided on the question whether it is used *predicatively* as a *copulative* εἶναι or *absolutely* as an *existential* εἶναι. Those who answer this question in favour of the former alternative, as, for example, Michael Frede and Günther Patzig do, take the phrase τὸ τηε to be an abridgment or a condensation of expressions like τὸ τί ἦν ἀνθρώπῳ ἀνθρώπῳ εἶναι ("the what-it-was-for-a-man-to-be-a-man").[42] To this interpretation Buchanan has raised the objection: "if Aristotle always thought of the dative as doubled, he would have been likely to write it thus once in a while; but τὸ τί ἦν ἀνθρώπῳ εἶναι ἀνθρώπῳ seems never to occur".[43]

Buchanan is far from denying, of course, that expressions with two datives are ever to be found in Aristotle's writings. "The closest example", he writes, "and ap-parently the only one with τί ἦν, is τί ἦν αὐτῷ τὸ αἵματι εἶναι ('what it was for it to be blood,' *De Part. An*. II.3 [649b 22]). [. . .] The same construction", he adds, "appears twice in the first chapter of the *Categories*, but with ἐστιν instead of ἦν: τί ἐστιν αὐτῶν ἑκατέρῳ τὸ ζῴῳ εἶναι (1a, 5 and 11)".[44] Attention is drawn by him also to a third example: "τοῦτο γὰρ ἦν αὐτῷ τὸ χρώματι εἶναι (*De Anima* II.7 [419a 9–10])".[45]

It is worth noting that between the three real examples adduced by Buchanan and the fictitious one, on the pattern of which Frede and Patzig take the phrase τὸ τηε to have been coined, there is an important difference: the infinitive εἶναι, which is combined with the second dative, has the article τό prefixed to it in the real ex-amples, while in the fictitious one it lacks this article. This difference is important because expressions like those which are formed of the last three words of the real examples, i.e. expressions like τὸ αἵματι εἶναι, τὸ ζῴῳ εἶναι, and τὸ χρώματι

εἶναι, are often used by Aristotle, especially in the so-called substance-books of the *Metaphysics* (Z, H, Θ), to refer to special instances of what the phrase τὸ τηε denotes in general.

In the *Organon* I have found two examples of these "dative-expressions", as Bassenge calls them,[46] namely, the expression τὸ εἶναι ἀνθρώπῳ in the *Topics* (V 4, 133b34–5)[47] and the expression τὸ εἶναι ἐκείνῳ in the *Posterior Analytics* (II 6, 92a9). In the case of the former expression, which is preceded by the words οὐ ταὐτὸν γάρ ἐστιν ἀνθρώπῳ τε (133b34), it may be wondered whether it is due to the preceding ἀνθρώπῳ that τὸ εἶναι ἀνθρώπῳ is used instead of τὸ εἶναι ἄνθρωπον. That is to say, the use of this expression might well be an application of the rule according to which, to quote Buchanan, "the predicate of an infinitive is regularly in the accusative case, unless there is an expressed subject of the infinitive in the dative to which the predicate is attracted".[48] No such case attraction can be assumed for the expression τὸ εἶναι ἐκείνῳ, however, since in the context of this expression there is no expressed subject whatsoever to which a possible predicate of εἶναι could have been attracted. It is incorrect, therefore, to render this expression, as Jonathan Barnes and Wolfgang Detel do in their translations of the *Posterior Analytics*, as "what it is to be that thing" and "was es heißt, jenes zu sein", respectively.[49] What the expression means is "what it is for that thing to be" (or "what the being of that thing is"). The dative ἐκείνῳ and the infinitive εἶναι are, in other words, related to one another not in such a way that to the latter as a *copula* the former is attached as a *predicative complement*, but in such a way that to the latter as a *verb of existence* the former is attached as a *dative of possession*.

Since in the *Posterior Analytics* the expression τὸ εἶναι ἐκείνῳ is used as an equivalent of the phrase τὸ τηε, which there, as mentioned earlier, is taken to denote that specific property of something which is composed of all the parts of what it is (cf. *APo.* II 6, 92a7–9), the εἶναι in this phrase, too, must be an existential εἶναι. The equivalence of both phrases and, consequently, the existential use of εἶναι in each of them is further shown by the fact that in the *Metaphysics* instead of τὸ εἶναι ἐκείνῳ Aristotle uses the expression τὸ τί ἦν ἐκείνῳ εἶναι (VII 6, 1031b7), of which τὸ εἶναι ἐκείνῳ obviously is an abbreviated form. This example is by no means the proverbial single swallow which does not make a summer, for it has a close parallel in the expression τὸ ἑκάστῳ εἶναι, which in the *Metaphysics* occurs twice in this form (VII 6, 1032a5–6; X 2, 1054a18–9) and five times, if we disregard a passage where the probably corrupt reading ἕκαστον of the manuscripts has been emended to ἑκάστῳ by Bonitz and to ἑκάστου by Ross (VII 4, 1029b14),[50] in the expanded form τὸ τί ἦν εἶναι ἑκάστῳ (I 7, 988b4–5; V 17, 1022a9; V 18, 1022a26; VII 4, 1029b20. 25–6). Nowhere does the context allow us to explain the dative ἑκάστῳ, instead of taking it as a dative of possession, as resulting from a case attraction. What τὸ ἑκάστῳ εἶναι means is not "what it is to be each thing" but rather "what it is for each thing to be" (or, "what the being of each thing is").[51] The relationship between the phrase τὸ τηε and the dative-expressions of the two types τὸ ἑκάστῳ εἶναι, on the one hand, and τὸ τί ἦν εἶναι ἑκάστῳ, on the other hand, seems to be such that the phrase τὸ τηε and the simple dative-expressions of the former type are differently abbreviated descendants of the expanded dative-expressions of the

latter type.[52] In the *Topics* and the *Posterior Analytics*, as examples of this type of expression, the phrases τὸ τί ἦν εἶναι τῷ ὁριζομένῳ (*Top*. VI 1, 139a33–4; VI 4, 141b23–4), τὸ τί ἦν εἶναι τῷ πράγματι (*Top*. VII 3, 153a15–6; cf. *APo*. II 8, 93a12–3), and τὸ τί ἦν εἶναι ἑκατέρῳ (*APo*. I 33, 89a32) are to be found.

Jonathan Barnes, who renders the phrase τὸ τηε, depending on the context in which it occurs, as "what it is to be a thing", "what it is to be something", or "what it is to be it",[53] tries to justify this translation as follows:

> The literal translation of this bizarre expression is "the what was to be?"; hence "the answer to the question 'What was to be?'", and so, for short, "what was to be". The past tense here is a Greek idiom that does not go over into English; thus we get to "what is to be". Several passages indicate that this is elliptical for "what, for so-and-so, it is to be such and such" [. . .].[54]

Which passages exactly he has in mind, Barnes does not tell us, but should he have in mind the few passages, in which two datives are related to one another in such a way that, like in the passage *PA* II 3, 649b22 (τί ἦν αὐτῷ τὸ αἵματι εἶναι), "one may be taken as possessive and one as predicative",[55] he would surely back the wrong horse.

It is worth mentioning that in the form in which it is held by Buchanan the prevailing view of what the phrase τὸ τηε literally means was held already in antiquity. Alexander of Aphrodisias, whom Buchanan explicitly acknowledges to have anticipated his interpretation of the phrase,[56] understood it as meaning "the what-for-the-thing-defined-its-being-is" (τὸ τί ἐστι τὸ εἶναι . . . τῷ ὁριστῷ).[57] This understanding is echoed 300 years later in Ammonius' commentary on Aristotle's *De Interpretatione*, in which τί ἦν εἶναι is said to be short for τί ἐστι τῷ πράγματι τὸ εἶναι ("what for the thing its being is", "what it is for the thing to be").[58] My new interpretation and translation of the phrase τὸ τηε, which it is now time to present, will break with this tradition.

III

As far as the article τό and the imperfect ἦν are concerned, I remain on the side of those who hold the prevailing view and, concerning the infinitive εἶναι, I disagree with those representatives of this view only who take it as copulative. It is the interrogative pronoun τί, or, more precisely, the question introduced by this pronoun, concerning which my new interpretation will break fresh ground. Buchanan, with whom I side as far as the words τό, ἦν, and εἶναι are concerned, takes the question introduced by τί to be the question "What was it (for something) to be?" or, in other words, the question "What was the being (of something)?".[59] As I have tried to show, there are two problems which this view is unable to cope with: Firstly, it cannot be explained, on this view, why the infinitive εἶναι lacks an article, given that it is the question "τί ἦν εἶναι;" that the article τό nominalises, and, secondly, we are kept in the dark, on this view, about the connection between the phrase τὸ τηε and the phrase τὸ τί ἐστι.

Both problems are solved at a stroke by the following assumption, which, once it had suggested itself to me, caused the proverbial scales to fall from my eyes: The phrase τὸ τηε is elliptical insofar as after the pronoun τί an additional εἶναι has to be understood. That is to say, that the question "τί ἦν εἶναι;", which is nominal- ised by the article τό, is an abbreviated form of the question "τί εἶναι ἦν εἶναι;", which on its part is a shortened version of the question "τὸ τί εἶναι ἦν τὸ εἶναι;" ("*what* to be was to *be*?"). As the nominalisation of the question which asks, with respect to a given object the τηε of which is at issue, to be what kind of thing it was (or it meant) for it simply to be (i.e. to exist), the phrase τὸ τηε is the general formula for the answer to be given to this question in each case. An appropriate English translation would therefore be "the what-to-be-it-was-to-be" or, given that ἦν ("was") "has no temporal significance",[60] "the what-to-be-it-is-to-be". As a Ger- man translation I suggest, slightly modifying an earlier suggestion, "das Was-zu- sein-es-heißt-zu-sein".[61] Understood in the sense just explained, the phrase τὸ τηε encapsulates an important insight of Aristotle's to which he gives expression in his *Metaphysics* by saying that "to signify what a thing is essentially is to signify that to be is nothing else for it" (τὸ δ' οὐσίαν σημαίνειν ἐστὶν ὅτι οὐκ ἄλλο τι τὸ εἶναι αὐτῷ: *Metaph.* IV 4, 1007a26–7).

Both the construction of the unabridged question "τὸ τί εἶναι ἦν τὸ εἶναι;" and its abbreviation to the question "τί ἦν εἶναι;" fully comply with the rules of Greek grammar and usage. As for the construction of the unabridged question, in Küh- ner and Gerth's Greek grammar attention is drawn to "a most peculiar brevity of expression among the Greeks" of the following sort: "In an interrogative sentence they put between the article and the word belonging to it an interrogative word merging by that means two questions or a question and a subordinate clause into a single question".[62] I confine myself to citing only one of the many instructive ex- amples which Kühner and Gerth, in order to illustrate this usage, adduce, namely the question, mentioned in the first book of Plato's *Res Publica* (332c), "ἡ τίσιν οὖν τί ἀποδιδοῦσα ὀφειλόμενον καὶ προσῆκον τέχνη ἰατρικὴ καλεῖται;" ("the art that renders to which things what thing that is due to and proper for them is called, then, the art of medicine?").

As for the omission of the εἶναι after τί, it can easily be explained as an instance of the well-known figure of speech, called σχῆμα ἀπὸ κοινοῦ by the ancient gram- marians, which Kühner and Gerth describe as obtaining "wherever one or more words can be taken from, or be supplemented from, what precedes or what follows, be it entirely or in part, be it in the same form or in a different one".[63] Gottfried Kiefner, who quotes this description as exemplifying too wide a conception of the σχῆμα ἀπὸ κοινοῦ,[64] defines it himself as "the semantically as well as grammati- cally and syntactically uniform connection of a component part of a sentence with two others".[65] With the σχῆμα ἀπὸ κοινοῦ thus defined Kiefner contrasts the so- called *Versparung* ("saving up"), which according to him differs from it insofar as that component part of a sentence which is uniformly connected with two others is, on the one hand, *placed with the second*, for the placement with which it is "saved up", and is, on the other hand, *only semantically connected with both of the other two* and *syntactically with the second only*.[66] Aristotle seems to be very fond of this

usage, of which I take the saving up of the εἶναι in the question "(τὸ) τί (εἶναι) ἦν (τὸ) εἶναι;" to be a typical example. Let me adduce three other examples two of which I found in *De Interpretatione*.

In *Int.* 9 we read: Ὥστε, ἐπεὶ ὁμοίως οἱ λόγοι ἀληθεῖς ὥσπερ τὰ πράγματα, δῆλον ὅτι ὅσα οὕτως ἔχει ὥστε ὁπότερ᾽ ἔτυχε καὶ τὰ ἐναντία ἐνδέχεσθαι, ἀνάγκη ὁμοίως ἔχειν καὶ τὴν ἀντίφασιν (19a32–5). In this sentence an additional ἔχει has to be understood either in this form after πράγματα or in the form ἔχουσιν after οἱ λόγοι ἀληθεῖς. I propose to translate, therefore, as follows: "So, since with the statements, as far as their truth is concerned, matters stand in the same way as with the things, it is clear that wherever they stand with the things in such a way that these happen as chance has it and that the contrary can happen as well, it is necessary that they stand in the same way with the contradictory statements too".[67]

An additional ἔχει has to be understood also in the following passage from *Int.* 13: Τὸ δὲ ἀναγκαῖον πῶς, ὀπτέον. φανερὸν δὴ ὅτι οὐχ οὕτως ἔχει (22a38). It is after πῶς, where the *Codex Ambrosianus*, which omits it after οὕτως, in fact has it,[68] that ἔχει has to be supplied in thought. The translation I propose is: "With the necessary, however, how matters stand needs to be inspected more closely. Evidently with it they do not stand in this way". Just as the suppressed first ἔχει in these two examples, so the suppressed first εἶναι in the phrase τὸ τηε is saved up, as it were, for its expressed second occurrence.

The third example which I should like to adduce I found in the *Prior Analytics*. In the passage οὔτ᾽ εἰ παντὶ τῷ Γ τὸ Β, οὔτ᾽ εἰ μόνον ὑπάρχει, ἀνάγκη τὸ Α οὐχ ὅτι οὐ παντί, ἀλλ᾽ οὐδ᾽ ὑπάρχειν (*APr.* I 41, 49b21–2), which Robin Smith translates as follows: "then whether B belongs to *every* C, or merely belongs to it, then not only is it not necessary for A to belong to *every* C, but also it is not even necessary for it to belong at all",[69] an additional ὑπάρχει has to be understood both after τὸ Β and after οὐ παντί.

As for the omission of the article τό both before τί and before εἶναι in the abridged question "τί ἦν εἶναι;", it complies with the rule that, whenever a sentence expresses the identity of what an expression *A* refers to with what an expression *B* refers to, *A* and *B* either both have or both lack an article.[70] An Aristotelian example in which *A* and *B* are two infinitival constructions each of which lacks an article is the following sentence, to be found in book Z of the *Metaphysics*: λέγω δ᾽ ὅτι τὸν χαλκὸν στρογγύλον ποιεῖν ἐστιν οὐ τὸ στρογγύλον ἢ τὴν σφαῖραν ποιεῖν ἀλλ᾽ ἕτερόν τι (*Metaph.* VII 8, 1033a32–4). "I mean", David Bostock translates, "that to make the bronze round is not to make the round or the sphere, but something else".[71] Just as in this sentence the article τό is omitted before the two infinitival constructions τὸν χαλκὸν στρογγύλον ποιεῖν ("to make the bronze round") and τὸ στρογγύλον ἢ τὴν σφαῖραν ποιεῖν ("to make the round or the sphere"), it is omitted in the question "τί ἦν εἶναι;", which I take to be a condensed form of the question "τί εἶναι ἦν εἶναι;", before the two infinitival constructions τί εἶναι ("to be what") and εἶναι ("to be").

When I first made my new interpretation of the phrase τὸ τηε public in a contribution to an anthology on the substance-books of the *Metaphysics*,[72] it met, on the one hand, with the approval of an interpreter of book Z and, on the other hand,

with the criticism of a translator of the whole treatise. The approval, for which I am indebted to Ulrich Nortmann,[73] I do not need to comment on. The criticism, however, which was brought forward by Thomas A. Szlezák, according to whom on my analysis of its wording the phrase τὸ τηε "would condense an expression consisting of 10 words to 4 words, thereby dispensing with two of the three syntactically really indispensable articles",[74] must be said to be based on a wrong assumption. Instead of counting the number of words of the unabridged formula τὸ τὸ τί εἶναι ἦν τὸ εἶναι itself, Szlezák has counted the number of words of the Greek equivalent of my paraphrase of this formula, and, as far as the three allegedly indispensable articles are concerned, two of them, namely the second and the third, can in fact, as I have tried to show, be dispensed with.

In a monograph on the phrase τὸ τηε, published in 2012, my proposal has been misrepresented. The author, Pablo Sebastian Aparicio, aims to offer his readers "an alternative interpretation" to what he calls "the formalist interpretation", "un'interpretazione alternativa a quella formalista", as his book is subtitled.[75] In the category "interpretazione formalista", which evidently is his *bête noire*, he also places my interpretation, which he misunderstood, however, as his Italian translation of my German translation of the phrase τὸ τηε reveals. What I had suggested as a German translation was, as already noted, "das Was(-zu-sein-für-etwas)-zu-sein-heißt"[76] ("the what[-to-be]-it-means[-for-something]-to-be"). Misled, as it seems, by the idiomatic German word order into taking the pronoun "was", which is intended as an interrogative pronoun, as a relative one, Aparicio wrongly, not to say nonsensically, rendered my translation as "ciò che [essere per qualcosa] significa essere".[77] Hence, he missed the point of my translation, whose aim it was to convey the idea which seems to have inspired Aristotle to coin the phrase τὸ τηε, namely, the idea that to be what the species of which it is an individual is defined as is for a thing simply to be, i.e. to exist.

IV

Let me conclude by discussing an objection which has been raised against my interpretation of the phrase τὸ τηε by an anonymous referee. Although agreeing with me "that Aristotle thinks that, for a given object X, there will be some predicate Y such that for this object to exist is for it to be Y", the referee doubts "that this is what he can mean by the τί ἦν εἶναι of X or τὸ X+dative εἶναι", justifying his or her doubt by saying:

> Suppose Socrates is both white and musical. Then, according to Aristotle, ὁ λευκός and ὁ μουσικός are the same, but differ in εἶναι, or their εἶναι is different. Aristotle expands on this in *Metaphysics* VII 6 by saying that (on the assumption that Socrates is a primary substance), Socrates is the same as his τί ἦν εἶναι, but ὁ λευκὸς ἄνθρωπος, who is the same as Socrates, is not the same as τὸ λευκῷ ἀνθρώπῳ εἶναι (and ὁ λευκός, who is the same as Socrates, is not the same as τὸ λευκῷ εἶναι). But if the author were right, then since Socrates is the same as the white, the εἶναι belonging to them would also be the

same, and so ὁ λευκὸς ἄνθρωπος would be the same as τὸ λευκῷ ἀνθρώπῳ εἶναι. For this reason I see no alternative to saying that in a phrase like τὸ τί ἦν τῷ X+dative εἶναι or τὸ X+dative εἶναι, "X" is in an intensional context, that Aristotle is talking about being-X, where being-X and being-Y can be different even if the thing which is X and the thing which is Y are the same.

My reply to this objection is as follows: I concede that "in a phrase like τὸ τί ἦν τῷ X+dative εἶναι or τὸ X+dative εἶναι, 'X' is in an intensional context" (i.e. in a context in which it cannot *salva veritate* be replaced by another predicate that is true of the same object), but the reason why this is the case is not that "Aristotle is talking about being-X" but that, according to Aristotle, the τηε of X (= τὸ X+dative εἶναι) is a thing's which is X being what to be is for it, as X, to be. The τηε of a white man (= τὸ λευκῷ ἀνθρώπῳ εἶναι), for example, is a white man's being what to be is for it, as a white man, to be. Let me explain this in connection with the answer given by Aristotle to the question "whether a thing is the same as or different from its τηε" (*Metaph.* VII 6, 1031a15–6).

Concerning this question, the referee writes,

> I would think that, when Aristotle asks in *Metaphysics* VII 6 whether each thing X and its τί ἦν εἶναι are the same (the answer being yes at least if X is a primary substance, no at least if X is a paronymous accident or substance-accident compound like λευκός or λευκὸς ἄνθρωπος), he means "is it the same thing for this thing which is X to exist and for it to be X?"

In my view Aristotle wants the question at issue to be understood rather in the sense "Is the τηε of X the τηε of the *object* that each thing which is X is?", i.e. in the sense "Is, for a thing which is X, to be what to be is for it, as X, to be, the same thing as to be what to be is for it, as the *object* it is, to be?"

If Aristotle's question is understood in this sense, both his claim that, depending on whether "X" is an essential predicate like "man" or "horse" or an accidental predicate like "white (man)" or "big (horse)", a thing which is X and its τηε are the same or not, and his claim that otherwise the τηε of a man and the τηε of a white man would be the same (cf. *Metaph.* VII 6, 1031a19–24) are easily comprehensible. Since it is not in his capacity as a *white* man, but in his capacity as a *man* that a white man exists as the object he is, to be what to be is for him, as a *man*, to exist, but not to be what to be is for him, as a *white* man, to exist is the same thing as to be what to be is for him, as the object he is, to exist; and since the man he is and the white man he is are one and the same object, to be what to be is for him, as a *man*, to exist and to be what to be is for him, as a *white* man, to exist would indeed be the same thing, if it were otherwise. To put it in a nutshell, if not only the τηε of a *man* but also the τηε of a *white* man were the τηε of the object a white man is, the τηε of a man and the τηε of a white man would be the same thing.

Since not every substitution instance of the formula "τὸ X+dative εἶναι" whatsoever designates the τηε of the object that each thing which is X is, but only a substitution instance of this formula which results from substituting for "X" an

essential predicate, only such substitution instances of it designate a genuine τηε. In *Metaphysics* VII 4 Aristotle asks the question whether, if to the word "cloak" the meaning "white man" were attached (cf. 1029b33–4), the being for a cloak would really be a sort of what-to-be-it-is-to-be at all or not: ἀλλὰ τὸ ἱματίῳ εἶναι ἆρά ἐστι τί ἦν εἶναί τι [ἢ] ὅλως; ἢ οὔ; (1030a2–3).[78] The negative answer he wants to be given to this question he justifies by an argument whose conclusion this answer is supposed to be.

Unfortunately, of the two premises of the argument in question, the first has been transmitted in two different readings both of which seem to be corrupt (ὅπερ γὰρ τί ἐστι τὸ τί ἦν εἶναι [A^b], ὅπερ γὰρ τί ἦν εἶναι ἐστὶ τὸ τί ἦν εἶναι [EJ]: 1030 a 3).[79] Since the second premise states that a substance-accident compound like a white man is not "just a such-and-such" (ὅπερ τόδε τι: 1030a4. 5) – i.e. not just that which a thing of such and such a kind is or, for short, not just a thing of such and such a kind[80] –, the statement that the being for a cloak (i.e. the being for a white man) is not really a sort of what-to-be-it-is-to-be can only be inferred as conclusion if the first premise states that a what-to-be-it-is-to-be is a being for just a such-and-such. Thus, what seems to come closest to the original text of this premise is not the reading of A^b, which Hermann Bonitz has emended to ὅπερ γὰρ <τόδε> τι ἔστι τὸ τί ἦν εἶναι[81] ("for *just a such-and-such* is a what-to-be-it-is-to-be"), but the reading of EJ, which should be emended to ὅπερ γὰρ <τῷδέ> τι<νι> εἶναί ἐστι τὸ τί ἦν εἶναι[82] ("for *a being for just a such-and-such* is a what-to-be-it-is-to-be").[83] What this emendation makes Aristotle say fully agrees with his statement that "there is no what-to-be-it-is-to-be for anything that does not belong to one of the species of a genus, but for these alone" (*Met.* VII 4, 1030a11–3).

Notes

1　Buchanan (1962: 30).
2　Barnes (1993: 174).
3　Cf. Ferge (1992: 98 and 142, note 1), Szlezák (2003: xxix).
4　Cf. Courtine and Rijksbaron (2004, 2014).
5　A compilation, based on Bonitz' *Index Aristotelicus*, of the passages of the entire *Corpus Aristotelicum* in which the phrase τὸ τηε occurs is to be found, with short commentaries added, in Aparicio (2012: 57–140).
6　Cf. Barnes (1993: 217, 221), Detel (1993, vol. 2: 564, 625).
7　"Aristotle's usual word for definition in the *Topics* is ὅρος [. . .]", Smith explains (1997: 58), "although he sometimes uses the word ὁρισμός [. . .]. There seems to be no difference in meaning between the two, but it is at least worth noting that ὁρισμός predominates outside the *Topics* and that in the *Analytics* the word ὅρος almost always has the different technical sense 'term'."
8　Unless another translator is named, translations from the Greek are mine.
9　Cf. Ferge (1992: 109), where a lot of examples are adduced.
10　Cf. Bonitz ([1890] 1994: 181, 199, 203).
11　Cf. Brunschwig (1967: 7, 120).
12　Courtine and Rijksbaron (2014: 1137).
13　Cf. Brunschwig (1967: 5, 119–20, 2007: LII, 13, 151).
14　Aubenque (1977: 457, 459, 460).
15　Aubenque (1977: 460).

16 They are, as Caujolle-Zaslawsky rightly remarks, "tout aussi énigmatiques que l'original" (1981: 61).
17 Brunschwig (1967: 120).
18 Smith (1997: 60).
19 Buchanan (1962: chap. 4, 30–9; chap. 5, 40–50).
20 Cf. Bassenge (1960: 202–5, 1963: 512).
21 Cf. Kahn (1978: 275–6, note 60).
22 Cf. Bassenge (1960: 20, 1963: 512), Kahn (1978: 276, note 60).
23 Buchanan (1962: 36, note 18). Cf. Bassenge's remark that to point out a possible need for abbreviation would hardly be a sufficient explanation: "Der Hinweis auf ein etwaiges Bedürfnis zur Abkürzung würde kaum ausreichen" (1960: 20).
24 Kahn (1978: 276, note 60).
25 Kahn (1973: 292; cf. 178: "epexegetical-final infinitive"). See also Schwyzer and Debrunner (1950: 366), and Kühner and Gerth (1904: 10), where among the expressions of which the infinitive without an article can be a complement the following are listed: "die Verben εἰμί, πάρειμι und πέφυκα, wenn sie die Bedeutung haben: *ich bin wozu da*, *ich bin von Natur befähigt, geeignet, habe von Natur die Beschaffenheit* oder *Eigenschaft*"; cited in Courtine and Rijksbaron (2004: 1300–1, 2014: 1135).
26 Cf. Schmitz (1985: 18–19), Courtine and Rijksbaron (2004: 1300–1, 2014: 1135–6).
27 Kahn (1973: 292).
28 Cf. Weidemann (1996: 80–1).
29 Cf. Aubenque (1977: 461–2).
30 Cf. Caujolle-Zaslawsky (1981: 67).
31 "La première formule étant une question substantivée, τὸ τί ἦν εἶναι en serait une également" (Caujolle-Zaslawsky (1981: 67, note 18)).
32 Owens takes τί to be "the subject of the finite verb ἦν, with εἶναι as a predicate infinitive" (1963: 181; cf. 182, note 83). This view, which has been adopted by Ferge without acknowledgement, can scarcely be right; for in the answer to the question which is introduced by τί the expression which replaces τί obviously is a predicate noun, not the subject of ἦν. – Ferge, who extensively draws upon Owens on the borderline between paraphrase and quotation (cf. 1992: 116–9 and 133–4, modelled on Owens (1963: 181–3, note 83; incidentally referred to by Ferge on p. 146, note 69 of p. 115) and Owens (1963: 187, note 88)), obscures his indebtedness to him by expressly referring to him for criticism only (cf. 1992: 128–30).
33 Courtine and Rijksbaron (2014: 1137; cf. 2004: 1302).
34 Kahn (1978: 276, note 60).
35 Kahn (1978: 265).
36 Kahn (1978: 275, note 60).
37 Another mistaken attempt to bring the phrase τὸ τηε into line with the τί ἐστι question, which has rightly been criticised by Hermann Schmitz (cf. 1985: 16, note 25), was made by Erwin Sonderegger (cf. 1983: 34–5) and, following him, Isabel Conde (cf. 1989: 105–6). See Weidemann (1996: 79).
38 Bassenge (1960: 32); cf. Kühner and Gerth (1898: 145–6), Schwyzer and Debrunner (1950: 279–80; referred to by Bassenge).
39 Cf. Bassenge (1960: 26).
40 Buchanan (1962: 33). Bassenge, who also opts for this interpretation, extensively discusses and criticises rival views (cf. 1960: 25–47, 1963: 509, 511); see also Weidemann (1996: 76, note 2).
41 To say that "τὸ τί ἦν εἶναι represents a definition already agreed upon" (Buchanan (1962: 33)) seems to me to be inaccurate.
42 Cf. Frede and Patzig (1988, vol. 1: 19; 1988, vol. 2: 34–5); see also Detel (1993, vol. 2: 387).
43 Buchanan (1962: 37, note 19).

44 Buchanan (1962: 34). Regarding the first example, Buchanan remarks, "Here Bekker's text has the indefinite τι instead of the interrogative τί, but the latter reading seems better" (ibid.). For the passage in question, which is possibly corrupt, cf. Bassenge (1960: 45–7, 1963: 510); see also Aparicio (2012: 82–4).

45 Buchanan (1962: 33, 34).

46 "Dativ-Ausdrücke" (Bassenge (1960: 20, 21; cf. 1963: 509)).

47 This expression is confronted there with the expression τὸ εἶναι ἀνθρώπῳ λευκῷ (133b35–6).

48 Buchanan (1962: 36); cf. Kühner and Gerth (1904: 24–5).

49 Cf. Barnes (1993: 54), Detel (1993, vol. 1: 65). The comma after "heißt" is missing in Detel's translation.

50 Cf. Frede and Patzig (1988, vol. 2: 62).

51 Cf. Buchanan (1962: 37). Bostock, who translates τὸ τί ἦν (ἑκάστῳ) εἶναι as "what being is (for a thing)", pointing out that "the what [it] was (for a thing) to be" is a "more literal rendering" (1994: 86), seems to hold the same view; he does not explicitly tell us, however, whether he wants the εἶναι to be understood as a copulative εἶναι or as an existential one.

52 Cf. Schmitz (1985: 19). See also Weidemann (1996: 84, note 12).

53 Cf. Barnes (1993: 174).

54 Barnes (1993: 174).

55 Buchanan (1962: 36). According to Owens, who retains Bekker's reading τι, in the passage just cited both datives are original datives of possession. "The second dative", he writes (1963: 181, note 83), "should be an original dative, giving the sense 'the Being that belongs to blood,' 'the Being *proper* to blood.' [. . .] The first possessive dative αὐτῷ is the ordinary possessive dative after the copulative ἦν. With the second dative, εἶναι is not copulative, but denotes that which is possessed". As for the phrase τὸ τηε, according to Owens it "regularly governs a Possessive Dative, which restricts the εἶναι to a specific type of Being" (1963: 187), namely, "the 'Being' that is proper to man, to blood, or to whatever else is mentioned in the Dative case" (ibid.). Ferge, who echoes Owens by saying, without referring to him, that in the phrase τὸ τηε the meaning of the εἶναι "has to be restricted to a specific type of being" (1992: 132), rightly denies the "purely copulative use" of this εἶναι but wrongly denies its "absolute existential" use as well (cf. Ferge (1992: 137)).

56 Cf. Buchanan (1962: 36, note 18).

57 Alexander, *In Top.* 42, 2 Wallies; cf. *In Top.* 42, 3–4. 22–3 Wallies.

58 Ammonius, *In Int.* 212, 17–8 Busse.

59 Cf. Buchanan (1962: 37–8). Before my new interpretation occurred to me, I also agreed with Buchanan on this point.

60 Smith (1997: 60).

61 My earlier suggestion was to render τὸ τηε as "das Was(-zu-sein-für-etwas)-zu-sein-heißt" (Weidemann (1996: 82)). For respectively suggesting to me the French translation "le c'est-être-quoi-qu'être" (or "le c'est-être-quoi-que-d'être") and the Italian translation "l'essere-che-cosa-è-essere", I am indebted to Henri Hugonnard-Roche (Paris) and to Paolo Crivelli (Geneva).

62 "Eine höchst eigentümliche Kürze des Ausdrucks bei den Griechen besteht darin, dass *sie in einem Fragsatze zwischen den Artikel und das zu diesem gehörige Wort ein Fragwort setzen* und auf diese Weise zwei Fragen oder eine Frage und einen Nebensatz in Eine Frage verschmelzen" (Kühner and Gerth (1904: 521)).

63 "Die meisten Fälle der Brachylogie beruhen auf der Redefigur, welche die alten Grammatiker σχῆμα ἀπὸ κοινοῦ nennen, die überall da stattfindet, wo ein oder mehrere Wörter ganz oder teilweise in derselben oder in einer anderen Form aus dem Vorhergehenden oder Folgenden entnommen oder ergänzt werden können" (Kühner and Gerth (1904: 560–1; cf. 564: "Ein Wort, welches nur Einmal gesetzt ist, muss zuweilen zweimal gedacht werden" ["A word which has been used only once sometimes has to be imagined occurring twice"])).

64 Cf. Kiefner (1964: 9–10, the quotation being from § 597, 2, not from "§ 451, 3").

65 "Unter dem σχῆμα ἀπὸ κοινοῦ versteht man die sinngemäß wie grammatikalisch-syntaktisch gleichmäßige Beziehung eines Satzgliedes auf zwei andere" (Kiefner (1964: 12)).

66 Cf. Kiefner (1964: 10–14).

67 For the interpretation of the sentence cf. Weidemann (2014b: 295–7).

68 Cf. Weidemann (2014a: 30).

69 Smith (1989: 57).

70 Cf. Kühner and Gerth (1898: 592–3).

71 Bostock (1994: 13).

72 Weidemann (1996; cf. 81–84).

73 Cf. Nortmann (1997: 18–19, 67).

74 Szlezák (2003: xxix, note 36; my translation).

75 In an English abstract, loosely inserted in his book on a separate leaf, Aparicio tells us that according to his "alternative" interpretation "the εἶναι" of the phrase τὸ τηε "refers to the extramental physical being", whereas "the binomial τί ἦν connotes the same determined εἶναι in a categorical form gather by intellect [*sic*; *read*: gathered by the intellect]". I must confess that I cannot see any textual evidence for such an interpretation, and Aparicio himself admits: "Certo, si tratta sempre di congetture quando consideriamo l'importanza dell'intelletto per spiegare il τηε, poiché nei testi del *Corpus* aristotelico [. . .] non compare esplicitamente la relazione diretta del τηε al νοῦς" (2012: 179).

76 Weidemann (1996: 82).

77 Aparicio (2012: 178).

78 The bracketed ἢ has rightly been deleted by modern editors.

79 Aᵇ = Cod. Laurentianus Plut. 87.12 (12th century), E = Cod. Parisinus gr. 1853 (10th century), J = Cod. Vindobonensis phil. gr. 100 (9th century).

80 Unlike an object addressed as a *man*, an object addressed as a *white* man is not *just* a thing of such and such a kind, but a thing of such and such a kind *in such and such a state*. For the meaning of the phrases τόδε τι and ὅπερ τόδε τι see Weidemann (1996: 91–3).

81 Cf. Bonitz (1842: 121). With a different accentuation (ὅπερ γὰρ <τόδε> τί ἐστι τὸ τί ἦν εἶναι) Bonitz' emendation was even found worthy of mention in the LSJ s. v. ὅπερ, II.5.b.

82 It should be noted that ὅπερ τῷδέ τινι εἶναι ("a being for just a such-and-such") is short for τούτῳ ὅπερ τόδε τί ἐστι εἶναι or τῷδέ τινι ὅπερ ἐστὶ εἶναι ("a being for just that which a such-and-such is"). See Weidemann (1996: 97–9).

83 For this emendation, see Weidemann (1982). It was none other than G. E. L. Owen who encouraged me to publish it. In 1979, three years before his sudden death, when I met him personally in Cambridge, I suggested it to him and, being told by him that it had crossed his mind too, I asked him whether he had published it. His reply was "No, publish it first!" My publication of it provoked several objections, however, which I have tried to defend it against in Weidemann (1996; cf. 88–101).

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11 How Do Differentiae Fit into Aristotle's System of Predicables?[1]

António Pedro Mesquita

I

In *Topics* I 4, Aristotle puts forward a fourfold classification system of predication types, traditionally known as predicables, whose governing principles are whether or not the predicate is, in each case, essentially and/or exclusively said of the subject.[2] My aim in this chapter is to discuss the place of διαφοραί, in Aristotle's technical sense, in this system.

There are two good reasons for having this discussion. The first one is that Aristotle is never clear about the place he wanted to assign to διαφοραί within the system of predicables. The second is that a number of his statements on the matter allow for different, and indeed incompatible, interpretations of such a place.

In fact, when Aristotle sets himself to define *ex cathedra* each one of the predicables, he simply does not mention them. On the other hand, when he does mention them in contexts bearing some connection with the doctrine of the predicables, he does not seem to stick to the same view. On the contrary, he appears to adopt different positions in different places: in some programmatic passages of *Topics* I, he treats διαφοραί as essential, "genus-like" (γενική) predicates; elsewhere, in *Topics* V, he seems to regard them as ἴδια, and thus, according to the definition of this predicable, as non-essential yet exclusive predicates of their subjects; finally, in a vast number of texts in the *Topics* and *Metaphysics*, he refers to them as qualifications (ποιά), which, within the framework of the predicables, would make them non-essential and non-exclusive predicates of their subjects, or, in short, accidents.

What I will try to show in what follows is that this ambivalence is merely apparent and that there are good explanations for the hesitation that seems to affect Aristotle's mind in this regard. Aristotle's authorised position on the matter is only one, namely, that within the framework of the predicables, διαφοραί are always to be conceived as essential, "genus-like" predicates; there are contextual justifications for the fact that at some moments they appear to be described otherwise.

Before I proceed, however, two notes on terminology and a more general theoretical point on the scope of this discussion are in order. The first terminological note serves to clarify a translation issue. I will generally use "differentia" for διαφορά, although I can also on occasion use "difference" when I need to display and emphasise the original literal sense of the word. The second note involves an

important conceptual precision. By "differentia", I specifically mean here what medieval philosophers referred to as *differentia constitutiva*, that is to say, differentia as predicate of the species (e.g. two-footed in relation to human), as opposed to the *differentia divisiva*, that is, differentia as predicate of the genus (e.g. terrestrial, aquatic, and winged in relation to animal).

Now to the theoretical point. It is important to make it perfectly clear from the outset that the problem I am here discussing is distinct from the one raised by D. Morrison in his paper on the categorical status of differentiae in the *Organon* (Morrison 1993). The latter concerns the place of differentiae within the system of categories and deals with questions such as the category under which differentiae fall, or whether differentiae must always be in the same category as the things they predicate. The problem I am here considering concerns a different issue, namely, the classification of differentiae within the framework of the predicables, and it has specifically to do with the question of to which of the four predicables should differentiae be assimilated. At one point, however, namely, when Aristotle seems to equate differentiae with qualifications, the overlapping of these terms with the categorical language may lead to an undesirable misunderstanding. It is important, then, to make it quite plain that what is under consideration here is never (as in Morrison's paper) whether differentiae are conceived by Aristotle as items belonging to the category of quality (or to any other category, or to a set of categories, or to none at all) but whether, in the case where differentiae seem to be assimilated by Aristotle to quality, such an assimilation implies that they are then conceived *as accidents*. Quality or qualification is, therefore, always understood here in the strict sense of a type of accidental predicate, whatever the category in which this predicate (and its subject) should more adequately be subsumed. Analogously, to inquire whether differentiae are essential predicates does not have here any categorical implication; in particular, it does not mean to inquire whether differentiae are substances, as opposed to the remaining nine categories, but simply whether they are "an item in the essence" of the subject they predicate, regardless of the category under which they and the subject of which they are predicated are subsumed. With this in mind, let us now proceed.

II

As is well known, Aristotle states in the *Topics* that any predicate that may occur in a premise or a problem falls under, and only under, one of the following types: definition (ὅρος), which is both essentially and exclusively predicated of the subject;[3] genus (γένος), which is essentially but not exclusively predicated of the subject; *proprium*, or distinctive property (ἴδιον),[4] which is exclusively but not essentially predicated of the subject; and accident (συμβεβηκός), which is not essentially nor exclusively predicated of the subject. Tradition called these four types under the general name of "predicables" and I abide by this venerable usage.

Clearly then, differentiae are not, at least explicitly, counted by Aristotle as one of the predicables. And the fact is that, when he successively defines each of them in *Topics* I 5, he never mentions differentiae. However, when he first introduces the

predicables in the treatise, in Chapter I 4, and likewise when he undertakes to prove that there are but four of them in all, and, therefore, that his fourfold classification is exhaustive, in Chapter I 8, Aristotle does make a brief parenthetic reference to differentiae, in both cases assimilating them to the genus. Here is the first passage:[5]

(T1)   Every premise, as well as every problem, exhibits either a distinctive prop-
         erty, a genus or an accident *(the differentia, since it is genus-like* [γενικήν]*,*
         should be classified together with the genus). But since one sort of distinctive
         property signifies the essence and another sort does not, let us divide distinc-
         tive property into both the parts stated, and let us call the sort that signifies
         the essence a definition, while the remaining sort may be referred to as a
         distinctive property, in accordance with the common designation given to
         them. Clearly, then, from what has been said, it turns out that according to
         the present division they are *four in all*: either definition, distinctive property,
         genus, or accident.

And here is the second:[6]

(T2)   One proof that arguments are made from and through the things mentioned
         previously, and are about them, is by means of induction. For if someone were
         to examine each premise or problem, then it would be clear that it had arisen
         either about a definition, or about a distinctive property, or about a genus,
         or about an accident. Another proof is through deduction. For necessarily,
         whenever one thing is predicated of another, it either counterpredicates with
         the subject or it does not. And if it does counterpredicate, then it must be a
         definition or a distinctive property (for if it signifies the essence it is the defi-
         nition, while if it does not it is a distinctive property – that is what we said
         a distinctive property was, something which counterpredicates but does not
         signify the essence). But if it does not counterpredicate with the subject, then
         either it is among the things stated in the definition of the subject or it is not.
         If it is among the things stated in the definition, then it must be a genus *or a*
         differentia, since a definition is composed of a genus and differentiae. On the
         other hand, if it is not among the things stated in the definition, then it is clear
         that it must be an accident, for an accident was said to be what is neither a
         definition nor a distinctive property nor a genus but still belongs to the subject.

Plainly enough, differentiae are always regarded in this context, together with the genus, as essential and non-exclusive predicates of their subject, the species. Hence, although Aristotle decided, for unknown reasons, not to expressly count differentiae as one of the predicables, his intention seems to have been that, should they be included in the classification, they would then be "classified together with the genus". This is consistent with the fact that differentiae are, with the genus, part of the definition,[7] which, as Aristotle repeatedly states, is the account that exhibits or signifies the essence of a thing.[8] Moreover, such an association of differentiae with genera is also apparent in other texts, both from the *Topics* and other treatises.[9]

The problem, however, is that Aristotle sometimes seems to adopt points of view on this matter which are incompatible with this one, by suggesting either that differentiae are distinctive properties, in the strict or exclusive sense of the term, and, therefore, non-essential predicates of the subject, or that they are rather to be conceived as qualities or qualifications, and, therefore, in the nomenclature of the table of predicables, as accidents. How should this fluctuation, or ambivalence, be construed?

Let us look directly at the texts, starting by those that seem to suggest an assimilation of differentiae to distinctive properties. First of all, a few general remarks on the Aristotelian notion of ἴδια would be useful. As it is known, Aristotle defines ἴδιον in the *Topics* as follows:[10]

(T3) A distinctive property is what does not exhibit the essence of a thing, but belongs only to it and counterpredicates [ἀντικατηγορεῖται] with it.

Under this general definition, Aristotle systematically acknowledges in this treatise four types of distinctive property. These types are organised into two different conceptual pairs, one of a relational nature (in itself *vs* relative to something else) and the other of a temporal nature (always *vs* for a time). They are presented for the first time in the following passage:[11]

(T4) Distinctive property is assigned either in itself and always or relative to something else and for a time [καθ' αὐτὸ καὶ ἀεί, ἢ πρὸς ἕτερον καὶ ποτέ]: e.g. it is an in itself property of human to be by nature a civilized animal; a relative distinctive property is one like that of the soul in relation to the body, viz. that one is fitted to command, and the other to obey; a distinctive property that always holds is one like the property which belongs to god of being an immortal living being; a distinctive property that holds for a time is one like the property which belongs to a particular person of walking in the gymnasium.

These four types are defined as follows:[12]

(T5) An *in itself distinctive property* is one which is ascribed to a thing in contrast to everything else and sets it apart from everything else, as does being a mortal living being capable of receiving knowledge in the case of human. A *relative distinctive property* is one which separates a thing off not from everything else but only from a particular definite thing, as does the property which virtue possesses relative to knowledge, viz. that the former is naturally produced in more than one faculty, whereas the latter is produced in that of reason alone, and in those who have a reasoning faculty. A *distinctive property for always* is one which is true at every time, and never fails, like being compounded of soul and body in the case of a living creature. A *distinctive property for a time* is one which is true at some particular time and does not of necessity always follow; as, of some particular person, when he walks in the marketplace.

Aristotle will later reiterate this general scheme, only this time by creating, from the notion of distinctive property in relation to something else, a new conceptual frame, whose principle of distinction is now, on the one hand, a quantity coefficient (in all cases *vs* for the most part) and, on the other, a frequency coefficient (always *vs* in most occasions). Now, it is at this juncture that we find in the *Topics* for the first time the equation of differentiae with distinctive properties. Let us consider the text:[13]

(T6) To ascribe a distinctive property relatively to something else means to state the difference [τὸ διαφοράν] between them as it is found either in all cases and always, or for the most part and in most occasions [ἢ ἐν ἅπασι καὶ ἀεί, ἢ ὡς ἐπὶ τὸ πολὺ καὶ ἐν τοῖς πλείστοις]: thus a distinctive property that is found in all cases and always is one such as human possesses relatively to a horse, viz. being two-footed; for a human is always and in every case two-footed, whereas no horse is ever two-footed. On the other hand, a distinctive property that is found for the most part and in most occasions is one such as the faculty of reason possesses relative to the appetitive and irascible faculties, in that the former commands, while the latter obeys; for the reasoning faculty does not always command, but sometimes also is under command, nor are appetitive and irascible faculties always under command, but also on occasion assume the command, whenever the person's soul is vicious.

Unmistakably, this text assumes, both in the initial description and no less in the chosen examples, the association of διαφοραί, in Aristotle's technical sense, with ἴδια: being two-footed is a differentia *and* a distinctive property of mankind; more-over, it is, "in all cases and always", a distinctive property of mankind *because* it is a differentia of the species.

Also, in a short passage from the *Sophistical Refutations*, where contradiction is said to be "the distinctive property of the refutation",[14] such an association between differentiae and distinctive properties seems to be implied. Indeed, since refutation is repeatedly defined as "a deduction of the contradictory",[15] to say that contradiction is the distinctive property of the refutation strongly suggests that it pertains to contradiction to mark refutation off as a *specific type* of deduction and, hence, that contradiction is *the differentia* that produces the species "refutation" within the genus "deduction".[16]

Let us now turn to the (much more numerous) passages in which Aristotle describes the differentia as a ποιόν τι.[17] This is paradigmatically the case of the following passage:[18]

(T7) Again, see if he has given the differentia as the genus, e.g. immortal as the genus of god. For immortal is a differentia of living being, since some living beings are mortal and some immortal. Clearly, then, a mistake has been made; for the differentia is not the genus of anything. And that this is true is clear; *for no differentia signifies what it is, but rather some qualification* [οὐδεμία γὰρ διαφορὰ σημαίνει τί ἐστιν ἀλλὰ μᾶλλον ποιόν τι], for instance terrestrial or two-footed.

Several other texts state the same thing:[19]

(T8) The differentia always signifies a quality of the genus [ποιότητα τοῦ γένους], whereas the genus does not signify a quality of the differentia; for he who says "terrestrial" describes an animal qualified in a certain way [ποιόν τι ζῷον], whereas he who says "animal" does not describe a terrestrial thing qualified in a certain way [ποιόν τι πεζόν].

(T9) It seems that the differentia signifies a qualification [ποιόν τι].

(T10) See, further, whether the given differentia signifies a certain this rather than a qualification [μὴ ποιόν τι ἀλλὰ τόδε τι]; for it seems that every differentia expresses a qualification [ποιόν τι].

(T11) For "aquatic" does not signify "in" anything, nor a locality, but a qualification [ποιόν τι] . . .

However, the text where in a most authoritative manner differentiae seem to be assimilated to qualifications is the chapter of *Metaphysics* V where Aristotle enumerates the various senses of this category, the first of which is precisely the differentia:[20]

(T12) We call a qualification, in one sense, the differentia of a substance [ἡ διαφορὰ τῆς οὐσίας], as for instance a human is an animal qualified in a certain way [ποιόν τι ζῷον] because he is two-footed, a horse because it is four-footed; and a circle is a figure qualified in a certain way [ποιόν τι σχῆμα] because it is without angles; the differentia in respect of substance being a quality [τῆς διαφορᾶς τῆς κατὰ τὴν οὐσίαν ποιότητος οὔσης].

Now then, considering all these seemingly contrasting texts, how should the discrepancy regarding the predicative status of differentiae that they appear to convey be explained? And, above all, how is their place within the system of predicables to be interpreted: as essential, "genus-like" predicates? As distinctive properties? Or as accidents, that is to say, as something which does not "signify what it is, but rather some qualification"?

III

A first explanation may immediately be discarded. It would indeed be quite tempting to explain away the discrepancy on historical grounds. Maybe Aristotle had just evolved and changed his views on the matter throughout his life. But this would not do. In fact, for each of the three interpretations, texts consensually considered more or less of the same period (and of a relatively early period too) of Aristotle's philosophical career, such as the central books of the *Topics*, can be given as evidence.[21]

Two hypotheses then remain: either Aristotle adopted different interpretations of the predicative status of differentiae according to different contexts, so that all interpretations express a true point of view about it, without any being completely

satisfactory, or only one of the interpretations is true and Aristotle's ambivalence on this matter is only apparent.

In the remainder of this chapter, I will argue in favour of the latter hypothesis. In particular, I will try to prove the following three points:

1 Within the framework of the predicables, differentiae are always and only to be conceived as essential, "genus-like" predicates.
2 Only in a highly qualified sense can differentiae be regarded as distinctive properties.
3 Although they may be regarded as qualifications, also in a qualified sense, differentiae can never be regarded as accidents, that is, as accidental to the subject of which they are predicated.

In order to proceed, let us look again at the texts and consider each of the interpretations that they seem to offer about the predicative status of differentiae. Again, let us start with the interpretation of differentiae as distinctive properties. To recall the relevant part of T6:[22]

> To ascribe a distinctive property relatively to something else means to state the difference [τὸ διαφοράν] between them as it is found either in all cases and always, or for the most part and in most occasions.

The first thing that should be pointed out about this text is that διαφοραί are equated with neither ἁπλᾶ distinctive properties nor specifically with καθ᾽ αὑτά distinctive properties but rather with distinctive properties *in relation to something else* (πρὸς ἕτερον).[23] This detail is important. In fact, since distinctive properties, unlike differentiae, necessarily counterpredicate with their subjects, the assimilation of the two concepts would otherwise be hardly understandable.

That differentiae do not necessarily counterpredicate with the subject clearly follows from the second passage in which Aristotle mentions differentiae in the framework of the predicables (T2). As we have already seen, in the first passage (T1) he limits himself to saying that the differentia is γενική and, therefore, "should be classified together with the genus". In the second one, however, he proceeds to deduce differentiae, along with genera, as essential a*nd non-coextensive* predicates of the subject: quoting again his own words, "if it *does not counterpredicate with the subject*, then either it is among the things stated in the definition of the subject or it is not", and "if it is among the things stated in the definition, then it must be a genus *or a differentia*".

This is moreover utterly consistent with a basic principle of Aristotle's generative scheme, namely, that any differentia can be predicated of more than one species, as long as these belong to subordinate or coordinate genera. The rationale of this principle is quite straightforward. Different species predicated by the same differentia must belong to different genera since two species predicated by the same genus and the same differentia would be one and the same. However, the same differentia cannot belong to two unrelated genera because each genus has its

own differentiae. Therefore, whenever the same differentia predicates two distinct species, the genus of one must be subordinated to the genus of the other or both must be subordinated to a third. This is what happens, for instance, with the differentia two-footed, which is both a differentia of winged and of terrestrial animals (namely, human) and can only be so because winged and terrestrial animals fall under a single higher genus, animal.[24]

So however desperately restrained Aristotle may be regarding the status of differentiae within the framework of the predicables, one point that he makes abundantly clear in the exact context where he offers such a framework is that he does not think of them as coextensive predicates, similar to genera and contrary to ἁπλῶς or καθ' αὑτά distinctive properties. And the least that can be conceded in the broader scope of Aristotle's generative scheme is that, again contrary to ἁπλῶς or καθ' αὑτά distinctive properties, differentiae are not regarded there as necessarily counterpredicating with their subjects.

Still, from the fact that differentiae do not necessarily counterpredicate with the subject, it does not follow that they *cannot* counterpredicate with it. Furthermore, Aristotle himself seems to admit that they can, for he formally states that "the differentia has always *an equal* or a wider extension than the species" (ἀεὶ δ' ἡ διαφορὰ ἐπ' ἴσης ἢ ἐπὶ πλεῖον τοῦ εἴδους λέγεται).[25] Now, if a given differentia has the same extension as the species of which it is the differentia, it will apparently be, in the technical sense, a distinctive property of this species. And since it will then set this species "apart from everything else" and "for always", it appears it will be a καθ' αὑτό distinctive property of the species. If so, the fact that in Aristotle's presentation of the system of predicables the differentia is twice mentioned along with the genus and once included in the number of non-coextensive predicates could simply be a clumsy and ultimately mistaken way of highlighting the closeness of genera and differentiae as *essential* (but, in the case of the latter, not invariably non-coextensive) predicates of their subject, the species. This could even explain Aristotle's laconism regarding the place of differentiae within that system, a sign of embarrassment with the predicative status of differentiae, which he was himself unable to solve: in some aspects similar to genera, in others similar to distinctive properties. Could that be it? I believe not.

Why not? Because the fact that a differentia has the same extension as the species of which it is the differentia is not a sufficient condition for them to counterpredicate in the relevant sense. Of course, when a differentia holds of a species, it does so καθ' αὑτό, and it will do it for always since, for Aristotle, species do not change or extinguish themselves, nor do they give rise to others or evolve into others. And, of course, if a differentia uniquely predicates a species, the latter will be the only species to καθ' αὑτό have this differentia, and that for all eternity. However, this does not imply that such a species will be the only *subject* to be predicated by it. Let us allow ourselves the following thought experiment. Imagine an animal species (let us call it *S*) which is the only one in the universe to be defined by this unique differentia called *Sd* – say, a distinctive yellow mark on the back. In that case, we will have the desired case of a differentia which is predicated of one single species. But now suppose that a specialised corporation decided to produce

toys (let us call them *ST*) which are an exact replica of *S* baby animals, all of which with their unique distinctive *Sd* mark on their backs. Then *Sd* will not, of course, be a differentia of *ST*, but these latter will nonetheless be predicated by *Sd* (as an accident or even a καθ' αὑτό accident, in Aristotle's terms, one might presume).[26] Therefore, *S* and *Sd*, the original animal species and its differentia, will no longer counterpredicate. Now, even if not all differentiae can, like *Sd*, be reproduced in artificially generated copies of the instances of the original species of which they are the differentiae (it is hard to tell), nothing prevents them, at least in theory, from accidentally predicating *something other than* these instances. And if they *can* be predicated of something other than the instances of the original species, then they do not *necessarily* counterpredicate with the species.

What Aristotle has in mind when he speaks of ἁπλῶς or καθ' αὑτά distinctive properties is something so perfectly tied to their subjects that in absolutely no circumstances could ever it become the predicate of anything else besides those particular subjects. Compare this with Aristotle's examples of καθ' αὑτά and ἀεί distinctive properties in T4–6. It simply cannot be (at least for Aristotle, that is) that something besides a human being is a naturally civilised animal or that something besides a god is an immortal living being, and it simply cannot be that any other thing besides a human is a mortal living being capable of receiving knowledge or that any other being besides living creatures can be composed of soul and body. You can produce as many humanoid toys as you wish, but you will never get a non-human mortal living being capable of receiving knowledge, and you can ask Michelangelo to paint an image of god the best he is capable of, but you will not obtain an ungodly immortal living being. Now, these latter are true ἁπλῶς and καθ' αὑτά distinctive properties of their subjects. Differentiae that uniquely predicate a species are not since they do not *necessarily* counterpredicate with the species.[27]

Note that this is not something specific to differentiae. The same can also occur with genera, although in different circumstances and for different, and in a sense opposite, reasons. Granted, genera and species (as also differentiae) are in Aristotle's world changeless and everlasting beings, coeternal to the cosmos itself, of which they are essential furniture. They are, however, not immune to accidents that may affect their individual instances. Let us engage in another thought experiment. Suppose that a cataclysm of gigantic proportions erases from the face of the earth all instances of a biological genus (let us call it *G*), except those belonging to one of its species (lets us call it *GS*). If such a disaster should happen, then *G*, which, as any other genus, is by definition predicated of several different species,[28] would from that instant on be only predicated of the individual instances of one of them, *GS*, and would, therefore, become for all practical purposes coextensive with this species, in such a manner that belonging to *G* would differentiate it from everything else and for all the eternity that follows. I say "for all practical purposes" since *G* would presumably continue to be predicated of all its natural species, regardless of the fact that they all still had any instances; that is exactly what it means for the species to ever last. But from a practical point of view, *G* would only be predicated of (the instances of) *GS*, and that is exactly why from that moment on *G*

would differentiate *GS* from everything else and for all the eternity that follows.[29] Now, would that event, for Aristotle, turn *G* into a ἁπλῶς or καθ' αὑτό distinctive property of *GS*? We can guess with considerable confidence that Aristotle would reply "no" to this question. And the reason is that it would not be of necessity (nor eternally) that *G* would be uniquely predicated of *GS*.

Let us now return to the relevant point. Since differentiae do not necessarily counterpredicate with the species, they cannot be "simple" or "in itself" distinctive properties. They can, however, be *relative* distinctive properties, exactly as Aristotle implies they are in T6. Now, according to the definition of this special type of ἴδιον, a πρὸς ἕτερον distinctive property is "one which separates a thing off not from everything else but only from a particular definite thing".[30] Does this description adjust to differentiae? No doubt. For instance, being two-footed distinguishes humans from horses, but since many other animals are two-footed besides humans, it does not separate them off "from everything else", as would be the case if the differentia were a καθ' αὑτό distinctive property.[31] Similarly, being even distinguishes the number 2 from the number 3, but it "does not separate it off from everything else" since the number 2 is not the only even number. The same can *mutatis mutandis* be said of differentiae with the same extension as the species of which they are differentiae since it is not of necessity that they counterpredicate, and therefore, it is never unrestrictively (or ἁπλῶς, if you will) that the former separate the latter off "from everything else". In general, then, a differentia can be considered as a distinctive property of the subject that it predicates when it is or becomes distinctive to it (and thence counterpredicates with it) *in relation to some other subject*. In no case, however, will a differentia be or become a καθ' αὑτό distinctive property of its subject, for the reasons just stated.[32]

There is, however, a further problem to be dealt with. If differentiae are to be regarded as essential to the things of which they are differentiae – being, with the genus, one of the two elements of the definition, which is the formula that "exhibits the essence of a thing"[33] – how can differentiae be *any kind of distinctive property*? For, by definition, distinctive properties "do not exhibit the essence of a thing".[34] If, in fact, a differentia is part of the essence of X, then it must, like its genus, be essential to X (besides being non-coextensive with it); therefore, it cannot be a distinctive property, because distinctive properties are non-essential to their subjects (although they are coextensive with them).[35]

The solution to this problem might lie in the following detail: the text under analysis does not state that differentiae are distinctive properties but rather that the attribution to a subject of a distinctive property in relation to another subject expresses *a difference* of the former regarding the latter. Now, when the subjects involved in this attribution are two species, the difference between them, which is then a difference in the technical sense, is *an essential* difference. Therefore, to say that a differentia (say, two-footed) is a distinctive property of the species to which it belongs (say, human) in relation to another species to which it does not belong (say, horse) does not imply, as in the case of ἁπλῶς distinctive properties, to think of it as a non-essential property of the subject but rather as *an essential* property of the subject.

In this light, the point is not that differentiae are mere distinctive properties of the species, but rather that the predication of the species by a differentia is logically indistinguishable from its predication by a distinctive property *in relation to another species*. In fact, in both cases, the predicate (1) counterpredicates with the subject in relation to and (2) separates the subject off from that with which the relation is thought. The fact that, in the case of differentiae, the predicate is an essential feature of the subject, whereas this is not the case with distinctive properties properly speaking, is simply not relevant here since differentiae are not to be assimilated to καθ' αὑτά distinctive properties, but only to those relative distinctive properties that express the difference (and, of course, a difference which is κατ' οὐσίαν) between two species.

In short, Aristotle is not implying in the text that differentiae are distinctive properties but only that under the specified conditions they *behave* as distinctive properties. Nevertheless, apart from these conditions differentiae are not coextensive with theirs subjects, and *under no conditions* do they cease to be their essential predicates, which is as much as saying that in no case can they be or become distinctive properties properly speaking.[36]

IV

Bearing this in mind, we may now be able to better understand the passages in which Aristotle seems to equate differentiae with qualities or qualifications. What is the common thesis of these texts? In a nutshell, differentiae express a ποιόν τι, a "qualification" of the subject. Does this thesis imply that differentiae are, as such, qualities and, therefore, in some way accidental predicates of the species they predicate? Not at all. For if it did, it would also imply that species and genera were qualities as well. Indeed, it is also to a ποιόν τι that Aristotle assimilates genera and species in a text that should be (but has not been sufficiently) considered in this context. I am referring to the well-known passage of the *Categories* in which Aristotle excludes that to be a τόδε τι is a distinguishing criterion of substances in general, both "primary" and "secondary".

The text reads thus:[37]

(T13) Every substance seems to signify a certain "this" [τόδε τι]. As regards the primary substances, it is indisputably true that each of them signifies a certain "this"; for the thing revealed is individual and numerically one. But as regards the secondary substances, though it appears from the form of the name – when one speaks of human or animal – that a secondary substance likewise signifies a certain "this", this is not really true; *rather, it signifies a certain qualification* [ποιόν τι] – for the subject is not, as the primary substance is, one, but human and animal are said of many things. However, *it does not signify simply a certain qualification*, *as white does*. White signifies nothing but a qualification, whereas the species and the genus mark off the qualification *of substance* – they signify *substance qualified in a certain way* [ποιάν τινα οὐσίαν σημαίνει].

Clearly enough, everything stated in this text about secondary substances could also be stated of differentiae. Furthermore, the reason that justifies treating secondary substances as "qualifications" in this text is the same that justifies considering differentiae as such in the texts we have seen earlier.[38] Indeed, what underlies all these texts is the fundamental principle of Aristotelian metaphysics according to which universals that predicate substances "in the what it is" are by nature ontologically dependent beings, literally *secondary* to the beings they depend upon. In fact, they only exist insofar as some (primary) substance exists, and in that respect they behave almost as if they were accidents. Furthermore, since they express *what kind of substance* the primary substance is, they can even be said to behave as a particular sort of accidents – namely, qualities. However, this principle does not undermine but rather is committed to the thesis that such universals are *essentially* predicated of the substance.[39] The analogy with qualities entails, therefore, a crucial divide: qualities just express accidental features of substances, while genera and species express their essential features; qualities express *how* substances are, genera and species express *what* they are, or, in other words, what sort of substances they are.

Now, this principle applies to differentiae as well. For, just like genera and species, differentiae are also synonymously predicated of substances, as the very text of the *Categories* makes plain,[40] and just like genera and species, differentiae also crucially participate in discriminating the type of substance that each particular substance is.[41] Consequently, as is the case with genera and species, differentiae are not mere qualities: they simply may be considered, exactly as genera and species, *a qualification of the substance*, in the sense that, by means of a differentia, a particular substance is discriminated as a substance of a certain sort.

T12 may clearly be interpreted along the same lines. Differentia is offered there as one of the senses of quality simply because differentiae discriminate the species within their genera as being "of a certain sort" or "qualified in a certain way" (for instance, as a ποιόν τι ζῷον or a ποιόν τι σχῆμα). Here too, then, the differentia is not conceived as a quality in the strict sense of an accidental predicate of its subject but as a certain, very peculiar, qualification, namely, that which indicates *what kind of thing* that subject essentially is within the genus to which it belongs. By analogy with the texts which seemed to assimilate differentiae to distinctive properties, one might say here that the differentia is not a quality ἁπλῶς but rather a special type of qualification, namely, a "substantial" or "essential" qualification (κατὰ τὴν οὐσίαν, as the text literally describes it), which specifies a certain subject *as a given species* within the respective genus.[42] Now, the mere characterisation of differentiae as κατὰ τὴν οὐσίαν makes clear that in no case are they thought of as accidents of their subjects but rather as *essential* predicates.[43] In short, the very texts we have seen in favour of the supposedly "qualitative" character of differentiae seem to speak against such interpretation.

But let us have a closer look, in this light, at our "paradigmatic" T7:

Again, see if he has given the differentia as the genus, e.g. immortal as the genus of god. For immortal is a differentia of a living being, since some living beings are mortal and some immortal. Clearly, then, a mistake has been

made; for the differentia is not the genus of anything. And that this is true is clear; for no differentia signifies what it is, but rather some qualification, for instance terrestrial or two-footed.

That the differentia is not the genus of anything is a well-held Aristotelian thesis and one that results from the very content of the two concepts. It raises, therefore, no problem, given that the genus does not exhaust the set of essential predicates. There seems, however, to be a problem attached to the last sentence: "for no differentia signifies what it is, but rather some qualification". The problem, of course, is that, differently to what we have seen in the previous texts, the interpretation of differentiae as (some kind of) qualifications is not viewed in this one as something that genus and differentia share and have in common; rather, the differentia is here totally on the side of the ποιόν τι, while the genus is totally on the side of the τί ἐστι. The thesis that differentiae can be regarded as qualifications exactly in the same terms in which genera can be regarded as qualifications thus seems to fall apart here because assimilation to qualification is precisely what, in this case, distinguishes genera from differentiae.

Here is my explanatory hypothesis. In the statement that "no differentia signifies what it is, but rather some qualification", the expression "what it is" (τί ἐστι) *specifically refers to the genus*, a reading supported by a number of texts in the Aristotelian *corpus*.[44] Far from involving a strong and disturbing thesis about the conceptual opposition between genus and differentia, this claim merely expresses, therefore, the truism that no differentia is a genus. This clearly makes better sense of the text as a whole since it is precisely to corroborate the thesis that "the differentia is not the genus of anything" that such claim is put forward: "that this is true is clear; for no differentia signifies what it is, but rather some qualification, for instance terrestrial or two-footed". Of course, the very assertion that no differentia is a genus involves an evaluation by default, as it were, of differentiae in relation to genera. The justification for this evaluation can be found in the Aristotelian principle according to which the genus reveals the essence *more* than the differentia because it is a "better" answer, that is, *more* primary and pertinent, to the question τί ἐστι,[45] and this is why it constitutes, in the definition, a *more* basic and fundamental element than the differentia.[46] However, this evaluation does not entail the negation of the essentiality of differentiae but rather it presupposes it.

V

It seems we have now reached a verdict as to the relative admissibility of the three interpretations regarding the place of differentiae within Aristotle's system of predicables. In a nutshell, this verdict can be spelt out thus: differentiae are, as such, essential predicates of their subjects and cannot, therefore, be their καθ' αὐτά distinctive properties, nor can they be their accidents. If so, then the three interpretations do not constitute alternative points of view about the predicative status of differentiae. Rather, there is only one Aristotelian interpretation of this status, namely, their assimilation to the genus, as essential and non-coextensive predicates

of the species. The two other interpretations are only supplementary characterisations (which, moreover, fit equally well with genera and differentiae). A corollary to this conclusion is that T1 and T2 must be acknowledged as the reference texts for the predicative status of differentiae and particularly for their classification within the system of predicables.

We can, therefore, conclude the following:

1 Differentiae are always "genus-like" because, like the genus, they are essential to and non-coextensive with the species.
2 Being essential to the species, differentiae are never mere qualifications of their subjects – although they may, like genera and species, be regarded as qualifications κατὰ τὴν οὐσίαν, insofar as they contribute to the discrimination of the type of being that each particular being is.
3 Differentiae are not distinctive properties because they do not necessarily counterpredicate with the subject. Indeed, like the genus, they can be described as symmetrical to distinctive properties: essential, while distinctive properties are non-essential; non-coextensive, while distinctive properties are coextensive. However, any differentia can, of course, from the point of view of the relation of the subject it predicates with another subject it does not predicate, be regarded as a distinctive property "relatively to something else".[47]

Notes

1 A version of parts of this text appeared in Portuguese in a chapter of the book *Aspectos Disputados de Filosofia Aristotélica* (Mesquita 2004). They were all systematically revised and, in general, deeply altered. I thank the publisher for having authorised the reuse of such parts in this new paper, and the two anonymous readers of its draft version for their invaluable comments on it. This work was funded by Portuguese national funds through FCT – Fundação para a Ciência e a Tecnologia, I.P., within the project PTDC/MHC-FIL/0787/2014.
2 See *Top*. I 4, 101b17–25 (quoted as T1). A more thorough presentation of this classification system can be found at the beginning of Section 2.
3 Ὅρος as a predicate includes only the *definiens*, which is the predicative part of the definition.
4 I know of no entirely satisfactory translation for ἴδιον in the technical sense. "Distinctive property" is, I think, the one that comes nearer to Aristotle's notion of ἴδιον.
5 *Top*. I 4, 101b17–25. All translations of *Top*. I are by Robin Smith, with some adaptations in the key-concepts. The italics are mine.
6 *Top*. I 8, 103b2–19 (italics are mine).
7 Cf. *Top*. I 8, 103b12–6; VI 1, 139a28–31; VI 4, 141b25–8; VI 5, 143a15–28; VI 6, 143b19–20; VI 6, 143a34–b10; VII 3, 153b14–5; VII 5, 154a23–32; etc.
8 Cf. the definition of definition in *Top*. I 5, 101b38: "A definition is a phrase which signifies the essence" (ἔστι δ' ὅρος μὲν λόγος ὁ τὸ τί ἦν εἶναι σημαίνων). But see also, only within the *Topics*: I 4, 101b17–23; I 8, 103b6–12; V 2, 130b25–8; V 3, 131b37–132a9; VII 3, 153a6–22; VII 5, 154a23–32; VII 5, 155a18–22. To "exhibit the essence" and to "signify the essence" are, in Aristotle's idiom, utterly equivalent expressions. A particularly telling passage is *Top*. V 3, 131b37–132a9, where Aristotle permanently alternates the two expressions. Of course, this equivalence is directly derived from the ordinary

language, where σημαίνειν still held the original meaning of "pointing", and, therefore, in this sense, of "showing" or "displaying".

 9 See, for instance *Cat*. 5, 3a21–8 and 3a33-b9.

10 *Top*. I 5, 102a18–9.

11 *Top*. V 1, 128b16–21 (all translations of *Top*. IV-VI are by Pickard-Cambridge, with alterations). These four types had already been partially foreseen in the clarifications that follow the definition: cf. *Top*. I 5, 102a18–30. For an excellent analysis of the various types of distinctive property enumerated in this and the following passages, see Barnes (1970: 142–5).

12 *Top*. V 1, 128b34–129a5 (italics are mine).

13 *Top*. V 1, 129a6–16.

14 <Ἡ> ἀντίφασις, ὅπερ ἦν ἴδιον τοῦ ἐλέγχου . . . (*SE* 6, 169a20).

15 Συλλογισμὸς ἀντιφάσεως: cf. *APr*. II 20, 66b11; *SE* 6, 168a36–7, and 9, 170b1–2; and, in a more complete formula, *SE* 1, 165a2–3.

16 Other examples of assimilation of differentiae to distinctive properties in the *Topics* may be found in V 4, 133b7–9, and V 7, 136b20–2.

17 Here is another difficult expression to translate. I will render the substantival form ποιόν τι as "a qualification" or "some qualification", and the adjectival form "ποιόν τι X" as "an X qualified in some way" or "an X of a certain sort" or again "a certain sort of X".

18 *Top*. IV 2, 122b12–7.

19 Respectively: *Top*. IV 6, 128a26–9; VI 6, 144a18–9; VI 6, 144a20–2; VI 6, 144b35–6. See also *Top*. I 15, 107a18–31.

20 *Metaph*. V 14, 1020a33-b1 (translation by Kirwan, altered). Cf. also 1020b14–7.

21 The first interpretation is suggested by V 4, 132b35–133a11 (and see *Top*. IV 6, 128a20–1), as well as by the passages of the *Categories* referred to in note 9, which can be tentatively dated from the same period; the second is documented by T6 and the other passages of Book V referred to in note 16 (as well as by the short passage of the *Sophistical Refutations*, if contemporary); the third is supported by all the texts of *Top*. IV and VI quoted earlier in the text.

22 *Top*. V 1, 129a6–8.

23 It should be noted that relative distinctive properties are expressly considered by Aristotle as μὴ ἁπλῶς distinctive properties; cf. *Top*. I 5, 102a22–30: "For no one would call something ἴδιον which is capable of belonging to something else (as for instance being asleep for a human), not even if it happened for a time to belong to one thing alone. Therefore, if something of this sort were to be called an ἴδιον, it will not be so called without qualification [οὐχ ἁπλῶς], but rather ἴδιον at a time or in relation to something [ἀλλὰ ποτὲ ἢ πρός τι ἴδιον ῥηθήσεται]: being on the right is ἴδιον at a time, and two-footed is really called ἴδιον in relation to something (for instance of a human in relation to a horse or a dog). But it is clear that nothing which can possible belong to something else counterpredicates: for it is not necessary for something to be human if it is asleep". Note further that differentiae are also given here as an example of relative distinctive properties.

24 Cf. *Top*. VI 6, 144b12–30.

25 *Top*. IV 2, 122b39–123a1 (my italics). Note, however, that elsewhere Aristotle declares instead that "the differentia has a wider extension than the species" (*Top*. VI 6, 144b6). Considering the context of this last passage, as well as the wording details of the one quoted in the text ("the differentia has *always* an equal or a wider extension than the species"), it is likely the latter that reflects Aristotle's authorised position in this regard. Even so, this does not preclude the possibility that differentiae having the same extension as the species is an exception, rather than the rule. David Bronstein goes even further and sustains that, when mentioning differentiae coextensive with their species, Aristotle means to refer exclusively to species that are not ultimate or *infima* (Bronstein 2016: 201–2n38), but I find nothing in this text (or in any other, for that matter) to support such a claim, which seems justified solely by his own general interpretation of Aristotle's method for discovering definitions.

26 Actually, nothing seems to prevent a predicate that is a differentia of a certain subject from being an accident (or a distinctive property, for that matter) of another. For example, odd is a predicate of the sides of any pentagonal concrete shape, but it is not the differentia of any. Similarly, two-footed is a predicate of every being that walks on two legs, but it is not a differentia of all such beings, but rather an accident of some of them (think, for instance, of an artificially intelligent humanoid robot). Incidentally, the same could probably be said of the genus: colour is the genus of white, but it is an accident of all white things. This is, of course, a controversial contention, but I cannot fully engage in the controversy here. Let me just point out what I take to be the most serious objection to the contention. Aristotle voices at least once that every differentia is intrinsically linked to a particular genus (see *Top*. VI 6, 144b12–30; and this seems to be implied in *APo*. I 4, 73a34-b3, and II 13, 96a24–32). Now, if this is so, its predicative range cannot apparently go beyond the species of that genus, which blatantly contradicts my contention. My answer to this, which I can just outline here in a very schematic way, is the following. I have nothing to say against what Aristotle states in *Top*. VI 6: indeed, every differentia is intrinsically linked to a particular genus (his language there is highly suggestive: each differentia ἐπιφέρει or συνεπιφέρει, "drags along", its appropriate genus). My quarrel is about what we are authorised to take out of this. It would be tempting to conclude that, if every differentia is intrinsically linked to a particular genus, then it is predicated only of its species. This would, however, be a hasty, mistaken conclusion. What we are indeed authorised to conclude is that if every differentia is intrinsically linked to a particular genus, then it is *non-accidentally* predicated (that it is to say, predicated *as such*) only of its species; it may, notwithstanding, be also *accidentally* predicated of other things besides those species, namely, things of which the genus is itself accidentally predicated, or things that are somehow homonymous with those species, or things that bear some analogy to them. Consider odd, for instance. Odd is intrinsically linked to number; in Aristotle's own words, "nothing outside number is odd" (*APo*. II 13, 96a31–2). We may say, therefore, that odd is predicated only of numbers: it is, as a matter of fact, non-accidentally predicated (or predicated as a differentia) if these are numbers *with which* we count, for example the number 3 or the number 5, and accidently predicated if they are numbers *that* we count, say any odd number of tables or chairs (for this distinction, see *Ph*. IV 11, 219b5–7). *Mutatis mutandis*, it could be said that two-footed, which, as a differentia, is intrinsically linked to animal, is non-accidentally predicated only of (real) animals but may be accidentally predicated of other beings as well, say animated toy animals. The conclusion would be different if number were essentially predicated (or *per se* predicated in the first sense of *APo*. I 4) of odd, or animal were essentially predicated of two-footed. But this can never happen since, according to Aristotle's explicit words, no genus is predicated of its differentiae (see *Top*. VI 6, 144a31–b3, and cf. *Top*. IV 2, 122b18–23, and *Metaph*. XI 1, 1059b33). This latter thesis entails a further complication: it is hard to reconcile it with the fact that, according to *APo*. I 4, 73a37-b3, number is present in the definition of odd (as it is, in general, the case with *per se* predication in the second sense of *APo*. I 4), but a discussion of this point would drive us too far away.

27 This seems to follow in a particularly conspicuous manner from *Top*. I 5, 102a22–30, quoted in note 23.

28 See the definition of genus in *Top*. I 5, 102a31–2: "a genus is what is predicated in the what it is of many things which are different in species" (γένος δ' ἐστὶ τὸ κατὰ πλειόνων καὶ διαφερόντων τῷ εἴδει ἐν τῷ τί ἐστι κατηγορούμενον). Cf. *Top*. IV 3, 123a30–2, and *Metaph*. X 1, 1059b36–7; see also *Top*. IV 1, 121b11–4, IV 6, 127a26–38, and VI 6, 144a28–31.

29 It is maybe to accommodate such an extreme possibility that Aristotle mitigates the definition of genus in *APo*. II 13 and assumes there that a genus is something that *potentially* belongs to several different things: ὑποκείσθω γὰρ τοιοῦτον εἶναι τὸ γένος ὥστε ὑπάρχειν κατὰ δύναμιν ἐπὶ πλέον (96b8–10).

30 *Top*. V 1, 128b36–7.

31 Cf. *Top*. V 1, 128b35.

32 It could be objected that Aristotle remarks elsewhere that terrestrial biped (τὸ μεζὸν δίπουν) is a distinctive property of humankind (see *Top*. V 4, 133b7–9, and V 7, 136b20–2). However, terrestrial biped is not *a* differentia but rather the complete set of differentiae that, holding of the genus, define humankind as a species. Now, it is only as such a set that differentiae unqualifiedly counterpredicate with the subject, and it is, therefore, only also in this way that the whole set can, *as a set*, be regarded as a distinctive property of the subject, as referred to in the quoted text.

33 See *supra* notes 7 and 8.

34 *Top*. I 5, 102a18. Cf. I 8, 103b9–12; V 3, 131b37–132a9; V 5, 135a9–19.

35 This incompatibility is expressly pointed out by Aristotle, for instance, in *Top*. V 4, 132b35–133a5.

36 It has been previously explained why Aristotle may refer to terrestrial biped as a distinctive property of humankind (see note 32). A further point can now be added to the explanation. Aristotle points out very clearly elsewhere (*Top*. V 4, 132b35–133a5) that, even in this case, the expression "distinctive property" should be understood in a loose sense only and as a synonym for the counterpredication itself: for, he says, terrestrial biped belongs to the subject *as an element of its essence* and, therefore, cannot be regarded as an ἴδιον in the technical sense, precisely because an ἴδιον, in the technical sense, is a non-essential predicate. Now this text *precedes* the other two (*Top*. V 4, 133b7–9, and V 7, 136b20–2). It is, therefore, a plausible assumption that when Aristotle writes the latter, he wants them to be understood in the terms of the former. Hence, the notion of distinctive property must be understood in those two texts in a broad, non-technical sense, a sense in which the essentiality clause is neglected and "to be a distinctive property of" is used as a mere synonym for "to counterpredicate with".

37 *Cat*. 5, 3b10–21 (translation by Ackrill, slightly altered). The italics are mine.

38 As a matter of fact, the only reason that, in all likelihood, Aristotle does not mention differentiae in T13 is that, in this text, he is only concerned with the examination of substances.

39 To be sure, the notion of essential predication is not explicitly present in the *Categories*. However, the essentiality of the predicative link between universals and individuals (or between upper and lower universals) within the same category is, I take it, conveyed in the treatise by the notion of synonymous predication.

40 See the texts referred to in note 9.

41 This is implied by the fact that the differentia is part of the definition. But see also *Top*. I 18, 108a38-b6: "Finding differences is useful . . . for recognizing what something is, because we usually separate the peculiar account of the essence of anything by means of the differences appropriate to it".

42 See also *Ph*. V 2, 226a27–8, for a reference (repeated almost *verbatim* in *Metaph*. XI 12, 1068b18–9) to the differentia as a quality ἐν τῇ οὐσίᾳ: "By quality I mean not that which is in the substance [λέγω δὲ τὸ ποιὸν οὐ τὸ ἐν τῇ οὐσίᾳ], for even the differentia is a quality [καὶ γὰρ ἡ διαφορὰ ποιότης <ποιόν: *Metaph*. XI>], but . . ." (translation by Ross).

43 Aristotle seems almost ready to explicitly acknowledge this much when he writes the following: "Look and see, further, whether the differentia belongs accidentally to the object defined. For the differentia is never an accidental attribute, any more than the genus is; for the differentia of a thing cannot both belong and not belong to it" (*Top*. VI 6, 144a23–7). Note that, here again, differentiae are equated with genera. It is also worth mentioning that this text immediately follows T10. See also *Top*. V 4, 132b36–133a3.

44 See especially *Top*. VI 5, 142b27–29. Other references can be found in Bonitz 763b39–47.

45 *Top*. VI 5, 142b20–9; cf. I 5, 102a31–6; I 18, 108b19–23; IV 6, 128a20–9.

46 *Top*. VI 1, 139a28–31; *Metaph*. V 28, 1024b4–6. Cf. *Top*. I 18, 108b19–23; IV 6, 128a20–9; VI 5, 142b20–9.

47 Then again, however, this is not a privilege of differentiae since the same could be said of any predicable: the definition is a kind of distinctive property *sensu latu* (cf. *Top*. I 4, 101b17–23; see also *Top*. I 8, 103b6–12); regarding accidents, Aristotle himself declares that nothing prevents them from becoming distinctive properties at a certain moment or in relation to something else (ποτὲ καὶ πρός τι ἴδιον: cf. *Top*. I 5, 102b20–6); finally, any genus can obviously be regarded as a distinctive property of its species in relation to the species of another genus (for example, animal can be regarded as a distinctive property of human in relation to stone).

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12 Misplaced Trust and Blind Reasoning

Aristotle on the Fallacy of Equivocation

Paolo Fait

1. The Fallacy of Equivocation

In his *Sophistici Elenchi* (*SE*), Aristotle introduces the fallacy of equivocation, or 'due to homonymy', as one item in a division of two large classes of apparent refutations: those dependent on language and those independent of it (*SE* 4 and 5).

Dependent on language	Independent of language
Homonymy	Accident
Amphiboly	Predication with/without qualification
Combination	Ignorance of refutation
Division	Consequent
Accent	Begging the question
Form of expression	False cause
	Many questions

The following are brief descriptions of linguistic fallacies.

Homonymy: when a single word has more than one meaning. For instance, the verb μανθάνω means "to learn" or "to understand".[1]

Amphyboly: when a phrase or group of words is liable to different syntactic constructions, with some of the words playing different syntactic roles and occasionally assuming different meanings according to the different roles.

Combination: when in a sentence there can be more than one syntactic grouping of words and the combination of certain words is responsible for a false or absurd result.

Division: when in a sentence there can be more than one syntactic grouping of the words and the division of certain words is responsible for a false or absurd result.[2]

Accent: not very common in dialectic; more common in literary criticism as a cause of ambiguity.

Form of expression: when a word suggests that the thing signified belongs to a category which it does not belong to.

According to their very first description (*SE* 4, 165b29–30), the six linguistic fallacies are the ways in which we can fail to indicate the same things by the same words

or phrases. On this account, all linguistic fallacies would reduce to ambiguity or "the double". Later in the *Sophistici Elenchi* (7, 169a22–9; 20, 177b1–9), Aristotle considers that in composition, division, and accent there is in fact no ambiguity, because the syntactic groupings affect the identity of the phrase, and the prosody the identity of a word. So, strictly speaking, the problem in their case cannot be summarised as "same expression but different meanings" but as "different expressions (each with its meaning) wrongly identified and conflated in the argument".[3]

The most ambitious aim of a contentious debater is to refute or appear to refute a respondent by deducing the contradictory of the thesis upheld by the respondent at the start of the discussion, from premises which the respondent is prepared to grant. A refutation is accordingly defined as a syllogism of the contradictory (namely, contradictory of the thesis). Aristotle points out that the fallacy of equivocation can be located in the contradiction, in the syllogism, or in both (*SE* 19). It is located in the contradiction when a word or phrase occurring in the thesis and in the conclusion is ambiguous. It is located in the syllogism when the ambiguity is hidden in the premises. We shall discuss an example of the latter case in the next section. The former case is when the thesis contains a word that is ambiguous, and it is true and upheld by the respondent according to one meaning, while its denial is true and deduced by the questioner according to another meaning.

Ideally, the goal of the dialectical respondent is to block an apparent refutation dependent on equivocation by distinguishing the meanings of the ambiguous word and clarifying the sense in which she understands the word. A good respondent should anticipate the distinction, so to put the entire strategy of the questioner in jeopardy. A belated distinction, arising when the questioner has already drawn the conclusion, is of inferior value (*Topics* [*Top.*] VIII 7, 160a28–9; *SE* 17, 175b3–6).

2.   The Model

I shall conduct my discussion by reference to one of Aristotle's examples: the "cycle argument", adapted so as to work in translation:

(1) Epic poetry is a cycle
(2) All cycles have a saddle
Therefore: (3) Epic poetry has a saddle

How can the cycle argument ever manage to appear valid? I propose the following analysis.

To an average, fallibly rational, human being S, (3) appears (however momentarily) to follow from premises (1) and (2) just in case the two conditions hold:

(A) S instinctively interprets each premise in a way that makes it true or plausible. The premises in the example are interpreted as the following (SMALL CAPS indicate the meaning):

   (1*) EPIC POETRY IS A SERIES OF POEMS COMPOSED AROUND A THEME
   (2*) ALL VEHICLES WITH ONE, TWO, OR THREE WHEELS HAVE A SADDLE

This means that the homonymous word "cycle" will be assigned different meanings in (1) and in (2). S will automatically rule out alternative interpretations yielding false propositions, such as the following:

(1**)   Epic poetry is a vehicle with one, two, or three wheels
(2**)   All series of poems composed around a theme have a saddle

(B) Having assessed the premisses separately, S now distances herself from her own interpretation of the premisses and "blindly calculates" the wrong conclusion on the assumption that the two occurrences of the same word will have the same meaning. This is a piece of merely symbolic reasoning in which attention is diverted from the meaning of words. We must postulate that the inference is drawn using words as tokens, otherwise the argument would never go through.[4] Aristotle recognizes a role for "blind reasoning" through a brilliant simile which we shall discuss in section 4.

It is often noted that the fallacy of equivocation straddles the linguistic clothes of an argument and what is signified by the premisses and the conclusion (however one prefers to describe them: propositions, states of affairs, the semantic content, or "what is said").[5] Indeed, the fallacy can be described as a mismatch between the syntactic and the semantic processing of the argument. And both aspects must be involved in the account. If component A alone is considered, then the premisses yield no conclusion, real or apparent. Component B is thus necessary, although its presence alone is equally insufficient to explain the fallacy because symbolic reasoning, in and of itself, is just meaningless talk.[6]

3.   Speaker Meaning

Component A, disambiguation, raises a number of serious theoretical concerns. Is disambiguation a pragmatic or a semantic phenomenon? It crucially contributes to making an utterance truth-evaluable, and yet it seems to be part of the pragmatic dimension of the speech act because the choice of a meaning seems to depend on the truth value of the sentence.[7] These are problems Aristotle did not explicitly address, and we must try to offer a few remarks with special attention to the peculiarities of the dialectical form of communication.

Let us begin with the default case in which both interlocutors are in good faith and cooperate. This means that we can for the moment abstract from the *strategic* reasons why a question is asked and answered in a certain way in a competitive discussion. In the dialectical game the questioner asks a yes/no question. By answering it in the affirmative, the answerer commits herself to a premiss that should be true or at least plausible and becomes part of the argument developed by the questioner. If the question is ambiguous, the answerer may want to guess the correct interpretation of what the questioner has in mind, but more importantly, since her answer will be *her own* commitment, she will aim to commit herself to an interpretation that is true or plausible. If there is only one meaning associated with a *true* answer, this is certainly what the questioner wants her to assume, for it

is a constitutive rule of the dialectical game that the questioner should develop an argument from true or plausible premisses. One may even suggest that the truth in question plays a role in the questioner's speech act, in the sense that the question, which is a request for confirmation, will not be felicitous unless the respondent recognises that the questioner wants her to recognise the truth at issue and interpret the ambiguous sentence accordingly. Disambiguation will thus be driven by the truth value or the plausibility of the statement it generates. Accordingly, the answer will implicitly involve a commitment to one disambiguation, which means that if the answerer does not offer a distinction of meanings and answers the ambiguous question with a plain "yes" or a plain "no", it is because she trusts that the questioner will interpret the answer in the only reasonable way, which is the same way that she wanted the answerer to interpret the question.

This trust, however, can be misplaced. For if their mutual understanding proves illusory and the questioner takes the concession in a different sense, the respondent cannot blame her. Indeed, in adopting the implausible or false interpretation of the answer, the questioner will not be committing herself to its truth but speaking on behalf of the respondent. Moreover, since she has not explicitly ruled out the wrong interpretation, the respondent cannot even prove that the questioner is misunderstanding her answer. Thus, insofar as the answerer makes no distinction, she totally relies on the cooperation of the questioner. And, unfortunately, answerers tend to be incautious because in most cases a certain disambiguation is so compelling, in that context, that it does not even occur to them that there might be an alternative interpretation of the question.

However, this might seem not to be a serious problem: if the answerer perceives that she has been misinterpreted she can always clarify her thought by a subsequent distinction. But this is an embarrassment for a dialectical respondent because her task is precisely to foresee and pre-empt the opponent's moves. An answerer who retracts or modifies her answers raises the suspicion that she originally understood the answer like the questioner and is only trying to save her face (*Top*. VIII 7, 160a27–30; *SE* 17, 175b3–6).

We can thus conclude that in a dialectical exchange the disambiguation performed by the answerer is not just a passive de-codification of the question, but an implicit commitment that is a constitutive element of the answer – an element that could be made explicit by a distinction. I shall call this disambiguation "speaker intention" or "speaker meaning" and will now show that, in his own terms, Aristotle discusses this notion and recognises its role.

Chapter 10 of the *Sophistici Elenchi* is a long critical discussion of a division/ classification of arguments proposed by unnamed opponents: "there is nothing like the difference between arguments alleged by some people, that some are against the word and *others* against the thought" (*SE* 10, 170b12–4).

"Against the thought" (of the respondent) are those arguments in which the questioner has used the word for what the answerer had in mind when she granted the proposition. "Against the word" are those arguments in which she has not used the word for it. This is not a classification of fallacies, because arguments against the thought are faultless, so they are likely to cover all Aristotle's dialectical arguments. It is almost certainly a division of kinds (possibly completed by

further divisions) made by certain members of Plato's Academy. The way Aristotle criticises them clearly indicates that they are fond of the Academic method of διαίρεσις, the exhaustive and systematic division of a kind illustrated and promoted in Plato's *Phaedrus*, *Sophist*, *Statesman*, and *Philebus*. According to Cherniss and Tarán, Aristotle's anonymous butt is Speusippus, although previous interpreters have suggested that it is Plato himself.[8]

SE 10 offers a battery of arguments criticising the distinction from different angles, but the first and most important line of attack exploits the distinction between the phenomenon of *equivocation* between two discussants, on the one hand, and *ambiguity* as an objective linguistic feature of sentences and arguments, on the other. Aristotle objects to the anonymous thinker(s) that if the argument trades on an ambiguous word but the questioner is not aware of this fact, it cannot be determined whether the argument is against the word or against the thought of the respondent. To put it in greater detail:

- An argument is against the word just in case the answerer grants a premiss containing a word W according to one meaning, M_1, of W but the questioner deploys W according to another meaning, M_2, and manages, by exploiting this equivocation, to refute the answerer.
- An argument is against the thought just in case, for every W occurring in the argument, for every M of W, the questioner uses W according to M whenever the answerer has granted W according to M.

Notice first that the definition of an argument against the word tacitly assumes:

1 The word W has more than one meaning (e.g. M_1 and M_2).
2 The circumstance that W has more than one meaning is hidden to the answerer but known to the questioner.

Since, however, (1) and (2) are not specified in the classification, Aristotle develops his objection as follows (170b19–25).[9] He considers an Eleatic argument to the effect that all is one. Since "being" and "one" signify more than one thing, this argument should be naturally classified as against the word because it satisfies condition (1). Aristotle, however, imagines an additional hypothetical circumstance: the questioner is not aware of the ambiguity, so the argument fails to meet condition (2). If condition (2) is not satisfied, then the questioner cannot deliberately exploit the ambiguity against the intention of the unwary opponent. Two outcomes are then possible: if the two interlocutors happen to use the word with the same meaning, the argument is against the thought, whereas if they happen to have in mind two different meanings, then the argument is against the word. So in this hypothetical circumstance, the same argument can be against the word *and* against the thought. This taxonomical objection applies in the first instance when the argument contains ambiguous words, but it can then be universalised (170b26–8). This is because, for an argument to be against the thought is not an objective and permanent characteristic, like not containing ambiguous words or phrases, but it only consists

in a relation or disposition of the respondent with respect to the propositions she has granted (28–31). The argument is against the thought just because the questioner has in mind the same objects as the answerer. But in any argument, even one containing no ambiguous word whatsoever, the answerer can understand a word or phrase in a different way. This can happen arbitrarily and without any lexical or grammatical justification, such as by way of misunderstanding or by extending or restricting the literal meaning of a word. In these cases, the strictly dichotomous logic of the division will oblige its supporters to classify the argument as against the word, because whatever is not against the thought must fall in the other division. The gist of Aristotle's objection is that the classification hinges on the notion of an equivocation between two interlocutors, but it omits to specify that an equivocation presupposes a plurality of linguistic meanings which are literal and publicly recognised – not arbitrarily created by the speakers on the spur of the moment. Aristotle may be a stickler with these opponents, but it is true that they seem to articulate their dichotomy in a way that gives the respondent absolute discretion. Indeed, the respondent can always complain that her thought has not been interpreted correctly. But in many cases this complaint is no more justified than the remonstrance of a customer who, thinking that "coffee" means "tea", blames the waiter for not getting the thought she associates with the word "coffee". The only theory of meaning compatible with so generous a notion of equivocation is Humpty-Dumpty's. And of course one is here reminded of Diodorus Cronus, with his reduction of meaning to speaker meaning and his denial of ambiguity. Diodorus would only recognise a form of obscurity due to the fact that the interlocutors have in mind different things – a circumstance that is always possible, given that everyone has unrestrained freedom to determine the meaning of words.[10]

In light of such shortcomings, Aristotle proposes to dispose of one leg of the dichotomy, the notion of an argument against the thought, but to salvage, though scaling it down, the notion of an argument against the word. The latter, he says, does not fully correspond to his own category of paralogisms depending on language but only identifies a subclass of them. This is because "some of the paralogisms depending on language do not depend on the respondent being disposed in a certain way in relation to them, but on the argument itself containing a question which signifies more than one thing" (170b38–40). The meaning of this sentence is not entirely clear, but we can try to guess along the following lines. When the ambiguity is in the contradiction and the questioner deliberately misinterprets the thesis of the respondent by deducing a conclusion that contradicts the thesis only verbally, then the argument can in fact fall under the definition of an argument against the word. But when the ambiguity is in the premises, as in the cycle argument, the argument is not against the thought and yet it cannot be classified as against the word, because the respondent uses the word without having in mind any object. In the cycle argument the respondent does not realise that the questioner has reinterpreted premiss (2), but this blindness is only possible if the respondent is reasoning symbolically, without paying attention to the meanings of the ambiguous word. If this is true, then this case of linguistic fallacy eludes the dichotomy against the thought/against the word. An arguer who reasons symbolically does not have

in mind any meaning, so the argument cannot be against the word (as this notion is defined in the chapter). On the other hand, if we assume that, before reasoning symbolically, the respondent has understood "cycle" as a series of poems when committing to (1) and as a vehicle when committing to (2), we can only say that she argues against *her own* thought – a possibility not contemplated by the dichotomy, for in this case the respondent is the victim of a fallacy of her own making and cannot blame the questioner for not arguing against her thought.

After claiming that some fallacies depending on language are not against the word, Aristotle digresses to rebuke the opponents for not defining the syllogism as an essential component of a refutation (171a1–11). These authors understand λόγοι or arguments as roughly refutative in nature, but without considering the deductive or syllogistic component.[11] Presumably, Aristotle mentions the syllogistic component precisely at this juncture because in certain cases the ambiguity operates in the premises of a syllogism. Very tellingly, he cites the cycle argument as such a case, probably because he realises what we have just explained – namely, that this example eludes the dichotomy which he is opposing (171a10).

From this selective discussion of *SE* 10, we can infer that, since he recognises a class of linguistic fallacies against the word, Aristotle agrees that a tacit disambiguation produces a speaker meaning or intention (whereby the speaker directs her mind onto an object) and that if this disambiguation is not made explicit it can be equivocated by the questioner, thereby producing a refutation which is merely against the word. To his opponents Aristotle objects that the category "against the word" is not enough to explain all linguistic fallacies.[12]

4.   Symbolic Reasoning

Having defined syllogism and refutation at the start of the *SE*, Aristotle mentions one of the general reasons why besides *genuine* syllogisms and refutations there are also *apparent* ones. This cause is the *topos* of words, i.e. the phenomenon of ambiguity. To show that ambiguity is not merely a contingent fact but a necessity, Aristotle develops a complex argument involving a similitude with the case of reckoning by moving the counters on a reckoning board. Both people involved in a verbal argumentation and reckoners with the abacus must reason symbolically. Reasoners cannot bring the object themselves and cannot rely on a constant correspondence between words/phrases and objects, because words and phrases are finite while the objects are infinite in number. The same linguistic items must thus be used to signify more than one object. Computations with the abacus obviously involve the manipulation of symbols, and these too are essentially ambiguous. Finally, in both domains, ambiguity can trick the inexperienced:

> Now some <syllogisms and refutations> do not achieve this, though they seem to do so for many reasons, the most prolific and popular of which is the *topos* that depends on words.
>
>   Since it is impossible to bring the objects themselves into the discussion, we use words as symbols instead of them; and we think that what results

regarding the words results regarding the things as well, just as people who calculate <think to result> regarding their pebbles. But it is not the same. For words are finite and so is the sum of phrases, while things are infinite in number. Inevitably, then, the same phrase and a single word signify more than one thing. Accordingly, just as in calculations those who are not experts at moving the pebbles are tricked by those who know, in the same way, in arguments too, those who are inexperienced in the power of words fall prey to paralogisms both when they themselves take part in the discussion and when they listen to others. Therefore, due to this cause and to those that will be stated later, there are both a syllogism and a refutation which appear <to be such>, but are not.

<div align="right">(SE 1, 165a3–17)</div>

The passage has been commonly misinterpreted because "is not the same" is in an ambiguous position.[13] What are the two cases said not to be the same? There are two possible answers:

1   What happens in discussions versus what happens in calculations
2   What results regarding the words versus what results regarding the objects signified and, respectively, what results regarding the counters on the reckoning board versus what results regarding the objects counted

The first option cannot be correct because the comparison between reasoning and reckoning with the abacus is positively taken up again at the end of the passage. Interpreters who favour the first interpretation do so on the basis of an apparent difference: they think that words can be ambiguous and signify more than one thing, whereas counters or pebbles must be in a one-to-one relation with the objects counted: one pebble, one sheep. But this is not the comparison Aristotle is making, because he is not thinking of simple counting, but of *reckoning* with the abacus. And of course the counters of an abacus, too, are ambiguous, as vividly recognised in these two passages:

> So brief a space of time suffices to exalt and abase men all over the world and especially those in the courts of kings, for those are in truth exactly like pebbles on an abacus. For these at the will of the reckoner are now worth a copper and now worth a talent, and courtiers at the nod of the king are at one moment universally envied and at the next universally pitied.
>
> <div align="right">(Polybius, The Histories 5.26, 13,
transl. Paton, slightly modified)</div>

> He [Solon] used to say that those who were influential with tyrants were like the pebbles employed in calculations; for, as each of the pebbles signified now a large and now a small number, so the tyrants would treat each one of those about them at one time as great and famous, at another as of no account.
>
> <div align="right">(Diogenes Laertius, Lives of Eminent Philosophers,
1.59, transl. Hicks)</div>

Archaeological findings indicate that Greek abaci were made of parallel lines or grooves on which the counters (simple pebbles without any indication of value) were not fixed (unlike the Eastern abaci still in use, in which the beads slide on a rod and cannot move between columns). Lines would indicate the powers (1, 5, 10, 50, 100, etc.) and the ambiguity of the pebbles is explained by the fact that they could be moved from one line to another acquiring different values, as already implied by Solon in the second passage quoted and as confirmed by the slates that archaeologists have identified as abaci. In some cases a numerical symbol is written at the top of each column, but in other cases the lines bear no numerical sign and, unless signs were painted and the colour has faded, the values could be assigned ad hoc by the calculator. A complication is that where the numerical indications are present, they include monetary/ponderal values that disrupt the decimal progression of the rows. These are the signs for talent, drachma, obol, etc. Nevertheless, seen as a system of numerical representation, the abacus is clearly positional, with the empty line playing the same role as the zero in the Hindu-Arabic notation.[14]

The process of reckoning with the abacus is symbolic in the precise sense that the reckoner manipulates pebbles that stand for objects. During the manipulation, the calculator loses sight of the correspondence between the pebbles and the objects but operates on the assumption that what results at the level of pebbles will also result at the level of objects. Likewise, we may say that in reasoning people manipulate words without paying attention to their meanings and draw conclusions on that basis, simply assuming that the same conclusion will also hold at the level of the objects signified.

The suggestion that words are used as counters may sound controversial to say the least: after all, when we reason we use familiar words and understand their meanings even though we cannot carry the objects into the conversation and point to them. But this symbolic use of words is certainly a possibility that Aristotle envisages, as is shown in this other passage:

> For this reason, too, this type of fallacy [form of expression] is to be ranked among those that depend on language; first because the deception befalls more frequently those inquiring with others than those inquiring by themselves (for an inquiry with another person is through speech, whereas an inquiry by oneself is just as much through the object itself [ἡ μὲν γὰρ μετ᾽ ἄλλου σκέψις διὰ λόγων, ἡ δὲ καθ᾽ αὑτὸν οὐχ ἧττον δι᾽ αὐτοῦ τοῦ πράγματος]); second, it happens to be deceived even when inquiring by oneself, when the investigation is conducted at the level of speech [ὅταν ἐπὶ τοῦ λόγου ποιῆται τὴν σκέψιν].
>
> (*SE* 7, 169a36–b1)

Aristotle is explaining why the kind of argument depending on the fallacy of form of expression belongs to the division of linguistic fallacies. He notes that it tends to occur in a verbal exchange proceeding διὰ λόγων because in individual enquiries one rather tends to consider the *pragma*, as well as the words. Presumably,

arguing through the *pragma* means that the object is represented in thought or imagination. However, Aristotle importantly adds that such solitary arguments can also be run ἐπὶ τοῦ λόγου by a solitary thinker who reasons by talking to herself, probably developing the argument in an imagined speech or in an imaginary dialogue.

Perhaps this famous passage of the *Physics* alludes to the same phenomenon:

> It would be ridiculous, however, to try to prove that nature exists; for it is obvious that there are many beings of this sort, and to prove what is clear by what is obscure is the mark of a person unable to distinguish what is known in virtue of itself from what is not such. (This situation is clearly possible. A man blind from birth might syllogize about colours.) It is necessary then that for those in this situation the argument be about the words but they think nothing [περὶ τῶν ὀνομάτων εἶναι τὸν λόγον, νοεῖν δὲ μηδέν].
>
> <div align="right">(Physics II 1, 193a4–9)</div>

The person who can syllogise about colours is born blind and this is a clear indication that she cannot have concepts or images, however vague, but only words.

Interestingly, blind reasoning does not affect mathematical thought, as this passage using the cycle argument as an illustration clearly shows:

> In mathematics paralogism does not occur in the same way, because the ambiguous term is always the middle term; for something is said of all of this, and this again is said of all of something else (of what is predicated one does not say all) and one can as it were see these by thought, though they escape notice in argument. Is every circle [κύκλος] a shape? If you draw one it is clear. Well, is the epic a circle [κύκλος]? It is evident that it is not.
>
> <div align="right">(Arist. Posterior Analytics II 12,
77b27–33, transl. after Barnes)</div>

The cycle argument is not a full mathematical argument, but it is imagined as being delivered in the presence of a diagram eliminating the ambiguity, as in a mathematical demonstration.

Aristotle is interested in the cases in which the two processes, ratiocination and computation, go wrong, and ambiguity is indicated as the culprit. As far as the abacus is concerned, we can reasonably conjecture that the error is a shift of the pebble from one groove to another. For example, when I have five pebbles on the "ten" line, the result is fifty. So I can remove four of them and shift the remaining one to the "fifty" line. If, intentionally or unintentionally, the pebble lands on another line, I have made a mistake that alters the final result. Of course, errors also happen in other ways: for example, by unduly adding or removing pebbles on a single line or, if the lines carry no indication of their value, by misinterpreting the power of the line. However, if he wanted to make the most of the simile, Aristotle must have thought of a mistake depending on the ambiguity of pebbles, that is, on the fact that they change their meaning according to their position.

The analogy with the case of reasoning is not difficult to see. Take again the cycle argument:

(1) Epic poetry is a cycle
(2) All cycles have a saddle
Therefore: (3) Epic poetry has a saddle.

Ignoring the necessary syntactic adjustments, the two linguistic contexts

(1c) Epic poetry is a –
(2c) All – have a saddle

are the analogue of the lines of the abacus, while the word "cycle" is the analogue of the pebble. When one draws the conclusion (3) in symbolic reasoning, the word is "moved" from (1) to (2). To be sure, there is no physical movement: unlike the pebble the word-token does not leave the context (1c) to go to the context (2c). But, to infer (3), the mind must recognise in (2) the same word-type it has seen in (1).

We trust symbolic reasoning on the risky assumption that, whatever it means, the word does not change its meaning. Of course, at the level of the objects under-pinning the argument, this is not correct, because the states of affairs expressed by (1) and (2) (as interpreted by the answerer) are

(1*) Epic poetry is a series of poems composed around a theme
(2*) All vehicles with one, two, or three wheels have a saddle

and they do not necessitate the false conclusion (3).[15]

Putting together the two components A and B according to the general model, we have the analysis of the most problematic and interesting type of the fallacy of equivocation: the case I have outlined in Section 2. It should be borne in mind, however, that in most cases equivocation (especially when caused by polysemous words) is likely to depend no less on the closeness of the two meanings involved than on the identity of the word, so that there is often a confusion of objects or se-mantic contents that causes or facilitates the impression that no shift of meaning has occurred in the premises. Indeed, in cases where the meanings of the ambiguous word are far apart, the respondent is likely to spot the fallacy immediately. But inso-far as we set out to find a model that could justify Aristotle's classification of equivo-cation as a genuinely *linguistic* fallacy (where homonymy is *the* cause, or at least the main cause, of appearance), the two-component model proposed seems to me the most plausible, and the best supported by suggestions scattered across the *SE*.

5. An Alternative Interpretation: Homonymy and Multiple Assertion

Having provided in the previous two sections a detailed vindication of the two components A and B of Aristotle's account of the fallacy of equivocation, I now

turn to an entirely different interpretation, developed by Susanne Bobzien in a comprehensive and in many ways illuminating discussion of the same fallacy in the Stoics.

The comparison between Aristotle and the Stoics is summarised by Bobzien in this passage:

> If we compare Aristotle and the Stoics, we see that they differ both in their philosophico-linguistic analysis of fallacies of homonymy and – consequently – in the strategies they recommend how to tackle them. *Aristotle assumes that in the fallacy the question sentences that contain the homonymous expression, when uttered, have two significations, say two things, and have two statements corresponding to them.* Usually, but not necessarily, one will be true, the other false. . . . The Stoics, on the other hand, assume that the premiss questions of the fallacy, when uttered, have only one signification: the one which rational speakers and listeners in ordinary circumstances would assume them to have, i.e. usually the meaning that makes them true.
>
> (Bobzien 2005: 264, italics added)

In this section I focus on Aristotle; I shall briefly discuss the case of the Stoics in the next. Bobzien's claim is that according to Aristotle the homonymous question is in fact *two* or more questions answered by two or more statements and that, consequently, the person who answers a question containing a homonymous expression with a simple "yes" in fact simultaneously commits herself to the truth of two or more statements corresponding to the disambiguations of the question.[16] Bobzien's contention is based on the following passage, which I divide into two parts. The first part provides the context, while the second articulates the philosophical point:

(I) Since, however, it is unclear whether the respondent who has not distinguished the amphiboly[17] has been refuted or has not been refuted, and in discussions the right to distinguish is recognized, it is clear that granting what is asked without drawing distinctions, but simply, is a mistake; to the effect that even if the person has not been refuted, at least the statement is similar to one that has been refuted.[18] However, it often happens that those who see the amphiboly hesitate to draw distinctions because of the frequency of questions proposing such things – so as not to appear troublesome on every point. Then, not believing that the argument would come about in virtue of that point, they often have to face a paradox.[19] Hence, since the right to draw distinctions is recognized, one should not hesitate, as we said earlier.[20]

(II) If it were not the case that someone made two questions into one question, the paralogism depending on homonymy or amphiboly would not have come about – but either refutation or no refutation. For what is the difference between asking whether Callias and Themistocles are educated and what one would ask if the name were the same for both, although they are distinct? For if the word indicated more than one thing, the questioner has asked more

than one thing. Now, if it is not fair to ask to grant simply one answer for two questions, it is clear that it does not befit to answer simply to any of the homonymous [questions], not even if it is true with respect to all cases, as some [questioners] request.[21] It would not be different if someone had asked, about Coriscus and Callias, whether they are at home or not at home, when either both of them are present or both are not. For in both cases the propositions are several. For it is not the case that if it is true to assert it, the proposition is thereby one. For it is possible that it is true to say simply "yes" or "no" in answer to an infinity of other questions, and all the same one should not answer with a single answer. For it destroys dialectical argument. This is similar to the case where two different things share the same name. So, if one should not give a single answer to two questions, it is clear that one should not say "yes" or "no" in the case of homonyms either. For someone saying that has not even answered the question, but has merely uttered something. However, in discussions it is somehow requested because the consequence goes unnoticed.

(*SE* 17, 175b28–176a18)[22]

In section (I) of the passage Aristotle offers strategic advice to honest answerers who must defend themselves from contentious interlocutors and sophists. The suggestion is to always distinguish an ambiguous expression when they notice it because even if the premiss is true under both interpretations, one never knows and should not lower the guard. So, since answerers have the right to distinguish the meanings they should make full use of it, even at the cost of appearing cantankerous. Aristotle knows that many respondents may feel the pressure of the opponent and the audience to stop making useless distinctions because they disrupt the natural flow of the discussion. And many of these distinctions will indeed be useless because they are made, as pre-emptive moves, in anticipation of an actual equivocation. The criticism these pernickety respondents tend to attract is perfectly rendered by this passage from the pseudo-Ciceronian *Rhetorica ad Herennium* cited by Dorion (1995) in his note on the *SE* 17 passage:

> There are some who think that for the development of this kind of cause a knowledge of amphibolies as taught by the dialecticians is highly useful. I, however, believe that this knowledge is of no help at all, and is, I may even say, a most serious hindrance. In fact these writers are on the lookout for all amphibolies, even for such as yield no sense at all in one of the two interpretations. Accordingly, when some one else speaks, they are his annoying hecklers, and when he writes, they are his boring and also misty interpreters. And when they themselves speak, wishing to do so cautiously and deftly, they prove to be utterly inarticulate. Thus, in their fear to utter some ambiguity while speaking, they cannot even pronounce their own names.
>
> (2.16, transl. Caplan)

Aristotle's advice is the opposite. He insists that in such verbal exchanges the respondent should not give into the temptation to grant premisses that seem harmless

without distinguishing the meanings. In more cooperative dialectical encounters, however, his prescription is different:

> When the question is clear but is said in several ways, if what is said is true or false with respect to all ways, one should grant it or deny it simply, whereas if what is said is in one case false and in the other true, he should indicate that it is said in several ways, and that in one it is false, in the other true. For if he makes the distinction only later, it is unclear whether he had seen the ambiguity also at the beginning.
>
> (*Top.* VIII 7, 160a23–9)

In section (II) of the *SE* 17 passage, Aristotle argues that the practice of granting without distinction premises containing ambiguous terms is equivalent to answering two questions fused into one, like "Are Callias and Themistocles educated?" Bobzien seems to believe that Aristotle really countenances the possibility of such multiple questions as a legitimate dialectic and discursive move.[23] Aristotle's warning to the reader would then be: hasten to make the distinction; otherwise, you will commit yourself to two or more claims (depending on the number of meanings), and you will be successfully refuted. Indeed, under certain combinations of the different interpretations of the premises, the argument will go through. For example, by granting without distinction the premises of the cycle argument, the respondent commits herself to all of

(1*)   EPIC POETRY IS A SERIES OF POEMS COMPOSED AROUND A THEME
(1**) EPIC POETRY IS A VEHICLE WITH ONE, TWO, OR THREE WHEELS
(2*)   ALL VEHICLES WITH ONE, TWO, OR THREE WHEELS HAVE A SADDLE
(2**) ALL SERIES OF POEMS COMPOSED AROUND A THEME HAVE A SADDLE.

And of course the combinations (1*) + (2**) and (1**) + (2*) do yield the desired conclusion.

But this is not Aristotle's point. First of all, in (I) Aristotle says that the refutation depending on homonymy "is not clear", in the sense that it is not clear whether the respondent has been really refuted (see also 175a31–b14). The argument might look like a refutation, but it is not one. If Bobzien were right, Aristotle should have said that the respondent who fails to make the distinction is genuinely refuted. Moreover, section (II) of the passage is not a description of the consequences faced by a respondent who gives a simple answer to an ambiguous question, but rather a philosophical explanation of why such answers are not legitimate. Aristotle wants to provide his pupils with a good rejoinder to be used against certain questioners when they claim the right to receive a simple answer.

In part (II) Aristotle shows that asking a question containing a homonymous term is tantamount to making two questions into one – and this is the fallacy of many questions, one of the seven nonlinguistic fallacies discussed in the *SE*.[24]

Aristotle develops the analogy between homonymy and many questions in order to show that both fallacies undermine the very nature of a *protasis*.

Let us now consider the implications of this philosophical point in greater detail. In section (II) of the *SE* 17 passage Aristotle claims that a multiple simultaneous assertion is not a felicitous speech act but a mere utterance. His reason lies in the intimate connection he sees between asserting and thinking or judging, as emerges from a comparison between the claim in section (II) that

> it is possible that it is true to say simply "yes" or "no" in answer to an infinity of other questions, and all the same one should not answer with a single answer. For it destroys dialectical argument.

and a passage of *Metaphysics* IV:

> Further if "human" signifies one thing, let this be two-footed animal. I mean by "signifying one thing" that if human is this, then insofar as anything is human this will be the being for human. But even if someone were to say that the name involved signifies more than one thing, it makes no difference, provided that these were definite, since to each account a distinct name could be assigned. I mean, for example, if someone were to say that "human" signified not one thing but several things, and the account of one of these were "two-footed animal", although there were also several other accounts of it, but a definite number of them. For a special name could be assigned to each account. If, however, he did not assign that way, but instead said that "human" signified an infinite number of things, it is evident that no argument would be possible. For not to signify one thing is to signify nothing, and if names do not signify, discussion with others is done away with, as in truth it is even with ourselves. For it is not possible even to understand without understanding one thing. On the other hand, if it is possible, then one name could be assigned to this thing.
>
> (*Metaphysics* IV 4, 1006a32–b11, transl. Reeve)

Despite the obvious family resemblance, however, the argument of the *Metaphysics* is not exactly the same as the argument in *SE* 17. In particular, the role played by infinity seems different. In the *Metaphysics* it is not immediately clear why one could not countenance an infinite number of meanings, provided that the speaker can isolate the particular meaning she is interested in. Maybe Aristotle thinks that, in order to understand a word in a verbal exchange, the hearer might need to be able to run through all of the meanings and choose the appropriate one. This would certainly be impossible if they were infinitely many. By contrast, in the *SE* passage Aristotle claims that if you can make two statements at the same time, you can equally make infinitely many statements. This absurd consequence suggests that in a multiple assertion the speaker does not have proper cognitive control over what she is saying, so saying two things at the same time or infinitely many would be the same. This is why the speaker is merely *uttering* something. The argument makes

better sense if we are allowed to apply to the *SE* the final remark of the *Metaphysics* passage. There Aristotle claims that it is impossible to *think* without thinking *one* thing, and this, albeit implicitly, seems a key assumption of *SE* 17 too.[25]

It will be objected to this interpretation of part II of the *SE* 17 passage that in *Topics* VIII 7 and in *SE* 30, 181a39–b7 Aristotle concedes that a simple answer to a multiple or to an ambiguous question can in effect be given when both disambiguations of the question, or both statements answering a multiple question, are true. Doesn't this mean that these answers are felicitous speech acts after all? As I said, I take part II of the *SE* 17 passage as a theoretical claim against the absurd request of certain dialecticians. Aristotle's claim, however, does not imply that it is impossible to engage in a successful dialectical discussion without distinguishing the ambiguities. We have seen that he envisages a role for speaker meaning. So it is reasonable that in the cooperative games of gymnastic dialectic discussed in the *Topics* the questioner will recognise and respect the respondent's intention. In most cases this will not require an explicit distinction, because only in one sense is the answer contextually rational and compelling (although a question for clarification is always admitted). On the other hand, in *SE* 30, a chapter devoted to the fallacy of many questions, the simple answer to a multiple question is not recommended. It is only said that when the two questions are both true this kind of mistake (though still a mistake!) does not lead the respondent to contradict herself (181b5–6).

It therefore seems clear that Bobzien's interpretation cannot be right: Aristotle does not believe that granting a multiple/homonymous premiss *simpliciter* would simultaneously commit the answerer to two claims, because he thinks that granting a multiple/homonymous premiss is a speech act only in appearance and the respondent has "merely uttered something". Commenting on the passage of *SE* 17, Jacques Brunschwig (1999: 84–5) noted that Aristotle's remarks on multiple questions indicate an idiosyncratic grasp of conjunction:

> On peut remarquer, à ce propos, qu'il ne semble pas venir à l'esprit d'Aristote que si deux propositions simples sont conjointes, on peut considérer leur conjonction comme une proposition non simple mais cependant unique, et susceptible comme telle d'être soit vraie soit fausse. . . . On connaît là, bien sûr, la proposition conjonctive, *schēma sumpeplegmenon*, des Stoïciens.

To be sure, when we read "For it is not the case that *if it is true to assert it*, the proposition is thereby one" (cf. also *De Interpretatione* 11, 20b26), we may infer that Aristotle identifies (or conflates) a multiple assertion (two truth values) and a conjunctive assertion (one *single* truth value). But, as Aristotle immediately explains, even this identification is not sufficient to confer to the assertion the unity that makes it a single act of propositional *thinking* and so a meaningful move in the dialectical game. So Bobzien must be wrong in attributing to Aristotle's respondent a commitment to multiple statements.[26] Typically, Aristotle's respondent who gives a plain answer has tacitly disambiguated the premiss by intending it in only one of the meanings. In fact, however, her plain answer covers all the possible meanings,

thus making her speech act infelicitous. This is why the refutation she incurs is merely apparent.

6.   Are Aristotle and the Stoics Really Far Apart?

Bobzien develops her interpretation of the Aristotelian analysis of the fallacy in contrast to the Stoic account. But I have argued that her interpretation of Aristotle is not tenable. I now wish to show that one crucial component of the alternative account I have attributed to Aristotle, i.e. symbolic reasoning, may be required for the explanation of the Stoic analysis as well.

The Stoic account of ambiguity must be reconstructed from a single passage in Simplicius:

> This is why the dialecticians advise to be silent in the case of syllogisms based on homonymy until the questioner transfers the ambiguous word to another signification. For example, if someone asks whether the garment is ἀνδρεῖος [manly/for men], if it happens to be ἀνδρεῖος, we will concede this. And if he asks whether being ἀνδρεῖος is being courageous, we will concede this, too, for it is true. But if he infers that the garment is therefore courageous, at that point we must divide the homonymy of the word "ἀνδρεῖος" and show that it is said in one way in the case of the garment, in another in the case of the one who has manliness.
>
> (Simplicius, *Commentary on the Categories*, 24.9–21)[27]

This is the argument (with the homonymous term left in Greek), followed by the small-cap interpretation of the premises suggested in the passage:

The garment is ἀνδρεῖος
Being ἀνδρεῖος is being courageous
Therefore the garment is courageous

THE GARMENT IS FOR MEN
BEING MANLY IS BEING COURAGEOUS
THE GARMENT IS COURAGEOUS

The example and part of the terminology are clearly Stoic (cf. Galen *De Captionibus* 595 Kühn), but the argument is shaped as a categorical syllogism, which indicates that a Stoic original has undergone adaptations, probably in order to be usable in a more neutral or Platonico-Aristotelian didactic context. Scholars such as Ebbesen, Atherton, and especially Bobzien have done a good job of eliminating the encrustations and returning the argument to its pristine Stoic shape. Ebbesen (1981: I, 31–2) has pointed to a passage in Augustine's *De dialectica* (Chapter 9), where it is denied that an ambiguous word retains its plurality of significations when it occurs in a sentence. In our passage this idea would justify the advice to grant each premiss on the assumption that in the context they are not ambiguous.

Bobzien notes that it is not just that the context disambiguates but that with a linguistic context the word spontaneously contributes to express the sayable (*lekton*) and assertible (*axiōma*) which is true. So if one meaning of the word yields a truth and the other a falsehood (the case that normally generates fallacies), the latter meaning is automatically ruled out. Bobzien stresses that this is not a mental or psychological selection, and there is no speaker meaning involved. The answerer plays no role other than recognising and granting a truth.

Thus, the premisses can only be interpreted as

The garment is ἀνδρεῖος
THE GARMENT IS FOR MEN

Being ἀνδρεῖος is being courageous
BEING MANLY IS BEING COURAGEOUS

And of course the conclusion desired by the questioner is

Therefore, the garment is courageous
THE GARMENT IS COURAGEOUS

How can this conclusion be inferred from the premisses so disambiguated? Since for the Stoics the questioner is reasoning with assertibles and not manipulating words, the argument seems disconnected.[28] The passage, however, clearly indicates that there is a relation between the transferring of the word to another meaning and the drawing of the conclusion. But what exactly is this relation?

If, as Bobzien contends (2005: 257), the questioner introduces another assertible in order to draw the conclusion, we have THE GARMENT IS MANLY replacing THE GARMENT IS FOR MEN. With this assertible the conclusion can be validly inferred. By this move the questioner transfers the word to another meaning and this enables her to infer the conclusion validly (albeit from a false premiss). If this is the way the fallacy works, one wonders how the new assertible can be introduced. It seems to be an arbitrary and unilateral *mental* act of the questioner, which involves no new speech act and cannot be a late product of the previous concessions. At some point the assertible THE GARMENT IS MANLY mysteriously enters on stage, while THE GARMENT IS FOR MEN leaves the scene without resistance.

It seems to me that the transferring of the word to another meaning cannot be the product of the introduction of another *axiōma* but must be the result of the drawing of the conclusion. Indeed, it is precisely by drawing the conclusion that the questioner transfers the word to another meaning, and this is why it is exactly at that point that the answerer must distinguish the different significations. This makes good sense if the transferring of the word to another meaning is the result of a phenomenon of the kind I have described as symbolic reasoning. After the two propositions have been granted, the very act of *inferring* the conclusion requires that the word "ἀνδρεῖος" occurring in the first premiss be recognised in the second premiss as if it had the same meaning (whatever it is), although in fact it is transferred to another signification, because the underlying proposition has not changed.

This transference invalidates the inference and signals that the time has come for the answerer to make the distinction ("at that point we ought . . .", namely, when "he infers").

If this is a reasonable interpretation, then the evidence we have is mixed. On the one hand, component B of Aristotle's analysis of the fallacy of equivocation is clearly envisaged in the passage with an essential explanatory role. On the other hand, the advice to keep silent until the conclusion has been (or is being) drawn is a clearly Stoic trademark. Although the verb ἡσυχάζειν is probably used in different ways in Stoic dialectic, the spirit of this piece of dialectical advice is to act without irrational precipitancy.[29] And if the Stoic standpoint is that premisses containing an ambiguous word are not ambiguous, it is just rational to grant them and hold back the protest until an error has actually been made. But, as Bobzien correctly notes, this is at odds with Aristotle's advice to distinguish the ambiguous term as soon as possible as a pre-emptive move.

However, even when this important difference is given due emphasis, it remains true that the best interpretation of the transference of the word to another meaning is in terms of symbolic reasoning. Unless we are prepared to invoke the influence of the Aristotelian model on Simplicius or his sources, this indicates an important convergence of the two accounts.[30]

This Stoic detour may not be a mere digression after all. If the Stoics had to comply with the two-component model, then it would seem that it is very compelling in its own right, which in turn provides another reason for attributing it to Aristotle.

Acknowledgements

Notes

1 What Aristotle calls ὁμωνυμία for the most part consists in a multiplicity of *literal* meanings of the same word. But he also refers to linguistic "habit", thus opening the discussion to cases where at least one of the meanings is not literal but only sanctioned by usage (*SE* 4, 166a16–7; cf. *Poetics* 25, 1461a27–30). However, little attention is paid in the *SE* to the phenomenon linguists now call "polysemy", which arises when instances of a linguistic expression have multiple *related* senses; it is explicitly contrasted to "homonymy", a label now reserved for cases of distinct but unrelated meanings (see Carston 2021). While elsewhere Aristotle proves himself to be aware of this very distinction (*Nicomachean Ethics* V 1, 1129a26–31) and, indeed, his entire philosophical work could be described as an extended study in polysemy, we cannot say the latter receives any special attention in the *SE*.

2 On Combination and Division see Schiaparelli (2003) and Hasper (2009).

3 On this problem see Hasper (2013: 39–41); Di Lascio (2013: 76–8).

4 Blind or symbolic reasoning can be seen with Kirwan (1979: 38) as a form of the *schematic* reasoning of formal logic.

5 Kirwan (1979); Bobzien (2005); Iacona (2010); Malink (2014).

6 I lack the space here to discuss other aspects of the fallacy. For example, *SE* 8 and 22 clearly indicate that in all kinds of fallacies eristic questioners try to trigger a false implicature. In the case of equivocation, this would be a false implicature to the effect that the word is not ambiguous (see *SE* 8, 170a13–7). And this can be achieved simply by proposing the word twice in the argument, as in the cycle example, in a way that invites the inference. Because she has implicated the claim that the word has the same meaning in both premises *as if the idea had been conveyed by the questioner*, the respondent will lower her guard and accept that the conclusion follows from them. Indeed, the false implicature may induce the respondent to switch to the mode "blind reasoning" and blindly second the deduction of the conclusion. Notice that the questioner has not committed herself to the univocity of the word, but this does not mean that she has refuted the respondent. Aristotle repeatedly says that the respondent is genuinely refuted only when the content of the implicature is explicitly granted as an additional premiss, which, though false, renders the refutation valid. But he is also aware that in the case of linguistic fallacies, when respondents are asked to grant the additional premiss they immediately spot that it is false (*SE* 8, 169b33–7); see Fait (2013), and for a related but different approach see Schreiber (2003).

7 See Carston (2021) for a survey of these issues.

8 See Cherniss (1944: 57 n. 47) and, for a more detailed argument, see Tarán (1981: 414–18). In Tarán's collection of Speusippus' fragments, *SE* 10 is Fr. 69a. See also Fait (2007: 141–3).

9 Although its interpretation is not significantly affected, the text at 170b19–26 is very problematic. In Fait (2007: 144) I reject most emendations of Ross' OCT and seclude two phrases, as suggested to me by the late Jacques Brunschwig in correspondence. For a different proposal, see Hecquet (2019: 180). For an attempt to defend the text of the manuscripts see Ferroni and Gili (2018). The readings of the MSs are also accepted by Tarán (1981).

10 Giannantoni (1990: II F 7); in particular Gellius, *Attic Nights* XI 12.1–3.

11 Equivocation of simple sentences, rather than of argumentative discourse, is not examined by Aristotle. For a discussion of some interesting examples see Saul (2012: 109–14).

12 For a defence of the role of speaker meaning in dialectic invoking the pragmatic notion of "common ground", see King (2021: 939–50). King's key text is *Top*. I 18, 108a18–26, a passage clearly echoing the distinction criticised in *SE* 10.

13 For this interpretation see Fait (1996), and now Gazziero (2021). The latter offers a discussion of virtually all the sources on computations with the abacus in ancient Greece.

14 See Fait (1996) and Gazziero (2021). For examples of computations with the abacus see Lang (1957).

15 This description of symbolic reasoning is reminiscent of Leibniz's notion of "deaf" or "blind" reasoning. For relevant passages in Leibniz, see Fait (1996: 190 n. 26), and for discussion of blind reasoning, see Favaretti Camposampiero (2007).

16 Bobzien (2005: 260–3). For a somewhat similar interpretation, see Hasper (2013: 42).

17 "Amphiboly", b29 and 34: Aristotle should also mention homonymy: see 175a37, 41, b7 and b40. Aristotle is simply careless.

18 Cf. *SE* 17, 175a40.

19 "A paradox", b35: even supposing that the ambiguous question has nothing to do with the thesis, the questioner can cling to a false or paradoxical interpretation of the answer because it has not been ruled out at the right moment. This is enough to produce a paradox (see *SE* 12).

20 Probably *Top*. VIII 7.

21 τινες, 176a6: assuming that Aristotle must be referring to thinkers dealing with the art of dialectic, Dorion (1995: 30–1); Brunschwig (1999: 87–91) and Crivelli (2004: 179)

think that the passage is in conflict with *Top.* VIII 7, 160a23–9 (cited in the following) and conclude that Aristotle must have changed his mind. The conflict vanishes if we take these individuals at 176a6 to be *questioners* insisting that the answerer should give a simple yes/no answer.

22 On the complex argumentative structure of *SE* 17 see Fait (2007: 177–82).

23 Granted, Bobzien (2005: 262) sees that Aristotle finds the simple answer "no answer at all", but she fails to draw the consequences of this claim.

24 We find the same parallelism at *SE* 30.

25 Kirwan ([1971] 1993) criticises Aristotle for overlooking here the phenomenon of *double entendre,* as in "has or will burst".

26 Bobzien (2007) argues that *De Interpretatione* 8, 18a18–26 is about ambiguity and parallels *SE* 17. On *De Interpretatione* 8 and 11 see especially Crivelli (2004: 155–8, 176–9).

27 διὸ καὶ ἐν τοῖς παρ᾽ ὁμωνυμίαν συλλογισμοῖς ἡσυχάζειν οἱ διαλεκτικοὶ παρακελεύονται, ἕως ἂν ἐπ᾽ ἄλλο σημαινόμενον ὁ ἐρωτῶν μεταγάγῃ τὸ ὄνομα. οἷον, εἴ τις ἐρωτᾷ εἰ ὁ χιτὼν ἀνδρεῖος, εἰ τύχοι ἀνδρεῖος ὤν, συγχωρησόμεθα. κἂν ἐρωτήσῃ εἰ ὁ ἀνδρεῖος εὔψυχος, καὶ τοῦτο συγχωρησόμεθα, ἀληθὲς γάρ. εἰ δὲ συναγάγῃ ὅτι ὁ χιτὼν ἄρα εὔψυχος, ἐνταῦθα τὴν ὁμωνυμίαν τοῦ ἀνδρείου διαστείλασθαι καὶ δεῖξαι [τὴν ἀνδρείαν ἤγουν τὴν εὐψυχίαν] ὅτι ἄλλως μὲν ἐπὶ τοῦ χιτῶνος, ἄλλως δὲ ἐπὶ τοῦ τὴν ἀνδρείαν ἔχοντος λέγεται.

28 In the technical sense defined in Stoic logic, on which see Atherton (1993: 424–31).

29 Bobzien (2005: 264–71) examines other interpretations of the verb ἡσυχάζειν whereby it is taken according to the meaning it has in Sextus Empiricus, Gellius, and Plutarch in connection with the Sorites. Atherton (1993: 422–4) argues that the advice is to keep silent and assent to the premises only in one's mind. I agree with Bobzien that this is implausible. On the other hand, Bobzien envisages two alternatives she deems equally plausible: one is the non-technical interpretation favoured by most translators (which I have adopted in the translation); the other corrects μεταγάγῃ into μετάγῃ (with two MSs) and renders ἕως as "while". The idea is that the respondent must fall silent "while the questioner transfers the word". This means, according to Bobzien, that the respondent should stop answering when the questioner asks her to grant the conclusion and instead make the distinction of the meanings of "ἀνδρεῖος". In order to support this second possibility, it would be helpful to show that in Stoic dialectic the conclusion is proposed to the answerer for acceptance. Aristotle's advice is the opposite: never ask the conclusion but draw it as something the opponent is obliged to accept (*Top.* VIII 2, 158a7–14), and this is reasonable if logical necessity is a form of rational coercion. Offering up the conclusion for confirmation would be mere politeness. All things considered, the non-technical solution strikes me as the most attractive: "to be silent" must not refer to the premises (for both must be openly granted!) but only to the distinction, which should not be made until the questioner transfers the word onto another signification.

30 An influence of Aristotle's theory of fallacies on the Stoics is another option we should not be too quick to rule out. See Ebbesen (1995: 245) *contra* Atherton for a convincing example.

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13 On the Fallacy of Accident in Aristotle's *Sophistical Refutations*[1]

Paulo Fernando Tadeu Ferreira

At *SE* 5 166b28–30, Aristotle says that a fallacy of accident takes place whenever something is held to belong in the same way to an object and to its accident. One example is the following (166b33–6),

Coriscus is different from Socrates
Socrates is (a) man
———————————————
Therefore, Coriscus is different from man,

where *man* is said to be accidental to *Socrates* (166b35–6).

The notion of accident in force here does not correspond to the usual distinction between essential and accidental features. Otherwise, how could an attribute such as *being a man* be said to be accidental to *Socrates*? What I call the Received View about Aristotle's fallacy of accident, championed among others by Hamblin (1970: 85), Mignucci (1985: 75), Bueno (1988: 10), Dorion (1995: 233) and Hintikka (2004: 119–20), correspondingly takes "accident" in that connection to stand for any predicate that is not identical to its subject, and makes Aristotle's fallacy of accident consist in mistaking predication for identity – in the example, in taking the predicate *man* as identical to its subject in the second premise, which in turn allows for the substitution of *Socrates* in the first premise.

The Received View is founded not on a clear-cut distinction explicitly made by Aristotle between predication and identity whether in context or elsewhere but rather on an interpretive move concerning the meaning of "accident" which is tailored to suit a particular take on the fallacy. But although it is an essential ingredient in our Fregean mother's milk, such a distinction between predication and identity should not be taken for granted in Aristotle:

First, Aristotle never distinguishes between the "is" of predication and the "is" of identity.[2] And if he did, the fallacy of accident would as a result turn on the homonymy of "is", in which case it would be hard to see how it might fail to be a fallacy dependent on language, which Aristotle makes clear it is not.[3]

Second, although it is not necessary to distinguish meanings of "is" in order to distinguish between predication and identity,[4] Aristotle's semantic and metaphysical underpinnings not so readily fit the bill:

For Aristotle, terms such as τὸ λευκόν signify either the accident (the color white) or its bearer (the white item).[5] And in passages such as *Met.* V 9 1017b27–30, Aristotle holds (with a qualification we shall appreciate presently) that

> some items are said to be the same thing by accident, for example the white item and the musical item are the same thing because they are accidental to the same thing, and a man and a musical item [are the same thing] because the one is accidental to the other (but the musical item is a man because it is accidental to the man).

According to Aristotle, that *the man is musical* grounds both that *the musical item is a man* and that *a man and a musical item are the same thing* (note that ἄνθρωπος καὶ μουσικόν at b29 do not take the definite article and pick up τὸ αὐτό from the preceding line). But not only is grounding asymmetry consistent with necessary equivalence between e.g. "a/the man is musical" and "a/the man is the same thing as a musical item";[6] also, statements to the effect that A and B are the same thing need not be construed as statements to the effect that A and B are different *names* of the same object rather than as expressing a relation between different objects – individuated each by a distinctive *framing*, with distinctive identity and existence conditions – either coinciding in a substratum (as *the white item* and *the musical item* are the same thing because they are accidental to the same thing) or the one being the substratum of the other (as *a musical item* and *a man* are the same thing because the former is accidental to the latter). In the alternative view, framing is not just a feature of how one designates or presents the object but is constitutive of the object (as either *Socrates*, (*Plato's*) *teacher*, (*Xanthippe's*) *husband*, *musical item*, *white item*, and so forth) and makes a difference as to whether an object belongs of necessity, by accident, or even not at all to another either in itself or *qua* yet another thing (as *man* belongs of necessity to Socrates *qua* himself but by accident to Socrates *qua* different from Coriscus). Objects thus conceived are called *kooky objects*[7] or *qua objects*[8] in the literature – or rather, *musical item* and the like are simple kooky objects, distinct from compound kooky objects such as *musical man* in that the latter is essentially musical and essentially a man, whereas the former is essentially musical but not essentially a man;[9] and *Socrates qua Socrates* or *Socrates qua different from Coriscus* are *qua* objects.

Taking the fallacy of accident as a failure to distinguish between predication and identity makes for a familiar analysis and an elegant solution, but also for a fallacy one would hardly commit, as e.g. *Socrates is white, white is a colour, therefore Socrates is a colour*. What is more, such a proposal gives "accident" (συμβεβηκός) a meaning otherwise unattested in the corpus; makes fallacies of accident inconclusive (from *Coriscus is other than Socrates* and *Socrates is a man*, it does not follow that *Coriscus is other than a man*), whereas for Aristotle the conclusion fails to hold of necessity on the basis of the premises (*SE* 5 166b30–2; 6 168a38–40; 24 179a27–31, 35–7), which in turn is compatible with its indeed following from the premises; also does not cover some cases of the fallacy of accident in the *SE*, for which a different analysis and solution has to be provided; and does not square with

Aristotle's own proposed solution of the fallacy in terms of sameness or difference in substance and being (*SE* 24 179a37–9; also *Phys*. III 3 202b14–6).

In the alternative proposal, the fact that on the basis of features essential to object A some consequences hold of necessity, whereas others do not, but follow on the basis of the fact that object A and object B are the same thing, explains why it is that the fallacy of accident in the *SE* is about what necessarily or otherwise holds on the basis of the premises, irrespective of whether the statement in the conclusion itself holds necessarily or not (*SE* 6 168a38–40); and also explains why it is that only once an object with the same essential features is substituted the same consequences hold of necessity, which is the gist of Aristotle's solution and picks out cases in which substitution not only of co-extensives but also of necessary equivalents fails to yield a necessary conclusion. Moreover, the analysis admittedly does not cover a traditional but later example (*Socrates is white, white is a colour, therefore Socrates is a colour*) which is found in commentators such as Michael of Ephesus and may indeed be solved by means of a distinction between predication and identity, but is not found in Aristotle's corpus and should be addressed instead in terms of the earlier disambiguation of "white" as either *a colour* or *a coloured item* (which, I think, is an advantage of the alternative reading); and it does cover cases which in Aristotle's view fall under the fallacy of accident, exhibit remarkably different features and cannot be solved by means of a distinction between predication and identity, e.g. cases featuring opaque contexts (*you do not know the veiled one to be your father, the veiled one is (the same as) your father, therefore you do not know your father to be your father*) or involving composition (*the slave is yours, the slave is a son, therefore the slave is a son of yours*). The common factor, in Aristotle's words, is the presence of a relation in the reasoning: *sameness, difference, cause–effect, owner–possession, knower–object known, sign–thing signalled*, etc. According to Aristotle, a relation must always specify its proper relata in order for reciprocation between the relata to hold, and a fallacy takes place whenever, due to an unwarranted substitution, reciprocation fails to (necessarily) hold between the relata. Aristotle's solution is the same in all cases: since a relatum's being *qua* relatum just is its being so-and-so related to its correlate, only substituting something that is the same in being with it yields a necessary conclusion.

In what follows, I shall inspect Aristotle's views in the *Sophistical Refutations* as well as trace additional elements from other works in order to substantiate the reading just sketched. On occasion, I will allow extraneous elements such as the notion of *distribution* (of a term) as expedient abbreviations, but since no decisive point hinges on their use, their import shall be immaterial. All translations are mine.

* * * *

I begin with the example from *SE* 5 166b33–6:

> If he [*scil.* Coriscus] is different from Socrates, and Socrates is a man, they say that it has been agreed on that he is different from man in virtue of the fact that it is accidental for the one he is said to be different from to be a man.

Note that the object to which *man* is said to be accidental in the text is given not as *Socrates* but as *the one Coriscus is said to be different from*, which suggests that what is in that connection said to be accidental is not accidental to Socrates *qua* himself but in a relation. The relation – "Coriscus is different from Socrates" – may be parsed as either "Coriscus is an item different from Socrates" or "Socrates is an item Coriscus is different from" so as to form in each case a complex term out of the relative term "different from" and one of its relata.[10] And in the latter case we have,

item Coriscus is different from belongs to *Socrates*
man belongs to *Socrates*
Therefore, *item Coriscus is different from* belongs to *man*.[11]

There are two reasons for framing the inference in this way:
    First, it conforms to Aristotle's general account of the fallacy of accident at *SE* 5 166b28–30:

> Paralogisms caused by the accident take place when any chance thing is held to belong in the same way to the object and to its accident.

The inference pattern, I submit, corresponds to the schema

predicate belongs to *object*
accident belongs to *object*
Therefore, *predicate* belongs to *accident*,

according to which the fallacy in the example takes place once *being an item Coriscus is different from*, which is held to belong to *Socrates* in the major premise, is held to belong in the same way, and as a consequence, to Socrates' accident *man* in the conclusion. Note that the inference pattern is the same in the immediately following lines (166b30–2), except that "all the predicates" and "all the same things" there (and also in *SE* 7 169b3–6) correspond, respectively, to *accident* and to *predicate* in the schema:

> For, since many things are accidental to the same item, it is not necessary that all the same things[12] belong to all the predicates and to what [all the predicates] are predicated of.

Second, the general account conforms to a rule of inference from *Cat.* 5 3a1–6:

> And as the primary substances stand to all other items, so the species and the genera of the primary substances stand to all the rest. For all the rest is predicated of them: you shall say that the singular man is grammatical, therefore

you shall say that both man and animal are grammatical – and the same holds good in other cases.

In such an inference from a predicate's belonging to a singular item to the predicate's belonging to the species and the genera of the singular item, terms such as *man* and *animal* are to be taken, I submit, as universals stated in a non-universal way, as in *De Int.* 7 17b8–11:

> By "to state of universals in a non-universal way" I mean, for example, "man is white", "man is not white" – for although man is a universal, the statement is not used in a universal way.

A statement about universals made in a non-universal way may convey the same content as either a universal or a particular statement: it is in principle indeterminate between the two.[13] Taking the rule of inference from *Cat.* 5 3a1–6 along such lines, *grammatical* is said of both *man* and *animal* because it is said of a singular item that is both a man and an animal and is said at least of *a* man and of *an* animal because the singular item it is said of is both a man and an animal.

Thus, according to the rule of inference from *Cat.* 5 3a1–6, if a singular item that is (the same as) a member of a given species or genus receives a given predicate, then at least a member of that species or genus receives that predicate. But if so, then *item Coriscus is different from* indeed belongs to *man* since it belongs to a singular item that is (the same as) a man.

Two points should be considered in order to understand that result:

First, statements about universals made in a non-universal way are such that, if a singular item satisfies the affirmation and another singular item satisfies the denial, then affirmation and denial are true at the same time, as is made clear in *De Int.* 7 17b30–7:

> It is true to say jointly "man is white" and "man is not white", "man is beautiful" and "man is not beautiful". . . . At first blush, that might be reputed to be absurd, in virtue of the fact that "man is not white" appears to signify jointly that "no man is white", but it is not necessary either that it signifies the same [as the other] or [that it signifies the other] jointly.

Thus, although it is true that Coriscus is different from a man, it is also true that Coriscus is the same thing as a man, since he is a man.

Second, since the true statement "man is an item Coriscus is different from" could in principle be taken as equivalent to the false statement "every man is an item Coriscus is different from" in virtue of the indeterminate character of statements about universals made in a non-universal way, a distinction is necessary with respect to (as it later came to be called) the distribution of the term *man*,[14] to the extent that *item Coriscus is different from* indeed belongs to both *Socrates* and *man*, but not in the same way (ὡσαύτως), in accordance with Aristotle's general account of the fallacy of accident at *SE* 5 166b28–30. In order to appreciate the role

of the clause "in the same way", a clarification of the meaning of "accident" with respect to Aristotle's views on correlatives shall be of use.

In *Cat.* 7 6b28–7b14, Aristotle claims that properly rendered correlatives reciprocate: a slave is the slave of a master as a master is the master of a slave. In 7a22–b9, Aristotle contrasts properly rendered correlatives with items accidental to either of them and gives *biped*, *receptive of knowledge*, and *man* as accidental to *master* (7a29, 36–7):

> All relatives, as long as they are properly rendered, are said to be relative to items that reciprocate. For if they are rendered as relative to a chance item, that is, not relative to that item they are said to be relative to, they do not reciprocate. I mean, none of the items admittedly said to be relative to items that reciprocate, even if names have been set down for them, do not reciprocate if they are rendered as relative to something accidental, that is, not relative to that item they are said to be relative to. For example, slave, if it is rendered not as of master but as of man or biped or any such thing, does not reciprocate, for the rendering is not proper. Moreover, in case it has been properly rendered as relative to that item it is said to be relative to, when everything else which is accidental is taken away and that only remains as relative to which it is properly rendered, it will always be said to be relative to that. For example, if slave is said as relative to master, when other things which are accidental to master are taken away, such as being biped, being receptive of knowledge and being a man, and only being a master remains, slave will always be said to be relative to that, for a slave is said to be a slave of a master. But if it is not properly rendered as relative to whatever it is said to be relative to, when other things are taken away and that only remains as relative to which it has been said, it will not be said to be relative to that. Let slave be said of man . . . and let master be taken away from man – then slave will no longer be said of man, for if there is not a master there is not a slave either.

Aristotle's point is perspicuous: correlatives reciprocate, but only insofar as they are rendered in accordance with that which puts them in relation with each other. Since it is just because the one is a master that the other is a slave and vice versa, things are called "accidental" in that connection which are not necessarily accidental to the correlated items in themselves but are not otherwise at stake as pertains to the items' relation with each other. Taking a correlative in terms of something thus understood as accidental is sufficient to preclude reciprocation because the items' correlation will be lost on that end.

Now in *Top.* VI 12 149b4–12, Aristotle claims that taking a relative as relative not to what it is said to be relative to but to something more extensive, say *medicine* as *knowledge of being*, yields a falsehood only "to some extent" (ἐπί τι),

> for it must be [knowledge] of all [being] if indeed it is said to be [knowledge of being] in itself and not by accident (as holds good in the case of

the other relatives), for every object of knowledge is said to be relative to knowledge. And the same holds good also in the other cases, since all relatives reciprocate.

The point, I submit, is that in the absence of a qualification to the effect that the predicate holds by accident, a statement such as "Medicine is the knowledge of being" is taken as equivalent to "Medicine is the knowledge of every being" because reciprocation is supposed to hold for every item falling under the terms correlated as *knowledge* and *object of knowledge* in the statement. Such a qualification instead blocks the distribution of "being" insofar as it marks "being" as accidental to the correlation between medicine and its object and thus implies that medicine is said to be the knowledge of being only to the extent that it is the knowledge of some beings and not others.

The same rationale applies to *Metaph*. I 1 981a16–20, where *man* is said to be accidental to *Callias*, *Socrates* and others:

All actions and generations take place in the domain of the particular, for the doctor does not cure man unless by accident, instead he cures Callias, Socrates or some of the others thus said, for whom being a man is an accident.

The inference pattern is the same as in the fallacy of accident, and the conclusion follows on the basis of the rule of inference from *Cat*. 5 3a1–6:

cured by the doctor belongs to *Callias*
man belongs to *Callias*
———————————————
Therefore, *cured by the doctor* belongs to *man*.

Aristotle explicitly says that the doctor indeed cures man, albeit by accident. Such a qualification, I submit, is intended to show that *cured by the doctor* belongs to both *Callias* and *man*, but not in the same way: it belongs in itself to *Callias* and by accident to *man*, since Callias' *being a man* is accidental to the correlation between curer and cured, and it is only to the extent that *cured by the doctor* belongs to *Callias* that it belongs also to *man*, which in turn does not imply that it belongs to every man. Thus, the role of the clause "in the same way" in the general account of the fallacy of accident at *SE* 5 166b28–30 is to signal that the minor term is accidental to the correlation between the major term and the middle term, and therefore, the major term belongs in itself to the middle term and by accident to the minor term, so that the minor term – which on the basis of the rule of inference from *Cat*. 5 3a1–6 corresponds to either the species or the genus of the middle term – is not supposed to be distributed. Returning to the example from *SE* 5 166b33–6, *item Coriscus is different from* belongs to both *Socrates* and *man*, but in itself to the former and by accident to the latter, since Socrates' *being a man* is accidental to the difference between Coriscus and Socrates and it is only to the extent that *item Coriscus is different from* belongs to

Socrates that it belongs also to *man*, which in turn implies that it does not belong to every man.

And since in all cases in which the species and the genera of a correlative are accidental to the correlation the predicate holds by accident of the species and the genera because it holds of a member of them, one upshot of what precedes is that, differently from what ps.-Alexander 1 (*In SE* 38,23–7 Wallies) and ps.-Alexander 2 (*In SE* 7,40–2 Ebbesen) imply, the rule of inference from *Cat.* 5 3a1–6 is not revoked in the *SE*.

A similar case is provided by *SE* 6 168a37–b4, where *figure* etc. are said to be accidental to *triangle*:

> Refutation will not take place if there is no deduction of the accident, for it is not necessary for it to be white because of the deduction if, these things being so, it is necessary for *this* to be (and that is white); nor [is it necessary for figure to have 2R because of the deduction] if triangle has 2R and it is accidental for it to be a figure, a first item or a principle (because it is a figure, a principle or a first item), since the demonstration does not take it *qua* figure or *qua* first item but *qua* triangle.

The inference, I submit, is

2R belongs to *triangle*
figure belongs to *triangle*
Therefore, *2R* belongs to *figure*,

where *figure* is accidental to the correlation between 2R and its proper bearer. Note that the passage underscores the notion of demonstration, emphasising that the demonstration that 2R holds of a given object takes the object not *qua* figure but *qua* triangle (b2–4). Since every demonstration takes the object it proves a property of, *qua* the object from the principles of which it proves a property of (*APo.* I 9 75b37–76a15), and 2R is proved from the principles not of *figure* but of *triangle*, it follows that the demonstration of 2R takes its object not *qua* figure but *qua* triangle. Thus, *2R* and *triangle* are supposed in context to be correlated as *property demonstrated* and *proper bearer*, in which case the species and the genera of the proper bearer will be accidental to the correlation and 2R will belong by accident to the species and the genera of its proper bearer in virtue of the fact that 2R will belong to them only insofar as it belongs to *some*, and not to *every*, member of them.

Other cases of the fallacy of accident are given at *SE* 24 179a32–5:

> All arguments of the following kind are caused by the accident: "Do you know what I am going to ask you?" "Do you know the approaching one, or the veiled one?" "Is the sculpture your work, or the dog your father?" "Is few times few few?"

I begin with the following,

yours belongs to *sculpture*
artwork belongs to *sculpture*
_____
Therefore, *yours* belongs to *artwork*,

the form of which is made clear at *SE* 24 179b4–6:

> Nor [is it the case that] if this is mine and is a work, then the work is mine,
> but either the possession or the asset or some other thing.

As for the claim that it is not the artwork but the possession that is mine, Aristotle's remark concerning secondary substances at *Cat.* 7 8a22–4, in the context of a discussion whether substances may be said to be relatives, proves relevant:

> For example, man is not said to be one's man, nor ox to be one's ox, nor wood
> to be one's wood, but rather they are said to be one's possession.

The point is that secondary substances such as these are not what they are *of* anything, and it is only *qua* possession that a given item is said to belong to its owner. As a consequence, whatever relations a given item may hold not *qua* A but *qua* B (to which A is accidental) will be lost on that end once the item is taken *qua* A. Returning to the artwork argument, the species and the genera of the object will be accidental to the correlation between *possession* and *owner*, and therefore, *yours* will belong by accident to *artwork*, as, I submit, is made clear at *SE* 24 180a2–7:

> No one says in the proper sense that this one is a son of that one if [that one]
> is a son's master. Instead, the combination is caused by the accident: "Is
> this one yours?" "Yes". "But this one is a son. Therefore, this one is a son
> of yours", since it is accidental [for him] to be both yours and a son, but not
> your son.[15]

Thus, in cases in which *your artwork*, *your son*, etc. denote an artwork, a son, etc. that are your possession, the qualification "by accident" must be present.[16] And while it is true that *yours* does not belong in the same way to *possession* and to *artwork*, *son*, etc. (since it belongs to the latter by accident, or only insofar as it belongs to possessions to which being an artwork, being a son, etc. are accidental, whereas it belongs to the former in itself, or in the proper sense), in such cases it is not true that the qualification implies the non-distribution of the minor term but rather that "your artwork," "your son", etc. should not be taken as a single noun phrase (or, in Aristotle's words, in combination)[17] but as "an artwork and your possession," "a son and your possession", etc.

Note also that the accidents both in the slave argument at 180a2–7 and in the dog-father argument from 179a32–5,[18] as well as *first item* and *principle* in *SE* 6 168a38–b4, are not secondary substances but relatives:

yours belongs to *slave*

son belongs to *slave*

Therefore, *yours* belongs to *son*.

yours belongs to *dog*

father belongs to *dog*

Therefore, *yours* belongs to *father*.

Therefore, although the inference pattern from *SE* 5 166b28–30 remains unaltered, the rule of inference from *Cat.* 5 3a1–6, which concerns secondary substances, no longer applies.

Turning now to the approaching, or veiled, one argument from *SE* 24 179a32–5, I assume, on the basis of 179b2–4,[19]

> it is not the case, if I know Coriscus but do not know the approaching one, that I know and do not know the same item,

that the aim of the argument is to obtain the contradictory of "I know Coriscus (to be Coriscus)".[20] The accident is said to be a primary substance in *APr.* I 27 43a33–6:

> Each of the sensibles is such that it is not predicated of anything unless by accident, for sometimes we say that that white thing is Socrates and that the approaching one is Callias.

Following the inference pattern from *SE* 5 166b28–30, we have

unknown to you (to be Coriscus) belongs to *approaching one*

Coriscus belongs to *approaching one*

Therefore, *unknown to you (to be Coriscus)* belongs to *Coriscus*.

The correlation is between *knower* and *known*. Although a peculiar trait needs to be taken into account, the argument is in keeping both with the cases discussed so far and with an inference in *Phys.* II 3 195a32–5/*Metaph.* V 2 1013b34–1014a1 where the accident is also a primary substance. Here is the passage from *Phys.* II 3/*Metaph.* V 2:

> [Causes are said] as the accident . . . , for example Polycleitus [is the cause] of a sculpture in one way, and sculptor [is the cause of a sculpture] in another way, for being Polycleitus is accidental to sculptor.

The correlation is between *cause* and *effect*. The inference pattern is the same as in the preceding cases:

cause of sculpture belongs to *sculptor*
Polycleitus belongs to *sculptor*
Therefore, *cause of sculpture* belongs to *Polycleitus*.

Aristotle says that *cause of sculpture* belongs "in one way" to the object *sculptor* and "in another way" to its accident *Polycleitus*, where the ἄλλως . . . ἄλλως . . . idiom encapsules the claim that the predicate indeed belongs, albeit not in the same way, both to the object (to which it belongs in itself) and to its accident (to which it belongs by accident), in accordance with the general account of the fallacy of accident at *SE* 5 166b28–30. In the approaching one argument, however, how can *unknown to you (to be Coriscus)* belong under any qualification to *Coriscus*?

Aristotle does not single out cases such as the approaching one argument from other instances of the fallacy of accident (*SE* 24 179b11–6). Their solution is supposed to follow the same pattern as the preceding cases: the predicate indeed belongs in itself to *approaching one* and by accident to *Coriscus*, from which the unacceptable conclusion does not follow. In order to understand his analysis, note that knowing may take as its direct complement (1) whatever referent a given expression stands for (as one may know one's significant other's lover, though not under that description) or (2) the substratum, whatever it is, of an object individuated by a given framing (as one may know *the neighbour* but not *the sadistic sociopath with explosive disorder*, although they are the same person), in which construal it is not the objects thus framed but rather the person who is either of the objects thus framed, that is the object of knowledge *as* either of the objects thus framed. Now *unknown to you (to be a given person in particular, say Coriscus)* does not hold of *the approaching one* construed as (1), since you know the referent = Coriscus, but it does hold of *the approaching one* construed as (2), since the person who is approaching is unknown to you (to be Coriscus) even if Coriscus is known to you (to be Coriscus). And although knowing in the latter construal is sensitive to framing, and does not admit as its proper object an object framed in such a way as to be taken by the knowing subject to be alien to the framing under which the object is known (since it is *as* the object individuated by the framing that the substratum either is or is not known), substitution of *Coriscus* for *the approaching one* is admissible if *unknown to you (to be a given person in particular, say Coriscus)* is marked to belong to *Coriscus* not *qua* himself but *qua* the person who is approaching i.e. by accident: it is a person who happens to be Coriscus, rather than Coriscus thus taken, that you do not know (to be Coriscus). Another (if somewhat cumbersome) informal device to pinpoint the object of knowledge in such cases is to say not that Coriscus is *unknown to you (to be Coriscus)* (which holds good if rightly read but may also mislead one into assuming that Coriscus is taken as such by the knowing subject) but rather that Coriscus is *that which*, or *the one who*, *is unknown to you (to be Coriscus)* (which, albeit not on the side of the object of knowledge but of knowledge itself, nails down the correct object of knowledge as whatever underlies

the item as framed)[21] – which, of course, is not to say that the fallacy consists in mistaking identity for predication, not least because predication holds.

As in other cases of the fallacy, the problem lies in ascertaining what exactly holds by accident on the basis of the premises and thus blocking the inference to the conclusion intended by the opponent. That the unwarranted step is due to distribution, composition, or aboutness does not change the nature of the fallacy: in all cases the issue is, rather, substituting an object which is framed in such a way as to be alien to the way in which the object for which it is substituted is taken in the reasoning. Given a relation either expressed or embedded in the major term (which relation is salient insofar as the term in which it is somehow present is at stake whether or not to belong in the conclusion), an unqualified conclusion is only warranted if, when the minor term is substituted, the nature of the middle term *qua* relatum is preserved (its nature as a relatum possibly being obscured in context by its not being rendered as a proper relatum in the first place, as in e.g. *this slave is yours*). Unlike a rival proposal Aristotle considers and eventually rejects in *SE* 24 179b7–33, the approaching one fallacy is due not to knowledge in particular (or propositional attitudes, or indirect speech, in general) but to substitution in a relational context, and is to be solved accordingly (*SE* 24 179b11–6):

> The correction must be the same of arguments caused by the same [defect], but this one [*viz.* the alternative solution] will not be [the same as in other cases of the fallacy of accident] if one assumes the same axiom [to hold] not in the case of knowing but in the case of being or being thus, as in "If this one is a father and is yours". For if this is true in some cases, namely that it is possible to know and not to know the same thing, there however [*viz.* in other cases of the fallacy of accident] what was just said [*viz.* that it is possible to know and not to know the same thing] has no share.

The alternative view is presented at 179b7–11:

> Some solve [the fallacy] by making a distinction[22] in the question: they say that it is possible to know and not to know the same object, but not in the same respect. Thus, they say that those who do not know the approaching one but know Coriscus know and do not know the same thing, but not in the same respect.

The proposed solution presumably holds that, just as a top that spins but does not tilt moves in a circle with respect to its periphery but stands still with respect to its axis,[23] the same object is not known (to be Coriscus) with respect to its being the approaching one but is known (to be Coriscus) with respect to its being Coriscus. According to this view, knowing and not knowing are indeed toward objects framed in given ways, but what makes a difference for the specific attitude toward them (whether knowing or not knowing) are different aspects of the objects thus framed. Hence, one is supposed to know both the approaching one with respect to his being the approaching one and Coriscus with respect to his being Coriscus, but neither

Coriscus with respect to his being the approaching one nor the approaching one with respect to his being Coriscus. The difference with Aristotle's view is that here it is a feature of the item itself that makes it either known or not known, whereas in Aristotle's view it is the framing of the object that makes it either germane or alien to a given relation. Aristotle grants that knowing and not knowing the same item in different respects may well turn out to be the case in some circumstances (179b26, 29–31) but adds that in the present case not even that would be reputed to hold good under the assumption (179b27), presumably because given the assumptions – what makes a difference for either knowing or not knowing a given object are particularities of the object itself, and you know the approaching one to be the approaching one and you know Coriscus to be Coriscus (179b27–8), and the approaching one is Coriscus – it follows that you know the approaching one both to be the approaching one and (with respect to his being Coriscus) to be Coriscus, and you know Coriscus both to be Coriscus and (with respect to his being the approaching one) to be the approaching one (179b31–3).[24] What is more, the alternative proposal does not show that the fallacious argument does not reach its intended conclusion (179b23–6), presumably because given the assumptions – with respect to his being the approaching one you do not know the approaching one (to be Coriscus), and the approaching one is Coriscus – it follows that with respect to his being the approaching one you do not know Coriscus (to be Coriscus).

For Aristotle, in contrast, the defect and the solution are the same as in the dog-father argument (quoted in that connection in 179b11–6). I submit that "being thus" (πὼς ἔχειν), which Aristotle pairs with "being" (εἶναι) in the passage, corresponds to the same phrase in the second definition of relatives at *Cat.* 7 8a31–2:[25]

> Relatives are items whose being (εἶναι) is the same as being thus related to something (πρός τί πως ἔχειν).

In the dog-father argument, both the predicate *yours* and the accident *father* are relatives, but what causes the fallacy is the former's relational character rather than the latter's: it is because *father* is alien to the *owner–possession* relation that the conclusion yielded by the substitution of *father* for the object taking part in the *owner–possession* relation holds only by accident. Hence, once a given item is taken as a relatum (as *this dog* is taken to be *yours*), since a relatum's being *qua* relatum just is its *being thus related to something*, its being is (in that connection) no longer its *being something* (e.g. *a dog*), its *being related to some other thing in a different way* (e.g. *a father*) and so forth (which are accidental to the relation), and the issue lies in the distinction between *being thus related to something* and *being* whatever else.

Aristotle's claim at *SE* 24 179a35–b2 is to be seen in such light:

> For it is manifest in all those cases that it is not necessary for it to be true of the accident and of the object, for only to items which in their being (κατὰ τὴν οὐσίαν) are undifferentiated and one is it reputed that the same things belong. For the good, it is not the same thing to be good and to be what I am

going to ask you, nor for the approaching, or veiled, one is it the same thing
to be approaching and to be Coriscus.

Aristotle's claim (both here and in *Phys.* III 3 202b10–22) is not that a fallacy takes
place whenever an item is substituted for another which is not the same in being
with it, but rather that an unqualified conclusion is not warranted in such cases.
For example, if *Socrates* is both *a white item* and *a musical item*, then *a white item*
and *a musical item* are indeed the same thing, and the conclusion holds by accident
to the extent that *being Socrates* is not the same thing as either *being a white item*
or *being a musical item*. The issue is not whether the conclusion follows from the
premises in cases of substitution – it does – but whether it holds of necessity on the
basis of the premises,[26] and it is a condition on deduction that only if an object is
substituted which is framed in the same way as the object for which it is substituted
the conclusion holds of necessity on the basis of the premises (see *SE* 6 168a37–8,
where it is assumed in context that there is no deduction of the accident). In the pre-
ceding example, the fact that the premises hold by accident manifestly prevents the
conclusion from holding of necessity on the basis of the premises (as, presumably,
also if *a white item* is both *Socrates* and *rational* then *on the basis of this reasoning*
Socrates is *by accident* rational, to the extent that the accidentality of both *Socrates*
and *rational* to *white item* in the premises cannot ground the essentiality of *rational*
to *Socrates* in the conclusion).[27] But cases of the fallacy of accident are such that
not only in some of them the premises indeed hold by accident but the predicate is
accidental to the subject not as such but *qua* member of a relation specified in the
major premise (as *man* is accidental to *Socrates qua* other than Coriscus), but even
when the predicate is accidental to the subject as such (as *son* is accidental to *slave*,
or *Coriscus* is accidental to *the approaching one*), it is rather because the predicate
is accidental to the subject *qua* member of a relation specified in the major premise
that the conclusion is deceptive with respect to distribution (*Coriscus is other than
a man*), combination (*the slave is a son of yours*), aboutness (*Coriscus is unknown
to you*), etc.

Substitution of items which are not the same in being fails to yield a neces-
sary conclusion even if the items are necessary equivalents: that what is at stake
is the being (οὐσία) of a given object as individuated by a given framing, e.g.
what it is to be *the approaching one* as opposed to what it is to be *Coriscus*, al-
lows for fine-grained distinctions such as obtain not only between items which
are the same by accident but also between items which are the same of neces-
sity, e.g. between *the road from Thebes to Athens* and *the road from Athens to
Thebes*, between *acting on another* and *being acted on by another* and so forth
(see *Phys*. III 3 202a18–20/*Met*. XI 9 1066a31–3, also 202b10–22).[28] And the
presence of a relation in the reasoning not only provides a precise account of
how e.g. *being a man* (which is not the same as *being Socrates* but is a part
thereof) can be accidental to *Socrates* but chiefly introduces *positions* which
are prone to deception to the extent that, in the case of improper relata, recip-
rocation does not necessarily hold of every item falling under the relata (see

the previous discussion on *Top*. VI 12 149b4–12), combination may fail to hold and so forth.

Thus, while all cases follow the same inference pattern and their conclusion holds under a qualification, the fallacy arises from the substitution of something accidental to a relation either explicit in the argument or implicit in the context. The same rationale, I submit, applies to the *few times few* argument in *SE* 24 179a32–5, which (although the evidence is scant and I shall not speculate as to how to reconstruct it) manifestly involves a correlation in that, according to *Cat*. 6 5b11ff. (esp. 23ff.), something is only said to be *few*, and hence *few times few*, in a given relation. Thus, if something is *few* in a given relation, and *few times few* in a different relation, the latter is accidental to the former in presumably much the same way as *being a son* or *a father* are accidental to the correlation between *possession* and *owner* in the slave and the dog-father arguments.

Now I move on to the other example of a primary substance said to be accidental to a given item in *APr*. I 27 43a33–6 ("the white thing is Socrates") and hence to cases of the fallacy of consequent, which is said to fall under the fallacy of accident at *SE* 6 168b27–8, 7 169b6–7 and 8 170a3–5. The passage I begin with is *De an*. II 6 418a20–3:

> An item is said to be perceptible by accident if, for example, the white thing is the son of Diares – for one perceives that by accident if that is accidental to the white thing one perceives.

The reasoning, I submit, has the following form,

Diares' son belongs to *white thing*
white thing belongs to *item one perceives*
Therefore, *Diares' son* belongs to *item one perceives*.

Note that the inference pattern is different from the cases in that the accident is now said of the predicate in the major premise and of the object in the conclusion:

accident belongs to *predicate*
predicate belongs to *object*
Therefore, *accident* belongs to *object*

As in the following example, the major term is the object of *accidental perception*. The conclusion is said to follow under a qualification: one perceives Diares' son by accident to the extent that one perceives a white thing that is Diares' son. Such cases, however, are not immune from errors, as noted in *De an*. III 1 425b3–4:

> That is why one commits errors, and if it is yellow, deems that it is bile.

In the latter passage, the inference is no longer analysed in quasi-syllogistic terms but in terms of conditional statements. A similar paralogism is described in *SE* 5 167b1–6:

> Refutation caused by the consequent is due to the fact that one takes the implication to convert. For when, *this* being the case, of necessity *that* is the case, also *that* being the case people take the other to be the case of necessity. Whence errors arise from sensation in the domain of opinion, for many times people supposed bile to be honey in virtue of the fact that yellow colour follows upon honey.

The alternative analyses suggest that the error in taking a conditional statement such as

this is honey → this is yellow

to admit of conversion[29] to

this is yellow → this is honey

is equivalent to the error in taking the terms of the major premise in a quasi-syllogism such as

yellow belongs to *honey*
yellow belongs to *this item*
Therefore, *honey* belongs to *this item*

to admit of conversion to

honey belongs to *yellow*
yellow belongs to *this item*
Therefore, *honey* belongs to *this item*.[30]

The same issue underlies cases of second-figure sign-inference in *APr.* II 27 70a2–b6, on the basis of which I propose to take the sign-inference in *SE* 5 167b8–12 in much the same way:

pale belongs to *pregnant*
pale belongs to *this woman*
Therefore, *pregnant* belongs to *this woman*.

wandering at night belongs to *adulterer*
wandering at night belongs to *this man*
Therefore, *adulterer* belongs to *this man*.

The relation between the middle term and the major term in all such cases is between *sign* and *thing signalled* (implicit in the context). Such inferences are said to be λύσιμοι (i.e. to admit of solution as fallacious)[31] at *APr*. II 27 70a34–7, and it is only once the middle term and the major term are taken to convert that the conclusion follows:

pregnant belongs to *pale*
pale belongs to *this woman*
Therefore, *pregnant* belongs to *this woman*.

adulterer belongs to *wandering at night*
wandering at night belongs to *this man*
Therefore, *adulterer* belongs to *this man*.

However, given that in all such cases the major term and the middle term are not identical in being (*being pregnant* is different from *being pale*, and so on) and are so related that the latter is consequent on the former *of necessity* but the former is only consequent on the latter *by accident* or to the extent that the former belongs to some, but not to every, item under the latter, it follows that the middle term cannot be distributed in the major premise and that the conclusion will follow by accident only if the middle term is undistributed and denotes the same item in both premises, as in the case of Diares' son in *De an*. II 6 418a20–3.[32]

Finally, the first example of a fallacy of accident in *SE* 5 (166b32–3),

If Coriscus is different from man, then he is different from himself, for he is a man,

readily falls under the same pattern as the latter cases,

item Coriscus is different from belongs to *man*
man belongs *to Coriscus*
Therefore, *item Coriscus is different from* belongs to *Coriscus*;

And since Coriscus is different from all men who are not Coriscus, the middle term is also undistributed in the major premise and does not denote the same item(s) in both premises. However, not only is it not an issue whether the major term is consequent on the middle term (or vice versa) whether of necessity or by accident, also the example comes roughly in the middle of the passage in *SE* 5 (166b28–36) from whence come both the first schema and the other example from the chapter

(which falls under the first schema). Thus, it is perhaps more apposite to read the example as falling under

predicate belongs to *object*
accident belongs to *object*
Therefore, *predicate* belongs to *accident*,

for which a conversion is necessary in the minor premise:

item Coriscus is different from belongs to *man*
Coriscus belongs to *man*
Therefore, *item Coriscus is different from* belongs to *Coriscus*.

Thus framed, a primary substance is now predicated of the middle term, as in the examples from *APr.* I 27 43a33–6 and *Phys.* II 3 195a32–5/*Metaph.* V 2 1013b34–1014a1. And there come to light remarkable similarities with other cases in which the relation between the major term and the middle term is explicit in the argument: the relation is expressed in the major term, and the minor term is accidental to the middle term (*qua* the latter is taken in the major premise). The decisive feature remains, however, that the conclusion does not follow because the middle term is undistributed in the major premise and does not denote the same item(s) in both premises.

   To sum up, not in all cases of the fallacy of accident is the same inference pattern followed, nor the same role (as minor term or major term) assigned to the accident or the conclusion secured under a qualification. What makes all of them fallacies of the same ilk is that their defect is due to the substitution of something accidental to, i.e. not the same in being with, a relatum *qua* relatum.

Notes

2 Hintikka (1986: 81–4); Angelelli (2004: 71–2).

3 In the *SE*, Aristotle distinguishes between the fallacy of homonymy and the fallacy of accident, and groups the former among fallacies dependent on linguistic formulation (παρὰ τῆς λέξεως) and the latter among fallacies external to linguistic formulation (ἔξω τῆς λέξεως).

4 Mendelsohn (1987). Owen (1971: 251 n.47) and Brown (1986: 65 n.26; 1994: 214–15) claim such is Plato's view in the *Sophist*.

5 See esp. *Metaph.* VII 6 1031b22–8.

6 On how to construe their necessary equivalence, see Smiley (1962: 68–70); Parry (1966: 346–7); Bostock (2004: 153–4). On why, see Hintikka (1983: 450–62; 1986: 96–102); Bostock (2004: 151–8); Corcoran (2008); also Mignucci (1983).

7 Matthews (1982, 1990); Cohen (2008).

8 Fine (1982).

9 Cohen (2008: 13–14).

10 I adapt a strategy from Sommers (1990: 110–11) and Sommers and Englebretsen (2000: 88–95) in reply to a traditional objection against the claim that the copula expresses identity, thus voiced by Geach (1969: 43): "Anybody who is tempted by it [*viz.* the 'logically worthless theory' that 'a true predication is effected by joining different names of the same thing or things, the copula being a sign of this real identity'] may try his hand at explaining in terms of it how we can fit together the three terms 'David,' 'father,' and 'Solomon' (which on this theory are three *names*) to form the true predication 'David is the father of Solomon'".

11 Which of course is tantamount to
Coriscus is different from Socrates
Socrates is (the same thing as) a man
Therefore, Coriscus is different from a man.

12 Following Casaubon's conjecture with Ross (1958) and Hasper (2013). On ταῦτα/ταὐτά, see also *SE* 7 169b3–6, 24 179a37–9.

13 Jones (2010: 42–7).

14 On the notion of distribution, see Parsons (2006).

15 Following codd. Λ with Hasper (2013).

16 The fact that *yours* belongs to *son* in the proper sense in the case of *father* (because *father* is the correlate of *son*) and only by accident in the case of *owner* is the reason why "yours" is not ambiguous between "yours as progeny" and "yours as a possession" in *SE* 24 179b38–180a7.

17 On Aristotle's fallacies of combination and division, see Hasper (2009).

18 Their premises are given at 180a4–6 and 179b14–15 respectively.

19 See also *SE* 24 179b7–11.

20 For the complement, note that verbs such as ἀγνοεῖν, γιγνώσκειν, εἰδέναι, ἐπίστασθαι frequently only take an object (*know A*) but may also take an object and a reduplicative such as ὅτι (*know A to be B*). For the latter construction in Aristotle's corpus, see esp. *APr.* I 38 and *SE* 24 179b29–30 (where note object τὸ αὐτό).

21 Ancient Greek may use the definite article to mark the distinction: ἄγνωστός σοι (ὅτι Κορίσκος)/ὁ ἄγνωστός σοι (ὅτι Κορίσκος). For a parallel in Aristotle's corpus (ἀμετάπειστος ὑπὸ λόγου/ὁ ἀμετάπειστος ὑπὸ λόγου), see *Top.* V 4 133b24–31, 133b36–134a4.

22 Following Pacius' conjecture with Ross (1958). On ἀναιρεῖν/διαιρεῖν, see esp. *SE* 18 176b29–177a6, 33 182b32–183a13.

23 For the example, see Plato, *R.* IV 436ce.

24 Following codd. Λ with Hasper (2013).

25 See also *Cat.* 7 8a38–b3; *Top.* VI 4 142a28–30, 8 146b3–4; *SE* 22 178b38–9 (reading, with Hasper (2013), ABcuVGΛ πρός τί πως); *Phys.* VII 3 246b3–4, 8–9, 247a1–2, b2–3; *EN* I 12 1101b12–4.

26   Which, I submit, is how one should read Aristotle's statements at *SE* 5 166b30–2, 6 168a38–40, 24 179a27–31, 35–7.
27   Which plausibly underlies Aristotle's contrast between knowing "without qualification" (ἁπλῶς) and knowing "by accident" (κατὰ συμβεβηκός) or "in the sophistic way" (τὸν σοφιστικὸν τρόπον) in *APo*. I 2 71b9–12, 5 74a25–32, 9 76a4–7.
28   Which in turn may shed light as to why (according to *SE* 6 168b6–10) the unknowing are capable of refuting even men of arts and sciences on the basis of fallacies of accident.
29   Or inversion (see *SE* 28 181a28–9; *Phys.* I 3 186a10–3),
       this is not honey → this is not yellow.
30   Some cases present difficulties. The rain inference at *SE* 5 167b6–8 resists translation into quasi-syllogistic terms. One possibility is,

wet belongs to *rained on*
wet belongs to *ground*
Therefore, *rained on* belongs to *ground*.

(Conditionals in which antecedent and consequent have no term in common are dismissed from Aristotle's logic on grounds that their conclusion does not follow because of the premises, even if it follows of necessity: see Ebrey (2015)). And on the basis of *SE* 5 167b12–20 and 28 181a27–30 (see also *SE* 6 168b35–40 and *Phys.* I 3 186a10–3), Melissus' intended argument may be framed as

having no principle belongs to *ungenerated*
ungenerated belongs to *universe*
Therefore, *having no principle* belongs to *universe*.

31   Cf. the uses of λύω and λύσις in *SE* 16–33.
32   The example in *SE* 6 168b31–5, which is framed in terms of accidental sameness in the text, admits of a similar explanation: since *white* is the same as both *snow* and *swan* only by accident or to the extent that *snow* and *swan* are each the same as some, but not every, item under *white*, the conclusion would follow only if *white* were undistributed and denoted the same item(s) in both premises, but the latter condition is not observed.

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14 "Those Searching for Gold Dig Up a Lot of Earth" – On Contamination and Insertion in the Early Manuscript Tradition of the *Organon*

The Case of the *Topics* and the *Sophistical Refutations*[1]

Pieter Sjoerd Hasper

If one picks up a modern edition of one of Aristotle's works, one based on a broad selection of sources, one will quickly stumble upon variant readings in the apparatus which are significantly different in terms of grammar or content from the reading printed in the edition itself. Sometimes these variant readings even appear in a large majority of the sources referred to in the apparatus. It is easy to explain this fact. The generations of readers and scribes responsible for the transmission of the text between Aristotle's library to the extant manuscripts did not copy their exemplars passively but were in the process actively trying to understand what Aristotle had written. Thus, they not only tried to correct the inevitable copying errors but also added marginal or supralinear words or phrases which helped making sense of the text, and even purposefully interfered with the text itself. The next generation in this transmission, in their turn, did not or could not always distinguish between the originally copied manuscript and the manuscript with all the corrections, additions, and changes, so that these were incorporated in the transmitted text. Moreover, late ancient and medieval readers copying and using the manuscripts were frequently willing to accept that manuscripts other than their own exemplar contained a better version of Aristotle's text. Thus, these corrections, additions and changes could spread over large parts or even the whole of the extant manuscript tradition – the process is called contamination, and it makes that what are in fact changes and additions to the text appear to be what Aristotle actually wrote.

In this chapter I want to show, by way of discussing a number of examples and providing a typology of them, that the *Organon* is no exception in this respect and also contains many insertions and changes whose deviant origins are difficult to discern as the result of a process of contamination. Unmasking such intrusions can only be done against the background of evaluating a broad selection of manuscripts and sources and reconstructing a tree of descent, a so-called stemma, for otherwise one does not have any way of assessing the importance as a source of a particular manuscript and of tracking the frequency and directions of contamination between

manuscripts. Since I have for them almost full collations for a broad selection of manuscripts and sources, including Boethius' translation, to a considerable extent also the Arabic translations, and Alexander's commentary on the *Topics*, all of the examples discussed in the chapter are taken from the *Topics* and the *Sophistical Refutations* (though I have added an appendix on the *Analytica*). In the discussion of the examples of intrusions, I will thus frequently refer to the stemma underlying the extant manuscript tradition as well as to patterns of contamination.

There is no reason to assume that these processes of incorporating extratextual material into the text and of contamination influenced the textual tradition only from the latest common ancestor of all extant manuscripts, the so-called archetype. In fact, previous editors of the *Organon* have pointed to suspect words and phrases present in all extant manuscripts. I will discuss one example in which the underlying processes of incorporation and contamination can be shown not to be limited to the late ancient and medieval textual tradition, but in a way to continue into the present. Appendix 1 will list proposals by previous editors for striking words and phrases from the text and discuss some of them.

1.   Sources, Stemma, and Patterns of Contamination

For my reconstruction of the textual tradition of the *Topics* and *Sophistical Refutations*, I have used the following manuscripts:

Sigl.	Manuscript	Date	Ross (1958), Top. & SE	Brunschwig (1967, 2007), Topics	Incomplete
A	Vat.Urb.gr. 35	ca. 900	+	+	
B	Marc.gr. 201	954	+	+	
S^s	Par.Suppl.gr. 1362	IX	–		Only 2 ff.: 176b9–177a18 and 179b29–180b4
V	Vat.Barb.gr. 87	X	–	+	Missing: 162b20–168a37
G	Gud.gr. 24	XII	–	–	Missing: 125a35–126a13 and 141a1–142b25; from 183b37
b	Durham C I 15	XV	–	–	Missing: 177b20–178b29
P	Vat.gr. 207	XIII	–	For books 1–4	
h	Marc.gr. IV.53	XIII	–	–	
i	New College 225	XIV	–	–	
S	Sin. NE M 138	X	–	–	Only 1 f.: 163a12–164b37
D	Par.gr. 1843	XII	+	+	
C	Coisl. 330	XI	+	+	Missing: 132a18–138b33

Sigl.	Manuscript	Date	Ross (1958), Top. & SE	Brunschwig (1967, 2007), Topics	Incomplete
W	Vat.gr. 244	ca. 1200	–	+	Only used for 132a18–138b33
c	Vat.gr. 1024	ca. 1000	+	Books 1–4	Throughout *Topics* ff. missing
u	Basil. F II 21	XII	+	+	
e	Conv.Soppr. 192	XII	–	–	Missing from 183a15
M	Morgan 758	XI	–	+	Only 115a4–157b37; ff. missing throughout

In addition, I have used the supposed readings underlying the extant early translations:

Λ	Latin translation by Boethius	ca. 500
Ψ	Arabic translation of *Topics* 1–7 by Abū ʿUthmān Saʿīd ibn Yaʿqūb al-Dimashqī	X
Ψ	Arabic translation of *Topics* 8 by Ibrahim ibn Abdallah	X
Ψ^Y	Arabic translation of the *SE* by Yaḥyā ibn ʿAdī	X
Ψ^Z	Arabic translation of the *SE* by ʿĪsā ibn Zurʿa	X
Ψ^v	Arabic *translatio vetus* of the *SE*	IX

The Arabic translations by Yaḥyā ibn ʿAdī and ʿĪsā ibn Zurʿa both go back to:

Ψ^Σ	Syriac translation by Athanasius of Balad	VII	not extant

On the basis of these sources, it is easy to construct the basic stemmata for the *Sophistical Refutations* and the *Topics*. They turn out to be bifurcated, consisting of two branches φ and χ, with the φ branch being divided into two sub-branches α and β, and the χ branch into Λ and a less uniform group γ, which, moreover, as a group shares some errors not only with Λ but also some, though fewer, with φ. Thus, we have the following basic picture:
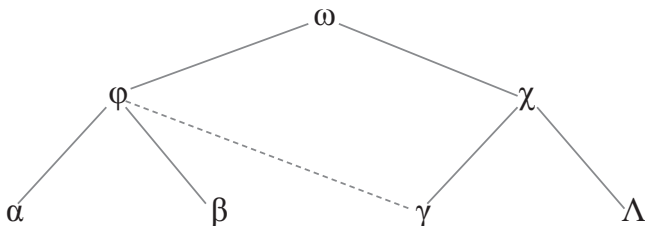
For the *Sophistical Refutations* and the two halves of the *Topics*,[2] the distribution of the manuscripts over the groups α, β and γ are the following:

	Sophistical Refutations	Topics – second half	Topics – first half
α	A B	A B	A B
β	S^S V G b	G b P h i	b P
γ	D c u e	S D c u e M	D C h i c u e M

As to the significant differences between these groupings:

- In the *Topics* V still shares errors with the β group but has been extensively contaminated from the γ group and perhaps also from a source related to Λ (some traces of the former contamination can be found in the *Sophistical Refutations* as well).
- Manuscript C is a very mixed manuscript, sharing readings, including errors, mainly with the β and γ groups, but even some with the α group; in the first half of the *Topics*, there are far fewer traces of connections with the α and β groups.
- Manuscripts h and i are almost like twins throughout these works, but their common ancestor seems to derive from an ancestor shared with P in the second half of the *Topics*, while in the first half it shares an ancestor with C, together mainly belonging to the γ group; for the *Sophistical Refutations*, the place of hi in the stemma is less clear, but there is still a significant similarity with C as well as a connection with the β group.
- Also for the first half of the *Topics* there are traces of a connection between G and b, but there G has been massively contaminated from the γ group and is in fact more closely related to manuscript u.

Because the outline of the stemma for the *Sophistical Refutations* and the *Topics* is rather clear and based on solid evidence, it is also possible to identify patterns of contamination. There is a considerable amount of it, and no group or manuscript is exempt from it. On the one hand, there is significant contamination in the γ group at the level of individual manuscripts and of sub-groups, mainly from the β group, and most clearly in the *Sophistical Refutations* (in addition to the errors the γ group as a whole shares with the φ branch). On the other hand, there is also significant contamination from the γ group in the α and β groups separately, as well as in individual manuscripts of both groups. Finally, as to contamination in Boethius' exemplar from the φ branch, there is a little, throughout the *Topics* and *SE*, but mainly in the first half of the *Topics*, it seems.

The positions of the exemplars of the different Arabic translations can also be determined. For both translations of the *Topics* the exemplars belong to the χ branch, featuring shared errors with both Boethius' exemplar and the γ group, though it is difficult to establish whether they are more closely related to Λ or to the γ group or even constitute a completely separate sub-branch of the χ branch.[3] For

the three translations of the *Sophistical Refutations*, there is convincing evidence that they ultimately go back to a common Greek ancestor, that one of them, namely, that by Yahya, is relatively free from contamination and that this common ancestor, which I have given the siglum Ψ^*, belongs to the χ branch of the stemma but needs to be situated above the split between Λ and the γ group.[4] Thus, for both works, but especially for the *Sophistical Refutations*, it is extremely important for the constitution of the text to determine the readings underlying the Arabic translations. In order to bring out this importance, I will distinguish in the following between the χ branch and the Arabic translations and always mention Ψ separately when reporting variant readings in the apparatus.

2. Early Changes to the Text

Once one has identified the relations of descent among the extant sources as well as the patterns of contamination between them, it will not only be possible to narrow down the number of places for which one cannot adduce stemmatic considerations in support for one reading against another, thus limiting the influence of philosophical and other interpretative considerations on the constitution of the text, but it will also be possible to identify a significant number of passages for which significant changes to the text were introduced at an early stage of the textual tradition. It is these early changes to the text which I want to give an impression of, especially if they either are the kind of changes against which the original reading only survives in one of the four groups of the basic stemma or if they concern significant insertions into or changes of the text.

2.1. Correct Readings Being Pushed Out in an Ongoing Process of Correction

As there is no group in the basic stemma for the *Topics* and the *Sophistical Refutations* which is impervious to correction and contamination, there are bound to be cases for which the correct reading, that is, the reading of the archetype, is only to be found in a single or a small number of manuscripts of one branch of the stemma. It is, however, not easy to identify such cases, for one needs a criterion for singling out minority readings as original which can stand up against the principle that the stemmatic majority decides. In the case of the *Topics*, we have the readings cited or presupposed in Alexander's commentary to serve as such an independent criterion because the readings which we can cull from Alexander's *lemmata*, his clear citations and his paraphrases sometimes support the one branch of the stemma, sometimes the other, while there are also some passages, of which one is to be discussed further here, for which Alexander's commentary alone clearly has the correct reading, against the archetype of the whole textual tradition. In the case of the *Sophistical Refutations* there are in principle only palaeographical and interpretative considerations to appeal to, though here the stemmatic position of the common ancestor of the three Arabic translations, being closer to the χ branch, but above the split between its main groups, may come to the rescue as well.

To begin with, I will illustrate this with four passages from the *Sophistical Refutations*. The first passage concerns an example of the fallacy of qualification in Chapter 25:

> καὶ πότερα δεῖ κρίνειν, τὸν τὰ δίκαια λέγοντα ἢ
> τὸν τὰ ἄδικα; ἀλλὰ μὴν καὶ τὸν ἀδικούμενον δίκαιόν **ἐστι**
> **νικᾶν ὃς γ' ἐρεῖ** ἃ ἔπαθεν ταῦτα δ' ἦν ἄδικα. οὐ γάρ, εἰ πα-
> θεῖν τι ἀδίκως αἱρετόν, τὸ ἀδίκως αἱρετώτερον τοῦ δικαίως,
> ἀλλ' ἁπλῶς μὲν τὸ δικαίως, τοδὶ μέντοι οὐδὲν κωλύει ἀδί-
> κως ἢ δικαίως. (180b26–31)
>
> ὁμοίως δὲ καὶ ἄδικα
> ὄντα οὐδὲν κωλύει λέγειν γε αὐτὰ δίκαιον εἶναι οὐ γάρ, εἰ
> λέγειν δίκαιον, ἀνάγκη δίκαια εἶναι, ὥσπερ οὐδ' εἰ ὠφέλι-
> μον λέγειν, ὠφέλιμα. ὁμοίως δὲ καὶ ἐπὶ τῶν δικαίων. ὥστ' οὐκ
> εἰ τὰ λεγόμενα ἄδικα, **ὁ λέγων ἄδικα νικᾷ** λέγει γὰρ
> ἃ λέγειν ἐστὶ δίκαια, ἁπλῶς δὲ καὶ παθεῖν ἄδικα. (180b34–39)

b27–28 ἐστι νικᾶν ὃς γ' ἐρεῖ VG? : ἐστίν κἂν οὕτως ερεῖ b : ἐστιν ἱκανὸς
λέγειν A : ἐστιν ἱκανῶς λέγειν BχΨ* ‖

Without having access to V, Poste (1866: 158), already conjectured that at b27–8 Aristotle had written ἔστι νικᾶν ὃς λέγει because he wanted to explain the reference to the possibility that the one stating unjust things would win at b38; the only thing he could have provided in support of his conjecture was the reading ἐστινικανὸσλέγειν in A, which would allow him to claim that the letters had been parsed incorrectly into separate words. However, as the ω/ο change is not really rare, one could easily discount the evidence of A – as it is in the editions published after Poste's book. With the support of the β group, however, things have changed: it provides the obviously correct reading ἐστι νικᾶν ὃς γ'ἐρεῖ, for by assuming this as the original reading, one can both explain the ο in A and the reference to the one stating unjust things as the winner at b38. Moreover, it is easy to see how the correct reading could have become corrupted, for the majuscule γ' ἐρεῖ could be read as λέγει, while the converse corruption is less likely because λέγει is far more common than γ'ἐρεῖ.

Thus, for this first passage palaeographical and strong interpretative considerations suffice for identifying a reading which in effect only appears in one manuscript as the original one. For the second passage there are no palaeographical considerations to appeal to, but here strong interpretative considerations can be backed up by an appeal to the Arabic translations. This passage concerns the summary of what has been achieved in the *Sophistical Refutations* at the beginning of Chapter 34:

> Ἐκ πόσων μὲν οὖν καὶ ποίων γίνονται τοῖς διαλεγομέ-
> νοις οἱ παραλογισμοί, καὶ πῶς δείξομέν τε ψευδόμενον καὶ
> παράδοξα λέγειν ποιήσομεν, ἔτι δ' ἐκ τίνων συμβαίνει ὁ
> **σολοικισμός**, καὶ πῶς ἐρωτητέον καὶ τίς ἡ τάξις τῶν ἐρω-
> τημάτων, ἔτι δὲ πρὸς τί χρήσιμοι πάντες εἰσὶν οἱ τοιοῦτοι λό-
> γοι, καὶ περὶ ἀποκρίσεως ἁπλῶς τε πάσης καὶ πῶς λυ-
> τέον τοὺς λόγους καὶ τοὺς **σολοικισμούς**, εἰρήσθω περὶ ἁπάν-
> των ἡμῖν ταῦτα. (183a27–34)

a30 σολοικισμός βΨ* : συλλογισμός αχ, edd. ‖ a33 σολοικισμούς VΨ* :
σολοικισμοὺς συλλογισμούς G : σολοικισμοὺς καὶ συλλογισμούς b :
συλλογισμούς αχ, edd. ‖

It is immediately clear that σολοικισμός and σολοικισμούς are the correct readings at a30 and a33: solecisms receive their separate discussion in the *Sophistical Refutations* (*SE* 14 and 32), just as the other items on the list: fallacies (*SE* 4–8), false and unacceptable statements (*SE* 12), how to ask questions in eristic discussions (*SE* 15), why it is useful to discuss such arguments (*SE* 16), how to answer in general (*SE* 17), and how to solve arguments, i.e. fallacies (*SE* 18 and 19–30) – and this list is almost complete: of the five goals of the eristic questioner mentioned in *SE* 3, only making the interlocutor brabble (ἀδολεσχεῖν) is missing here. Now that we have the evidence of β group and all three of the Arabic translations for it, we can be sure that the archetype featured σολοικισμός and σολοικισμούς, but we also see how successful the corruption συλλογισμός was: it probably originated in the χ branch, but then conquered the α group and part of the β group as well.[5]

These first two examples concern passages where the original reading only survives in the β group or in the β group together with the Arabic translations. There is, thirdly, an example of a reading which must have been the reading of the common ancestor of the whole φ branch, but which only survives in two of its manuscripts. The editors print in *SE* 5:

Οἱ μὲν οὖν παρὰ τὸ συμβεβηκὸς **παραλογισμοί** εἰσιν ὅταν ὁμοίως ὁτιοῦν ἀξιωθῇ τῷ πράγματι καὶ τῷ συμβεβηκότι ὑπάρχειν. (167b28–30)

b28 παραλογισμοί AGχΨ* : συλλογισμοί Bb ‖

The fact that both B and b feature the reading συλλογισμοί can only be explained if this reading is the reading of the whole φ branch. For a correction or corruption from παραλογισμοί into συλλογισμοί would be difficult to imagine occurring separately in these two related manuscripts, while a correction from συλλογισμοί into παραλογισμοί is easy to understand. Once we have accepted συλλογισμοί as the reading of the φ branch as a whole, it is again on the basis of it being the *lectio difficilior sed non impossibilis*[6] that one should prefer συλλογισμοί (φ branch) over παραλογισμοί (χ branch together with Ψ*).

There is, finally, also an example of a reading which only survives in a small part of the other side of the stemma, though it is not fully clear which version exactly is to be adopted. It concerns the following passage from *SE* 31, where Ross prints:

ἐν [b36] δὲ τοῖς δι᾽ ὧν δηλοῦται κατηγορουμένοις τοῦτο λεκτέον ὡς οὐ τὸ αὐτὸ χωρὶς καὶ ἐν τῷ λόγῳ τὸ δηλούμενον. τὸ γὰρ κοῖλον κοινῇ μὲν τὸ αὐτὸ δηλοῖ ἐπὶ τοῦ σιμοῦ καὶ τοῦ ῥοικοῦ, προστιθέμενον δὲ οὐδὲν κωλύει **ἄλλα**, τὸ μὲν τῇ ῥινὶ τὸ δὲ τῷ σκέλει, **σημαίνειν** ἔνθα μὲν γὰρ τὸ σιμόν, ἔνθα δὲ τὸ ῥοικὸν σημαίνει, καὶ οὐδὲν διαφέρει εἰπεῖν ῥὶς σιμὴ ἢ ῥὶς κοίλη. (181b35–182a3)

b39 ἄλλα Ψ^Σ : ἀλλὰ φγ : om. ΛΨ^v ‖ 182a1 σημαίνειν ΛΨ^vΨ^v : σημαίνει φγ : om. Ψ^Z ‖ 182a1–2 ἔνθα μὲν γὰρ τὸ σιμόν ἔνθα δὲ τὸ ῥοικὸν σημαίνει BGbΛhiΨ* : om. AVγ ‖

At 181b39–182a1 there are three readings available: (1) προστιθέμενον δὲ οὐδὲν κωλύει ἄλλα, τὸ μὲν τῇ ῥινὶ τὸ δὲ τῷ σκέλει, σημαίνειν, as can only be found in Ψ^Y, but is also adopted by Ross on the basis of a suggestion by Wallies (1922: 328); (2) προστιθέμενον δὲ οὐδὲν κωλύει τὸ μὲν τῇ ῥινὶ τὸ δὲ τῷ σκέλει σημαίνειν, as can be found in Λ and Ψ^v;[7] and (3) προστιθέμενον δὲ οὐδὲν κωλύει [*scil.* δηλοῦν τὸ αὐτὸ], ἀλλὰ τὸ μὲν τῇ ῥινὶ τὸδε τῷ σκέλει σημαίνει, as read by the large majority of the tradi-tion, to wit the φ branch and the γ group. Though I admit that (3) can be make gram-matical sense of, it does not seem to yield a philosophically understandable sentence, for clearly τὸ κοῖλον is what is, on the one hand, taken in the common way (κοινῇ μὲν) and, on the other hand, is taken as added to a word (προστιθέμενον δὲ) – it is this con-trast which disappears on (3). There is actually not much of a difference between (1) and (2), as on both constructions the point is that τὸ κοῖλον signifies one thing, namely, τὸ σιμόν, when added to "nose" and another, namely τὸ ῥοικόν, when added to "leg". The choice between (1) and (2) is, moreover, a difficult one, for on the one hand there is the consideration that there are no palaeographical reasons for ἄλλα to have dropped out, while on the other hand, if one were to adopt (2), one would be obliged to explain how ἀλλά arose on both sides of the stemma. I am inclined to opt for (2) and let the ab-sence of palaeographical grounds for the disappearance of ἀλλά prevail, also because it has stemmatically the better position when it comes to the choice between (1) and (2), as it is backed up by both Boethius and the Arabic *translatio vetus* (and also by Sophonias' paraphrase). There are several possible scenarios to explain the insertion of ἀλλά, but all of them must anyway postulate contamination from the φ branch in the γ group as far as σημαίνει rather than σημαίνειν is concerned – it would thus be possible, for example, that first ἄλλα was inserted and then was misread as ἀλλά in the φ branch, necessitating a subsequent change into the finite form σημαίνει.

For the *Topics* I want to adduce two passages as examples where the principle of the stemmatic majority fails against alternative considerations. The first pas-sage is very dramatic indeed – it can be found in *Topics* II 7, where both Ross and Brunschwig print:

> Ἔτι εἰ ἔστι τι ἐναντίον τῷ συμβεβηκότι, σκοπεῖν εἰ ὑπάρχει ᾧπερ τὸ συμβεβηκὸς εἴρηται ὑπάρχειν εἰ γὰρ τοῦτο ὑπάρχει, ἐκεῖνο οὐκ ἂν ὑπάρχοι ἀδύνατον γὰρ τὰ ἐναντία ἅμα τῷ αὐτῷ ὑπάρχειν.
> Ἢ εἴ τι τοιοῦτον εἴρηται κατά τινος, οὗ ὄντος ἀνάγκη τὰ ἐναντία ὑπάρχειν·. . . (120a20–5)
>
> a22 γὰρ φΛce : γὰρ ἀμφότερα GΨD[ἄμφω]Chiu ‖ a23 ἅμα φΛce : om. GΨDChiu ‖

However, there are quite a few manuscripts which feature another τόπος after a23. It was known to appear in C, but Brunschwig (1968) found it in another six manuscripts. However, after having checked all the extant manuscripts, I can report that the same *topos* also appears in G, h, and i as well as in Ψ and in addition in the following eight manuscripts:[8]

L	Par.gr. 2086⁹	XIV
y	Toledo 95–08	XIII
s	Stockholm Riks. 3	XIII/XIV
R	Vat.Reg.gr. 107	XIV
x	Mon.gr. 475	XIII
T	Laur.gr. 72.12	XIII
t	Barocci 87	1455/60
z	Scor. Σ.III.9	XIV/XV

The original text of this *topos* was presumably:

a23a	ἄλλος εἴ τις τινὶ τί συμβεβηκέναι φησί, ἐφορᾶν εἰ τῷ
b	συμβεβηκότι ἐστί τί ἐναντίον. εἰ οὖν τὸ ἐναντίον ὑπάρχει τοῦ
c	συμβεβηκότος ᾧ φησι συμβεβηκέναι, ἐκεῖνο οὐκ ἂν ὑπάρχοι ὃ ἐξ
d	ἀρχῆς ἔφη συμβεβηκέναι. ἀδύνατον γὰρ τὰ ἐναντία ἅμα τῷ αὐτῷ
e	ὑπάρχειν.

| a23a ἄλλος εἰ GΨChi yR : ἢ ἄλλος εἰ T : εἰ stzx : ἢ εἰ L ‖ τις τινι τί συμβεβηκέναι GΨ? LT : τις τινι συμβεβηκέναι ysx : τι συμβεβηκέναι τινί Chi Rtz : τίς τινι συμβεβηκέναι τι Aᵖ[187.11] ‖ φησί GΨChi LsRtz : φήσει yT : φήσας x ‖ a23b ἐστί τι ἐναντίον G LysxT : ἐναντίον ἐστί τι Chi Rtz : ἐστί ἐναντίον Aᵖ[187.12] ‖ ὑπάρχει Gi LysRx?tzT Aᵖ[187.18] : ὑπάρχῃ Ch ‖ a23c ὑπάρχοι GhiΨC ysRxtT : ὑπάρχη Lz ‖ a23c ἔφη GChi Rtz : ἔφησε LysxT ‖ a23d τὰ ἐναντία ChiΨ LRx : τἀναντία ystzT Aᵖ[187.24] : τοὐναντίον G ‖ |

As already recognised by Brunschwig, Alexander, in his commentary on the *Topics*, refers to this second *topos*:

εἴ τίς τινι συμβεβηκέναι τι εἴποι, δεῖ, φησίν, ἐφορᾶν εἰ τῷ συμβε βηκότι ἐστί <τι> ἐναντιον. οὗτος ὁ τόπος ὁ αὐτός ἐστι τῷ πρὸ αὐτοῦ ἔν τισι φερομένῳ, κατὰ τὴν λέξιν μόνον αὐτοῦ διαφέρων, ὡς τὸ εἰκὸς¹⁰ Ἀριστο τέλους διαφόρῳ λέξει τὸν αὐτὸν ὑποσημηναμένου τόπον· διὸ ἔν τισιν ὁ πρὸ τούτου περιήρηται. ἔστι δὲ ὁ τόπος καὶ αὐτὸς ἀπὸ τῶν ἐναντίων ἀνα- σκευαστικός. ἐπεὶ γὰρ ἀδύνατόν τινι ἅμα τὰ ἐναντία ὑπάρχειν τε καὶ συμβεβηκέναι, φησὶ δεῖν, ἄν τίς τι συμβεβηκέναι τινὶ λέγῃ, ἐπιβλέπειν εἰ τῷ συμβεβηκέναι λεγομένῳ ἐστί τι ἐναντίον καὶ εἰ ὑπάρχει τούτῳ ᾧ ὑπάρχειν τίς φησι τὸ ἐναντίον αὐτῷ. ἂν γὰρ δειχθῇ τοῦτο ὑπάρχον αὐτῷ, ἀνεσκευασμένον ἔσται τὸ τιθέμενον αὐτῷ συμβεβηκέναι. εἰ γάρ τις λέγοι τὴν ἀδικίαν ὠφέλιμον εἶναι τῷ ἔχοντι, ἐπεὶ τῷ μὲν ὠφελίμῳ τὸ βλαβερὸν ἐναντίον, ἡ δὲ ἀδικία νόσος ψυχῆς ἐστιν, ἂν λάβωμεν ὅτι πᾶσα νόσος βλαβερὰ τῷ ἔχοντι αυτήν, ἔχοιμεν ἂν ὅτι καὶ ἡ ἀδικία· εἰ δὲ βλαβερά, οὐκ ὠφέλιμος· ἀδύνατον γὰρ ἅμα τἀναντία τῷ αὐτῷ ὑπάρχειν. (*In Topica* 187.11–25)

I have underlined in the Greek everything in Alexander's passage which cor- responds to something in the lines found in the second *topos*: the whole of it is to be found in the passage, as well as many of its features which distinguish it from the *topos* prior to it.¹¹

Thus, it seems clear that Alexander's text featured both *topoi*, the one at 120a20–3 as well as the second *topos*.[12] So the question arises: how is it that these 12 manuscripts and one ancient translation feature it, while the rest of the manuscript tradition, including Boethius' translation, lacks the second *topos*? Should we believe that the second *topos* is an early addition appearing in the text used by Alexander as well as the group of 12 manuscripts?[13] Or did the archetype feature both *topoi*, while it disappeared from almost the whole manuscript tradition, including important manuscripts from both branches of the basic stemma?[14]

That the second answer is the correct one becomes clear if one takes two striking facts about the variant readings reported in the apparatus into account. The first fact concerns the reading ἀδύνατον γὰρ **ἀμφότερα** at a22: it is the only reading found in the manuscripts which have both *topoi* – this includes the Arabic translation. The second fact is that the reading **ἅμα** τῷ αὐτῷ at a23 occurs almost exclusively in manuscripts which only feature the first *topos*. Now the final line of the second τόπος is identical to the final line of the first *topos*, at least on the text of a20–3 as adopted by all editors. Together with the two facts, this strongly suggests the hypothesis that the second *topos* disappeared from a large part of the tradition by *saut du même au même*, from ἀδύνατον γὰρ at a22 to ἀδύνατον γὰρ at a23d. Thus, originally the text featured both *topos*, but for the first *topos* not in the version printed by the editors, but with its final line reading: ἀδύνατον γὰρ ἀμφότερα τὰ ἐναντία τῷ αὐτῷ ὑπάρχειν (a22–3), thus with ἀμφότερα and without ἅμα.

This would explain how the second *topos* disappeared from the φ branch of the stemma and also from c and Λ (I suspect here contamination from the φ branch). But this cannot be the whole story, for manuscripts D and u both read ἀδύνατον γὰρ ἀμφότερα τὰ ἐναντία τῷ αὐτῷ ὑπάρχειν at a22–3, i.e. with ἀμφότερα and without ἅμα. For these manuscripts the disappearance of the second *topos* is thus not to be explained by way of *saut du même au même* from ἀδύνατον γὰρ at a22 to ἀδύνατον γὰρ at a23d, but either by way of *saut du même au même* from τῷ αὐτῷ ὑπάρχειν to τῷ αὐτῷ ὑπάρχειν, or, more plausibly, by way of the whole second *topos* being deliberately struck, just as happened in G,[15] perhaps under the influence of it being absent in the φ branch of the stemma.

The second passage from the *Topics* I want to discuss is from chapter 1 of Book 8, where Ross and Brunschwig print:

Χρὴ δὲ καὶ **ὁρισμῷ** λαμβάνειν, ἐφ' ὧν ἐνδέχεται, τὴν καθόλου πρότασιν μὴ ἐπ' αὐτῶν ἀλλ' ἐπὶ τῶν συστοί-χων. παραλογίζονται γὰρ ἑαυτούς, ὅταν ἐπὶ τοῦ συστοίχου λη-φθῇ ὁ ὁρισμός, ὡς οὐ τὸ καθόλου συγχωροῦντες, οἷον εἰ δέοι λαβεῖν ὅτι ὁ ὀργιζόμενος ὀρέγεται τιμωρίας **διὰ φαινομένην ὀλιγωρίαν**, ληφθείη δ' ἡ ὀργὴ ὄρεξις εἶναι τιμωρίας διὰ φαινομένην ὀλιγωρίαν δῆλον γὰρ ὅτι τούτου ληφθέντος ἔχοι-μεν ἂν καθόλου ὃ προαιρούμεθα. (156a27–34)

a27 ὁρισμῷ φΛᴹˣγ Aᵖ[527.32-BFd²⁷h], cf. Aᵖ[527.32–3: δι' ὁρισμοῦ] : ὁρισμὸν ΛᶜᵉᵗᵗΨ Aˡ[527.31], cf. Aᵖ[527.32-aDPZE, cf. A, cf. d¹ᶻ] ‖ a31–2 διὰ φαινομένην ὀλιγωρίαν φΛ : om. Ψγ ‖

Here I am primarily concerned with ὁρισμῷ in a27: despite the fact that all Greek manuscripts mentioned in the apparatus have it,[16] I claim that the reading ὁρισμόν, which we only find in ΛΨ, is the original reading. The justification is that Alexander read the accusative, even though he also adds a clause which might be taken as a reference to an additional dative form. For Alexander's commentary *ad locum* runs as follows:

156a27   Χρὴ δὲ καὶ ὁρισμὸν λαμβάνειν

Δεῖ, φησί, καὶ ὁρισμὸν πειρᾶσθαι λαμβάνειν, ἐφ᾽ ὧν ἐνδέχεται δι᾽ ὁρισμοῦ λαβεῖν τὴν καθόλου πρότασιν, ὁριζόμενον μέντοι μὴ αὐτὸ τὸ προκείμενον ὁρίζεσθαι ἀλλά τι τῶν συστοίχων αὐτοῦ· λαβόντας γὰρ ἐπ᾽ ἐκείνου δι᾽ ὁρισμοῦ ὃ βουλόμεθα, ῥάδιον καὶ ἐπὶ τὸ προκείμενον σύστοιχον ὂν ἐκείνῳ μεταφέρειν τὸ ληφθέν. (*In Topica* 527.31–528.3)[17]

Both in the lemma and in the first sentence Alexander takes Aristotle to claim that one should secure the universal proposition *as a definition*, if that is possible. In the case of Alexander's paraphrase this is not immediately clear, for the situation Aristotle envisages, and Alexander tries to describe, is rather complex. The situation is as follows: The questioner Q wants to secure a universal proposition *u* of the form *F* is *G*; Q does so by formulating a question phrased in terms corresponding to *F* and *G*, that is, by way of terms which have the same lexical root as *F* and *G*, but differ systematically in their morphology; this corresponding question should then be asking for a definition. If then the answerer A accepts the definition, A has given Q the universal proposition *u*, because what applies in the case of terms corresponding to *F* and *G* also holds in case of *F* and *G* themselves. Now when Aristotle says that "one must secure the universal proposition *as* a definition (ὁρισμόν)", the definition he refers to is the definition phrased in the corresponding terms – the universal proposition Q strives for *need* not itself in its very formulation be a definition, as we shall see. Alexander clarifies the situation by describing the relevant cases as cases "in which it is possible to secure the universal proposition *through* a definition (δι᾽ ὁρισμοῦ)", which comes close to the dative ὁρισμῷ. However, Alexander also thinks Aristotle assumes that the universal proposition which Q is to secure is itself a definition, for he mentions "the very thing set to Q to define (αὐτὸ τὸ προκείμενον ὁρίζεσθαι)", which refers to the universal proposition – which he can only think if he read the accusative ὁρισμόν. Moreover, if Alexander had read the dative, he would not have phrased the first sentence of his comments in the complicated way he does, for then he could easily have stayed closer to Aristotle's formulation: Δεῖ, φησί, καὶ δι᾽ ὁρισμοῦ πειρᾶσθαι λαμβάνειν, ἐφ᾽ ὧν ἐνδέχεται, τὴν καθόλου πρότασιν.

That Aristotle does not *require* the universal proposition *u* to be a definition is already intimated by the fact that he never refers to *u* as a definition, but always as (τὸ) καθόλου (a30 and a34), while he refers to the question phrased in terms corresponding to *F* and *G* as *the* definition (ὁ ὁρισμός at a30). It becomes all clearer if one pays attention to the fact that while the corresponding question in the example given is whether "someone who is angry desires revenge because of an apparent

slight (διὰ φαινομένην ὀλιγωρίαν)", the universal proposition *u* itself does not contain the words διὰ φαινομένην ὀλιγωρίαν, at least not on the reading featuring in Ψ and the γ group, and thus would itself not be a definition, because it is incomplete. The scenario that these words are absent in Ψ and the γ group because of *saut du (presque) même au même* from ΤΙΜѠΡΙΑC to ΟΛΙΓѠΡΙΑΝ is really less likely than that they were added in the φ branch and also in Λ to make the universal proposition a definition as well: the odds of contamination are in the tradition of the *Organon* significantly higher than those of unconnected and uncorrected errors.

2.2.   *Early Significant Insertions into the Text*

With the final passage testifying to an original reading which has virtually disappeared from the textual tradition, we have also encountered a case of the type that I want to discuss next: passages in which at an early stage of the tradition significant phrases have been inserted into the text. They are actually quite common in both the *Topics* and the *Sophistical Refutations* and can usually be unmasked on the basis of the principle that there are no palaeographical reasons for its absence in part of the manuscript tradition. It is, however, dangerous to apply this principle unrestrictedly, for it is not to be excluded that a phrase disappears from the text in part of the tradition because it is just struck for other reasons – just as, for example, the substitution of συλλογισμός for σολοικισμός at the beginning of *SE* 34, discussed earlier, started probably as a scribal error which then conquered almost the whole tradition.

A first striking example we encounter in the important second chapter of the *Sophistical Refutations*, where Aristotle defines four types of deductions: didactic or demonstrative deductions, dialectic deductions, peirastic deductions, and eristic deductions. According to Ross Aristotle would define eristic deductions as follows:

ἐριστικοὶ δὲ οἱ ἐκ τῶν φαινομένων ἐνδόξων, **μὴ ὄντων δέ**, **συλλογιστικοὶ ἢ** φαινόμενοι συλλογιστικοί. (165b7–8)
b7ἐνδόξωνμὴὄντωνδέΒχΨᶻΨᵛ,cf.Aᵖ[*InTopica*574.19–20]:ἐνδόξωνμὴ ὄντων hi : ἐνδόξων φ[sine B]Ψᵞ ‖ b8 συλλογιστικοὶ ἢ φαινόμενοι συλλογιστικοί BuΨᵛ : συλλογιστικοὶ ἢ φαινομένων συλλογιστικοί hi : φαινόμενοι συλλογιστικοί ΑβDCcΨᶻ : συλλογιστικοί Λ : συλλογιστικοὶ ἢ φαινόμενοι e ‖

From the distribution of the variant readings, however, it will be clear that the φ branch, just as the common ancestor of the three Arabic translations, does not feature μὴ ὄντων δέ at b7, though the clause has been inserted into B and two of the Arabic translations. Similarly, at b8 both the φ branch as well as the γ group merely read φαινόμενοι συλλογιστικοί, from which it appears that συλλογιστικοὶ ἢ is a later insertion (actually featuring in only a few manuscripts, but probably also the origin of the reading συλλογιστικοί in Λ). There is not really any doubt that both phrases are insertions, because there are no palaeographical reasons that they

would have dropped out, and it is difficult to imagine that they would be struck deliberatively. On the other hand, it is easy to understand why they have been added because they both stem from a common source: φαινομένων and φαινόμενοι were interpreted as referring to *merely* apparent things, and then taking the parallel definition in *Topics* I 1: ἐριστικὸς δ' ἐστὶ συλλογισμὸς ὁ ἐκ φαινομένων ἐνδόξων μὴ ὄντων δέ, καὶ ὁ ἐξ ἐνδόξων ἢ φαινομένων ἐνδόξων φαινόμενος (100b23–5) as a source of inspiration, μὴ ὄντων δέ was added.

Another dramatic example can be found in *Topics* VIII 2. According to the majority of manuscripts, Aristotle would have written:

Ὅταν δὲ ἐνδέχηται τὸ αὐτὸ ἄνευ τε τοῦ ἀδυνάτου καὶ διὰ τοῦ ἀδυνάτου συλλογίσασθαι, ἀποδεικνύντι μὲν **καὶ μὴ διαλεγομένῳ** οὐδὲν διαφέρει οὕτως ἢ ἐκείνως συλλογίσασθαι, διαλεγομένῳ δὲ **πρὸς ἄλλον οὐ χρηστέον τῷ διὰ τοῦ ἀδυνάτου συλλογισμῷ**. ἄνευ μὲν **γὰρ** τοῦ ἀδυνάτου συλλογισαμένῳ οὐκ ἔστιν ἀμφισβητεῖν ὅταν δὲ τὸ ἀδύνατον συλλογίσηται, ἂν μὴ λίαν ᾖ περιφανὲς ψεῦδος ὄν, οὐκ ἀδύνατόν φασιν εἶναι, ὥστ' οὐ γίνεται τοῖς ἐρωτῶσιν ὃ βούλονται. (157b34–158a2)

b35–36 καὶ μὴ διαλεγομένῳ φΛγ : om. ΨC Aᵖ[537.16] ‖ b37 δὲ πρὸς ἄλλον ABC : δὲ βχ ‖ b37–38 οὐ χρηστέον – συλλογισμῷ φΛC : om. Ψγ Aᵖ[537.21–25] ‖ b38 ἄνευ – ἀδυνάτου φΛγ : om. Ψ ‖ b38 μὲν γὰρ φΛC : μὲν Dcu : om. e [Ψ] ‖

There are three clauses in bold: καὶ μὴ διαλεγομένῳ at b35–6, πρὸς ἄλλον at b37, and οὐ χρηστέον τῷ διὰ τοῦ ἀδυνάτου συλλογισμῷ . . . γὰρ at b37–8. Brunschwig strikes the first clause, on the ground that it is redundant, but perhaps also because he accords some exceptional authority to C.[18] We may now add the exemplar of the Arabic translation, which also seems to omit this clause, thus reinforcing the support for Brunschwig's decision. Brunschwig is probably right in his suspicions of this clause, though it would mean that it has enjoyed a tremendous success as an insertion, for it must then have been inserted up to three times into the manuscript tradition, at least once in φ and then perhaps separately in some immediate ancestor of Boethius' exemplar and in the rest of the χ side of the stemma (apart from C).

Far more spectacular, however, are the other two clauses in bold, especially the third. According to this third clause, Aristotle would rule out the use of indirect arguments in dialectic altogether: "one should not use them", he says. However, the larger part of the χ side of the stemma does not have this third clause, and if one reads Alexander's commentary, then it becomes clear that he did not know this clause either: "In dialectics probative proofs are more useful" (*In Topica* 537.21) is the point coming closest to this clause, and that is not very close. Moreover, to explain the distribution of readings over the manuscripts, we just have to assume that Λ was contaminated from the φ side.

It is of course not to be excluded that this third clause was introduced on purpose, but it is more likely that the largest part of the third clause started its life as a gloss, then ended up in the main text, after which γάρ was inserted to turn everything into a smooth whole. The clause πρὸς ἄλλον must have been inserted

after the introduction of the third, for only three manuscripts, each featuring the third clause as well, have it.

The next example concerns an addition to make a list complete – we find it in *Topics* VI 4, where Ross and Brunschwig print:

[b5] ἁπλῶς μὲν οὖν γνωριμώτερον τὸ πρότερον τοῦ ὑστέρου, οἷον στιγμὴ γραμ-μῆς καὶ γραμμὴ ἐπιπέδου καὶ ἐπίπεδον στερεοῦ . . . [b9] ἡμῖν δ᾽ ἀνάπαλιν ἐνίοτε συμβαίνει μάλιστα γὰρ τὸ στερεὸν ὑπὸ τὴν αἴσθησιν **πίπτει**, τὸ δ᾽ ἐπίπεδον μᾶλλον τῆς γραμμῆς, **γραμμὴ δὲ σημείου μᾶλλον**· οἱ πολλοὶ **γὰρ** τὰ τοιαῦτα **προ**γνωρίζουσιν· τὰ μὲν γὰρ τῆς τυχούσης, τὰ δὲ ἀκριβοῦς καὶ περιττῆς δια-νοίας καταμαθεῖν ἐστιν. (141b5–14)

b11 πίπτει cueM : πίπτει ἐπιπέδου φΛD [τοῦ ἐπιπέδου πίπτει V, πίπτει τοῦ ἐπιπέδου Λ?D] : om. C ‖ b11–2 γραμμὴ δὲ σημείου φυM : om. ΛDce : ἡ γραμμὴ τῆς στιγμῆς C ‖ b12 μᾶλλον ab : διὸ μᾶλλον Phiχ ‖ γὰρ ab : om. Phiχ ‖ προγνωρίζουσιν φ : γνωρίζουσιν χ ‖

As one can see in the apparatus, a lot was going on at early stages of the manu-script tradition. Because Aristotle gives at 141b6–7 as examples of pairs of which the prior is better known than the posterior three relations: *point–line*, *line–plane figure*, and *plane figure–solid*, all kinds of attempts are made to introduce the rela-tions of this list as examples of pairs of which the one is better known to us than the other. Dissatisfied that Aristotle would merely claim that "a solid falls most of all under perception", both in the sub-archetype φ and in some manuscripts of the χ branch (here Λ and D) "a plane figure" has been added at b11. Since the addition, being in the genitive, does not fit grammatically, editors decide to go against the majority.

However, it appears that a similar dissatisfaction would explain the appear-ance of the third pair, *line–point*, as an example of such a pair, for the phrase γραμμὴ δὲ σημείου only appears in, again, the φ branch and then in two further manuscripts of the χ branch. There is no need for it, as it is not necessary for Aristotle to have given the full list of examples second time round. What is more, it is clearly to be disqualified as a later insertion into the text because Aristotle would in such cases never use the word σημεῖον rather than στιγμή (just as he uses στιγμή at b6).

And that is not all. Probably because it was felt that the phrase γραμμὴ δὲ σημείου would require the word μᾶλλον, the word διό, which would block the use of the occurrence of μᾶλλον in this sense, was struck and the particle γάρ was inserted in the φ branch (*in casu* ab – in G a leaf is missing here). That the interven-tion was to strike διό and to insert γάρ, and not the other way round, also appears from the position of μᾶλλον at the end of the clause at b12 after its more natural position in the preceding clause at b11. Finally, since there is no palaeographical reason that προ in προγνωρίζουσιν at b12 would drop out, it is most likely that it was also added at an early stage in the φ branch.

A perceived incompleteness is often the explanation for the addition of a completing clause. In *Sophistical Refutations* 5, 166b37–167a6, there is the following example:

> Οἱ δὲ παρὰ τὸ ἁπλῶς τόδε ἢ πῇ λέγεσθαι καὶ μὴ κυρίως, ὅταν τὸ ἐν μέρει λεγόμενον ὡς ἁπλῶς εἰρημένον [167a] ληφθῇ, οἷον, εἰ τὸ μὴ ὄν ἐστι δοξαστόν, ὅτι τὸ μὴ ὄν ἔστιν· οὐ γὰρ ταὐτὸν εἶναί τέ τι καὶ εἶναι ἁπλῶς. ἢ πάλιν ὅτι τὸ ὂν οὐκ ἔστιν ὄν, εἰ τῶν ὄντων τι μὴ ἔστιν, οἷον εἰ μὴ ἄνθρω- πος· οὐ γὰρ ταὐτὸ τὸ μὴ εἶναί τι καὶ ἁπλῶς μὴ εἶναι. φαί- νεται δὲ διὰ τὸ πάρεγγυς τῆς λέξεως καὶ μικρὸν διαφέρειν τὸ εἶναί τι τοῦ εἶναι, **καὶ τοῦ μὴ εἶναί τι τὸ μὴ εἶναι**.

> a6 καὶ τοῦ μὴ εἶναί τι τὸ μὴ εἶναι aΛChe : καὶ τὸ μὴ εἶναί τι τὸ μὴ εἶναι bi : καὶ τὸ μὴ εἶναί τι τοῦ μὴ εἶναι u : τὸ μὴ εἶναι c : om. GDΨ* ||

In this passages Aristotle gives a number of examples of ignoring a relevant qual- ification which all concern the difference between *(not) being something* and *(not) being* without qualification. He explains that it is easy to fall prey to this fallacy: they appear the same because the difference is small – and according to important manuscripts from both sides of the stemma, notably the α group and Λ, this con- cerns the small difference between *being something* and *being*, as well as between *not being something* and *not being*, as they also read the phrase in bold. However, there are also on both sides of the stemma manuscripts in which the phrase in bold is absent: G, D, and very importantly, the common ancestor of all three Arabic transla- tions. Further, it is likely that the only similar phrases in manuscripts b, i, u, and c were added, thus suggesting that both the β (Gb) and the γ group originally did not feature the phrase. Moreover, strictly speaking it is not necessary to have the phrase. Though it cannot be excluded that the phrase disappeared from these manuscripts because of *saut du même au même* from the second to the fourth εἶναι at a6, it is more likely that the phrase as an early insertion to make up for a perceived incom- pleteness because it seems much more likely that it was inserted at three different points in the tradition (in α, in Λ, and in Che) than that it disappeared at three differ- ent points in the tradition (in that case in β, in Dcu, and in Ψ*).

A further example of the insertion of a completing clause can be found in *Topics* II 9. Ross prints:

> Ἔτι ἐπὶ τῶν γενέσεων καὶ φθορῶν καὶ ποιητικῶν καὶ φθαρτικῶν, καὶ ἀναιροῦντι καὶ κατασκευάζοντι. ὧν γὰρ αἱ γενέσεις τῶν ἀγαθῶν, καὶ αὐτὰ ἀγαθά, καὶ εἰ αὐτὰ ἀγα- θά, καὶ αἱ γενέσεις **εἰ δὲ αἱ γενέσεις τῶν κακῶν, καὶ αὐτὰ τῶν κακῶν, <καὶ εἰ αὐτὰ τῶν κακῶν, καὶ αἱ γενέσεις τῶν κακῶν>**. (114b16–20)

> b19–19bis εἰ δὲ αἱ γενέσεις τῶν κακῶν καὶ αὐτὰ τῶν κακῶν α : καὶ ὧν αἱ γενέσεις τῶν κακῶν καὶ αὐτὰ τῶν κακῶν GΛ^cett·Chiu : om. βΛ^OdDc A^p[201.3–4] ||

The full rule Aristotle sets up in this passage is of course that if the generation of *x* is good/bad, *x* itself is good/bad and *vice versa*. However, there is no source which features the converse for the bad side, which suggested to Ross that it had dropped out by *saut du même au même* – he proposed an insertion to remedy the perceived incompleteness. What he, and later Brunschwig as well, overlooked, however, is that there is only full manuscript support for the good side of the rule, while for the bad side we have three possibilities: the α group has one version, part of the γ group has another version, and another part of the γ group together with the β group does not have anything (the manuscript tradition of Boethius' translation being divided). That there are no palaeographical explanations for the absence of a clause dealing with the bad side, that the ways in which such a clause is formulated varies, and the fact that Alexander's paraphrase supports the absence of such a clause are together strongly indicative that the archetype did not feature such a clause dealing with the bad side.

2.3.   *Deliberate Early Changes to the Logic of the Text*

In some of the examples discussed thus far, we have seen that in the course of integrating insertions into the text its argumentative structure was changed, in order to save its grammatical structure. However, this fiddling with the logic of the text does not occur only in such contexts; already, at early stages of the transmission of the text, such changes were introduced – which can only have been done deliberately.

A striking example of an attempt at tempering with the logic of the text can be found at *Topics* VII 5, where Ross and Brunschwig print:[19]

> εἴ τε καὶ καθόλου δέοι ἀνασκευάσαι, οὐδ' ὣς
> τὸ ἀντιστρέφειν ἀναγκαῖον ἐπὶ τοῦ ἀνασκευάζειν ἀπόχρη
> γὰρ ἀνασκευάζοντι καθόλου τὸ δεῖξαι ὅτι **κατ' οὐδενὸς** ὢν
> τοὔνομα κατηγορεῖται **καὶ** ὁ λόγος **κατηγορεῖται**. (154b5–8)
>
> b5 εἴ τε β χ : ἔτι εἰ α || κατ' οὐδενὸς VΛDCAᴾ[513.2-aBPE : μηδενὶ ; 513.6] : κατά τινος φcu Aᴾ[513.2-ADS : μή vel μηδέ τινι] || b8 καὶ VC : om. φΛDcu Aᴾ[513.3] || κατηγορεῖται VΛDC Aᴾ[513.3] : οὐ κατηγορεῖται φcu ||

In the context of these sentences, Aristotle says that in order to establish a definition, one should set up a universal deduction whose conclusion converts as well, while in order to destroy a definition a universal deduction is not required, for "it suffices to show that the account is not true of some one of the things under the word" (οὐκ ἀληθεύεται περί τινος τῶν ὑπὸ τοὔνομα ὁ λόγος) (b3–b5). In our two sentences, he imagines the case that it would be required to destroy universally, that is, to deduce a negative universal conclusion: not even in that case (οὐδ' ὣς) the conversion of the conclusion would be a necessary part of the destruction, he says, for "it suffices for someone destroying universally to show that (1) **κατ' οὐδενὸς** ὢν τοὔνομα κατηγορεῖται ὁ λόγος κατηγορεῖται", on the one reading, or

"that (2) **κατά τινος** ὢν τοὔνομα κατηγορεῖται ὁ λόγος **οὐ** κατηγορεῖται", on the other reading. One of these two readings must be a deliberately introduced change, and it must have been introduced early, for (1) occurs already in Boethius, while (2) is the reading of the φ branch. At first sight only (1) is correct, for destroying universally should mean showing that for *none* of the *F*-things the definiens for *F* is true, rather than showing that for *some* of the *F*-things the definiens for *F* is not true. This seems to be supported by Alexander's commentary, for according to Wallies' edition Alexander starts his comments here as follows: Ἀπόχρη, φησίν, ἀνασκευάζοντα καθόλου τὸ δεῖξαι ὅτι *μηδενὶ* ὑπάρχει ὁ ἀποδεδομένος λόγος τῶν ὑπὸ τοὔνομα (*In Topica* 513.2–3).

However, it is not necessary to understand (2) as referring to "*some* of the *F*-things", for the indefinite pronoun may also be used with general import, in the sense of "any".[20] Interpreted thus, the two readings are logically equivalent. It is also clear that (2) is the *lectio difficilior* and that already in late Antiquity it was incorrectly interpreted as having particular import, thus giving rise to (1). What is more, the evidence for Alexander's commentary suggests that the same happened there, for the stemmatic majority of manuscripts likewise feature μή τινι or μηδέ τινι, rather than μηδενὶ.[21]

It is also clear that in b8 καὶ should be struck.

A way of changing the logic of the text which occurs rather frequently, especially at early stages of the manuscript tradition,[22] is the insertion of γάρ or the change from δέ to γάρ or *vice versa*. Most will be due to a similarity between the abbreviations for the two particles, but some will be on purpose or the result of a correction. Also in the *Topics* and the *Sophistical Refutations*, there are quite a few examples of these changes, of which I want to adduce two.

The first one is from the *Sophistical Refutations* 25 (on *secundum quid* fallacies), where Ross prints:

ὁμοίως
[a34] δὲ καὶ τὸ ὂν οὐκ ἔσται οὐ γὰρ ἔσται τι τῶν ὄντων. "ἆρ' ἐν-
δέχεσθαι τὸν αὐτὸν ἅμα εὐορκεῖν καὶ ἐπιορκεῖν;" "ἆρ' ἐγχω-
ρεῖ τὸν αὐτὸν ἅμα τῷ αὐτῷ πείθεσθαι καὶ ἀπειθεῖν;" ἢ οὔτε
τὸ εἶναί τι καὶ εἶναι ταὐτόν (**τὸ γὰρ μὴ ὂν οὐκ** εἰ ἔστι τι,
καὶ ἔστιν ἁπλῶς), οὔτ' εἰ εὐορκεῖ τόδε ἢ τῇδε, ἀνάγκη καὶ
εὐορκεῖν (ὁ **γὰρ** ὁμόσας ἐπιορκήσειν εὐορκεῖ ἐπιορκῶν τοῦτο [b1]
μόνον, εὐορκεῖ δὲ οὔ) (180a33–b1)

a37 τὸ δὲ μὴ ὂν οὐκ αSˢΛDCehΨᵛ : δοτέον οὐ γὰρ VGb : τὸ γὰρ μὴ ὂν οὐκ Ψ^Σ : οὐ γὰρ c?u ‖ a39 δὲ φDCehΨ^Σ : γὰρ ΛcuΨᵛ ‖

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though Ross' τὸ γὰρ μὴ ὂν οὐκ is the result of an administrative error.[23] The situation in the manuscripts is rather complicated. At a37 the reading δοτέον οὐ γάρ, featuring in VGb, is clearly a corruption of τὸ δὲ μὴ ὂν οὐκ, with γάρ added to make up for the loss of the particle δέ. The reading οὐ γάρ of cu is probably a cleaned-up version of the reading of VGb. Thus, there is no real evidence for γάρ at a37, except for, surprisingly, Ψ^Σ. At a39, on the other hand, there is considerable

support in the manuscripts for γὰρ, though more for δὲ. It is difficult to weigh the evidence here since it is quite possible that δὲ is dominant because of contamination from the φ branch in part of the χ branch or because of an attempt to harmonise the two places a37 and a39.

A more dramatic example can be found in *Topics* VI 6, where Aristotle's discusses *topoi* concerning *differentiae*. After having explained that if the alleged definition features terms for things which are not *differentiae* of the genus involved, it is not a definition, Aristotle continues with *topoi* concerning "coordinate *differentiae*" (ἀντιδιῃρημέναι), *differentiae* at the same level in other branches of the single tree of division (according to Brunschwig):

ὁρᾶν δὲ καὶ εἰ ἔστιν ἀντιδιῃρημένον τι τῇ εἰρημένῃ δια-
φορᾷ. εἰ γὰρ μὴ ἔστι, δῆλον ὅτι οὐκ ἂν εἴη ἡ εἰρημένη τοῦ
γένους διαφορά πᾶν γὰρ γένος ταῖς ἀντιδιῃρημέναις δια-
[143b]φοραῖς διαιρεῖται, καθάπερ τὸ ζῷον τῷ πεζῷ καὶ τῷ πτηνῷ
[καὶ τῷ δίποδι]. ἢ εἰ ἔστι μὲν ἀντιδιῃρημένη
διαφορά, μὴ ἀληθεύεται δὲ κατὰ τοῦ γένους. δῆλον **γὰρ**
ὅτι οὐδετέρα ἂν εἴη τοῦ γένους διαφορά πᾶσαι γὰρ αἱ ἀντι-
διῃρημέναι διαφοραὶ ἀληθεύονται κατὰ τοῦ οἰκείου γένους.
ὁμοίως δὲ καὶ εἰ ἀληθεύεται μέν, μὴ ποιεῖ δὲ προστιθε-
μένη τῷ γένει εἶδος. δῆλον **γὰρ** ὅτι οὐκ ἂν εἴη αὕτη
διαφορὰ τοῦ γένους πᾶσα γὰρ διαφορὰ
μετὰ τοῦ γένους εἶδος ποιεῖ. εἰ δ᾽ αὕτη μὴ ἔστι διαφορά, οὐδ᾽
ἡ λεχθεῖσα, ἐπεὶ ταύτῃ ἀντιδιῄρηται. (143a34–b10)

143b3 γὰρ χ Aᵖ[446.28-ABDP] : om. φ Aᵖ[446.28-a] ‖ b7 γὰρ αχ Aᵖ[447.4-ABD] : om. β Aᵖ[447.4-aPE] ‖

Both at b3 and at b7 there is manuscript support both for retaining γὰρ and for dropping γὰρ, and also, the evidence from Alexander is mixed.[24] The underlying issue is how to structure Aristotle's train of thought: (1) if we retain γὰρ at both places, we adopt the structure that the εἰ clause starting at b2 as well as the εἰ clause starting at b6 both depend on ὁρᾶν at a34 and, thus, that they run parallel to the εἰ clause starting at a34, signifying *whether* something is the case; (2) if we strike γὰρ at both places, we adopt the structure that the εἰ clause starting at b2 as well as the εἰ clause starting at b6 both run parallel to the εἰ clause starting at a35 and, thus, that they signify *if* something is the case, with *if* in the sense of "in case"; (3) if we retain γὰρ at only one of the two places, we adopt a mixed structure. It would, however, be somewhat awkward if (1) were the case, for the *whether* question at a34 is an open question, "See also whether there is something coordinate to the *differentia* stated", whereas the two sentences at issue have a negative clause, "εἰ there is a coordinate *differentia*, but it is *not* true of the genus"; and "εἰ it is true [of it], but, when added to the genus, does *not* produce a species" – just as the sentence at b2–3: εἰ γὰρ μὴ ἔστι, δῆλον ὅτι οὐκ ἂν εἴη ἡ εἰρημένη τοῦ γένους διαφορά. Thus, option (2) seems to fit better, but it is not to be excluded that Aristotle might switch from an open question to negative questions, for such questions do occur as well –

and it could just as well be precisely this perceived parallelism between b2–3 and the sentences under discussion that led to γὰρ being struck. Regardless of whether we should accept γὰρ or not, however, it is clear that at an early stage of the tradition scribes were prepared to temper with the logical structure of Aristotle's text.

3. Insertions in the Archetype

Thus far, we have seen that even if we are able to set up a clear stemma, as we are for the *Topics* and the *Sophistical Refutations*, we still need to thread carefully in our search for Aristotle's original text. Contamination may be pushing out readings and thus obliterating Aristotle's words. Aristotle's readers and copyists may have introduced, deliberately or not, under the influence of commentators or at their own initiative, phrases and sentences which were not there, out of desire for completeness, but also to codify their understanding of Aristotle's arguments into the text. They may even have tempered deliberately with the logic of the text.

Fortunately, at all the places I have discussed, we could track down these processes of contaminating and changing the text (even though it was not always possible to identify the original and the deviation from it) because the original reading was still represented among the sources of evidence which happen to have survived and, quite importantly, also because we could evaluate the evidence in the light of the stemma. However, that we could, may not have been more than a matter of luck, in that we do not know what happened before the day of the archetype of the extant manuscript tradition or, possibly, whether a certain insertion or change has taken over the whole extant tradition.

To unmask insertions in the archetype, we have to take recourse to other methods of detection. One common method is to check whether some phrase or sentence is somehow linguistically (grammar or vocabulary) or content-wise suspect. In this way one can in fact only identify the clear cases, for we should have a presumption of "innocence" also in this domain. Another method is to check paraphrases and interpretations in late ancient commentaries for inconsistencies with the text found in the whole extant textual tradition. In the case of the *Sophistical Refutations*, we cannot use this method, but for the *Topics*, we are in the fortunate circumstances to have Alexander of Aphrodisias' commentary. We have already seen that Alexander's commentary can fruitfully be used to identify insertions and changes which have not yet taken over the whole tradition; in case of the extant tradition being unanimous, the method will not be different, though it is heuristically more difficult. In Appendix 1 to this chapter, I will list words and phrases which have been claimed to constitute intrusions and discuss some of them.

At the end of this chapter, I want to discuss a case in which the fact that Alexander does not read a phrase provides sufficient reason for deleting it, despite of it appearing in the whole extant tradition. The reason that it has not been discovered is that the process of contamination can in a way be said to have continued in the present edition by Wallies. It concerns a passage in *Topics* VII 3, where both Ross and Brunschwig's print, as far as the relevant sentence is concerned:[25]

Ἀναιρεῖν μὲν οὖν ὅρον οὕτως καὶ διὰ τούτων ἀεὶ πειρα-
τέον. ἐὰν δὲ κατασκευάζειν βουλώμεθα, πρῶτον μὲν εἰδέναι
δεῖ ὅτι οὐδεὶς ἢ ὀλίγοι τῶν διαλεγομένων ὅρον συλλογίζονται,
ἀλλὰ πάντες ἀρχὴν τὸ τοιοῦτον λαμβάνουσιν, οἷον οἵ τε περὶ
[a10]γεωμετρίαν καὶ ἀριθμοὺς καὶ τὰς ἄλλας τὰς τοιαύτας μα-
θήσεις. εἶθ' ὅτι δι' ἀκριβείας μὲν ἄλλης ἐστὶ πραγματείας
ἀποδοῦναι καὶ τί ἐστιν ὅρος καὶ πῶς ὁρίζεσθαι δεῖ, νῦν δ'
ὅσον ἱκανὸν πρὸς τὴν παροῦσαν χρείαν, ὥστε τοσοῦτον μόνον
λεκτέον ὅτι δυνατὸν γενέσθαι **ὁρισμοῦ** καὶ τοῦ τί ἦν εἶναι **συλ-**
[a15]**λογισμόν.** εἰ γάρ ἐστιν ὅρος λόγος ὁ τὸ τί ἦν εἶναι τῷ πρά-
γματι δηλῶν, καὶ δεῖ τὰ ἐν τῷ ὅρῳ κατηγορούμενα ἐν
τῷ τί ἐστι τοῦ πράγματος κατηγορεῖσθαι, κατηγορεῖ-
ται δ' ἐν τῷ τί ἐστι τὰ γένη καὶ αἱ διαφοραί, φανερὸν ὡς
εἴ τις λάβοι ταῦτα ἐν τῷ τί ἐστι τοῦ πράγματος κατ-
[a20]ηγορεῖσθαι,²⁶ ὅτι ὁ ταῦτα ἔχων λόγος ὅρος ἐξ ἀνάγκης ἂν
εἴη οὐ γὰρ ἐνδέχεται ἕτερον εἶναι ὅρον, ἐπειδὴ οὐδὲν ἕτερον
ἐν τῷ τί ἐστι τοῦ πράγματος κατηγορεῖται. (153a6–22)

a14 ὁρισμοῦ αVGDCM : ὁρισμὸν bPhiΛcu Aᵖ[503.21, 25–504.1] ∥
συλλογισμόν codd. ps-Aᵖ[503.22-N] : om. Aᵖ[503.22-codd.] ∥ a15 ὅρος λόγος
αC : ὁ ὅρος λόγος β Aᵖ[504.5] : ὁρισμος λόγος VD : ὁρισμὸς cuM [Λ:
diffinitio oratio] ∥ a17 **πράγματος β Aᵖ[504.5]** : πράγματος μόνα αχ Ross
Brunschwig ∥ a19 **ταῦτα** β : ταῦτα ἃ μόνα C² Ross : ταῦτα ἃ μόνα ταῦτα
C¹? : ταῦτα μόνον acu Brunschwig : ταῦτα ἃ μόνον VΛD ∥ **τοῦ πράγματος**
κατηγορεῖσθαι acu{M} Brunschwig : τοῦ πράγματος κατηγορεῖται
VΛD Ross : τοῦ πράγματος κατηγορεῖσθαι δεῖ C : κατηγορεῖσθαι τοῦ
πράγματος β ∥

On the text as edited thus, Aristotle would refer to a deduction of the essence
coming about: "one must say only so much, that it is possible that of the defini-
tion and the essence a deduction comes about". However, there are two problems
with this reading. The first problem is that Alexander wrote in his commentary:²⁷

δεύτερον δὲ ὅτι ἡ ἀκριβὴς
περὶ αὐτῶν πραγματεία οὐ τῆς διαλεκτικῆς ἀλλὰ τῆς φιλοσοφίας
ἐστίν. ὥστε τοσοῦτον μόνον λεκτέον, ὅτι δυνατὸν γενέσθαι ὅρον
καὶ τοῦ τί ἦν εἶναι, τουτέστι διὰ συλλογισμοῦ δειχθή-
σεται ὅτι ὁρισμός καίτοι ὅτι μὴ ἔστιν ὅρου ἀπόδειξις, ἐν τῷ δευτέρῳ τῶν
Ὑστέρων ἀναλυτικῶν ἔδειξεν. (*In Topica* 503.19–24)

21 ἐστίν codd. : ἐστί τουτέστι τῆς ἀποδεικτικῆς N ∥ ὅρον codd. N : ὅρου Wallies
∥ 22 εἶναι codd. : εἶναι συλλογισμόν N Wallies ∥ τουτέστι διὰ συλλογισμοῦ
δειχθῆναι ὅτι ὁρισμός codd. : om. N ∥

Clearly, Alexander did not read συλλογισμόν, as Wallies thought he must have,
thus following only N (Nap. III.D. 37), which contains an amplified and redacted,
and thus to be distrusted, version of Alexander's commentary²⁸ – this in fact con-
stitutes a twofold case of contamination, first from the medieval text into N, and

then from N into the modern edition of Alexander. The second problem is that at a14 the reading to be adopted on stemmatic grounds is ὁρισμὸν, not ὁρισμοῦ, which is confirmed by the accusative ὅρον in Alexander. Unlike the genitive form, the accusative form does not sit really well with συλλογισμόν, as Aristotle would be saying that "a definition and a deduction of the essence comes about". These two problems together are solved if we take our lead from Alexander's commentary and strike συλλογισμόν from the text, considering it to be an insertion which was already present in the archetype of the extant manuscript tradition. Moreover, Alexander's interpretative addition may well have been the source for the insertion.

4.   Conclusion

What I hope to have impressed upon the reader is that even if despite the considerable amount of contamination we are able to set up a clear stemma, as we are for the *Topics* and the *Sophistical Refutations*, we still need to thread carefully in our search for Aristotle's original text. Contamination may push out readings and thus obliterate Aristotle's words. Aristotle's readers and copyists may have introduced phrases and sentences which were not there, out of desire for completeness, but also to codify their understanding of Aristotle's arguments into the text. They may have tempered deliberately with the logic of the text. All this may even have happened before the archetype of the extant manuscript tradition so that there are no means of unmasking them with the help of the stemma – we will have to look for other clues betraying them or rely on ancient commentaries. We will have to face up to the fact, however, that for all we know, there may be many more insertions and changes which we will never be able to recognise. In the end, in our search for Aristotle's original text, we may have found a lot of gold but will not have been able to discard all the earth dug up.

Notes

1 I could, and perhaps should, thank many people who in one way or another have contributed to my research into the manuscript tradition of Aristotle's *Organon*. Here I want to single out Alexander Lamprakis, Yury Arzhanov, Nicolás Bambali, and especially Gerhard Endress and Rüdiger Arnzen for disclosing to me the many treasures buried in the Syriac and Arabic translations of the *Organon*.
2 "Half" is here a rough indication, referring to a boundary which does not coincide for all the manuscripts. Since I do not have full collations for Books 4 and 5 of the *Topics* yet, I cannot be exact here.
3 For Book 8, see Hasper and Lamprakis (Unpublished).
4 See Endress and Hasper (2020: 87–91).
5 See also Dorion (1997).
6 Aristotle frequently conceives of fallacies which for themselves constitute invalid arguments, as valid συλλογισμοί, if they include fallacy justifying principles (see *SE* 8, 169b30–40) – and here we have, with the clause ὅταν ὁμοίως ὁτιοῦν ἀξιωθῇ τῷ πράγματι καὶ τῷ συμβεβηκότι ὑπάρχειν, the fallacy justifying principle for fallacies of accident spelt out.

7 It should be mentioned that a reading with the infinite σημαίνειν and without ἄλλα is also to be found in the paraphrase by Sophonias (around 1300) of the *SE*, at 62.31–34. Thus this reading must still have been somehow available at the time.

8 I do not list here the manuscripts which are known (indirect) copies of C: Vat.gr. 244 (ca. 1200), Scor. Φ.III.10 (1285/6), Par.gr. 1972 (XIV), Coisl. 157 (XIV) and Par.Suppl. gr. 644 (XIV). I also do not list Burney 100 (XV), for this is a copy of Toledo 95–08 (information provided by José Maksimczuk).

9 This manuscript remarkably features only the second *topos*.

10 Wallies (1891) emends the text to παρὰ τὸ εἰκὸς, without any good ground – see Brunschwig (1968: 12, fn. 1).

11 Cf. Brunschwig (1968: 14).

12 Here I disagree with Brunschwig (1968: 13–14, 1967: cxxv) – it seems that Brunschwig has only paid attention to the phrase τῷ πρὸ αὐτοῦ ἔν τισι φερομένῳ, whereas I am far more impressed with Alexander's statement: ὡς τὸ εἰκὸς Ἀριστοτέλους διαφόρῳ λέξει τὸν αὐτὸν ὑποσημηναμένου τόπον· διὸ ἔν τισιν ὁ πρὸ τούτου περιήρηται.

13 This seems to come closest to the answer by Brunschwig (1967: cxxv, cf. 50, fn. 1).

14 Brunschwig (1968: 15).

15 One should check folium 138r for oneself: the digitised manuscript is available online and can be found through the Pinakes website (https://pinakes.irht.cnrs.fr). Moreover, for Book 2 the text in G is closely related to u, probably going back to an ancestor of u which still had the second version.

16 Up to now I have only found ὁρισμόν in one other Greek manuscript: Par.gr. 1897A (XIII), but for all I know, it could well be a contamination from Alexander's commentary.

17 On the basis of a larger set of evidence (see Hasper and Schillen (In progress)), it has become clear that Alexander's text deviates probably slightly from the text as edited by Wallies.

18 See his (1968), though in his (1967: cxxv–cxxvii), he has become more temperate.

19 Actually, Brunschwig, following α, prints ἔτι εἰ at b5.

20 Though perhaps limited to contexts involving a negation, just as in *APo* I 2, 72a16: θέσιν μὲν λέγω ἣν μὴ ἔστι δεῖξαι, μηδ' ἀνάγκη ἔχειν τὸν μαθησόμενόν τι· ἣν δ' ἀνάγκη ἔχειν τὸν ὁτιοῦν μαθησόμενον, ἀξίωμα· The τι here means "anything", as is also spelt out by the use of ὁτιοῦν in the next clause.

21 See Hasper and Schillen (In progress) for the claim that S (Par.Suppl.gr. 644) constitutes one half of the stemma for Alexander's commentary.

22 Though they are also found with higher frequency in some individual manuscripts, notably e and to some extent G. In total I have up to now identified about 36 early cases in the *Topics* and the *Sophistical Refutations* together, but since my collations are not yet complete for the *Topics*, there should be about 40 to 45. It is striking that the insertion of or change into γάρ is more frequent and that it is disproportionally frequent in *Topics* VI.

23 Namely in the edition by Strache and Wallies (1923): They took over the collations by Waitz (1844), who does not report any γάρ at a37, but Wallies decided to change δὲ into γὰρ (see his (1922: 326)), without reporting this in the apparatus.

24 For Alexander's paraphrase of b6–8 at *In Top*. 447.1–4 one branch of the stemma (manuscripts aPE) does not read γάρ, featuring the structure εἰ . . . , δῆλον ὅτι . . . , while the other branch (manuscripts ABD) does read it. For Alexander's paraphrase of b2–4 at *In Top*. 446.27–447.1 the clear majority of the manuscripts read γάρ, whereas only the Aldine, which, however, must go back to a Greek manuscript, does not read γὰρ.

25 There are three other changes to the text as adopted by Ross and Brunschwig, indicated in bold in the apparatus.

26 One should entertain the possibility that κατηγορεῖσθαι in a19 is also an early intrusion, for it is not required and there is no palaeographical explanation for the variation in the manuscripts. According to Wallies' edition, Alexander's paraphrase also omits the verb

(*In Top*. 504.10), but since for this stretch we have only the Aldine and Nap. III D 37 as sources, we cannot safely ascribe it to Alexander. What it does show, however, is that at some stage of the history of the text there was probably a text without the verb.

27 Again, the text differs slightly from the one as edited by Wallies – see n. 17.

28 Wallies reports in the apparatus that also two sources read συλλογισμόν, but these reports are mistaken. That Alexander did not write συλλογισμόν also appears from the interpretative addition τουτέστι διὰ συλλογισμοῦ δειχθῆσεται ὅτι ὁρισμός, which would not have made sense if Alexander had written συλλογισμόν (that is also why N omits the addition).

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Appendix 1

Discussion of (Putative) Insertions in the Archetype for the *Topics* and the *Sophistical Refutations*

In the *Sophistical Refutations*, there are not many places at which there probably appear phrases and clauses in the archetype of the extant Greek manuscript tradition which should not be there. In his edition, Ross identifies quite a few places where he thinks a single "small" word, like an article or a conjunct or a preposition should be struck,[1] but very few more substantial additions:

166a3	ἢ καθήμενος	om. Ψ^Σ, cf. G[2]
166a26–27	καὶ μὴ γράφοντα γράφειν	
170b23	Ζήνων	
171a36	δυάδες	hab. Hecquet
183a2	ἢ κατασκευάσει	om. Ψ^Σ – hab. Hecquet

Though there is no good reason to follow Ross for 170b23 and 171a36, Ross seems to be right for 166a3, 166a26–7, and 183a2.[3] That the Syriac translation by Athanasius did not render the suspect phrases at 166a3 and 183a2 might be significant here, as the odds that the translator or a previous scribe struck them for being problematic seem to me to be smaller than that this line of transmission is the only one (perhaps together with G for 166a3 – see note 2) which preserves the original reading, precisely because we do not see it being struck in the whole of the extant tradition.

In the *Topics* there are, however, a considerable number of places where the latest editor, Brunschwig,[4] wants to strike sentences or clauses which are present in a in apparently (almost) all extant manuscripts:

101b7	τοῦτο δ' ἐστὶ τὸ ἐκ τῶν ἐνδεχομένων ποιεῖν ἃ προαιρούμεθα
107b9	πρὸς ὑγίειαν
111b15–6	πρὸς γὰρ τοὺς ὁρι|σμοὺς ῥάων ἡ ἐπιχείρησις
115b26	τοῖς Τριβαλλοῖς [Ross: οὖσι Τριβαλλοῖς]
116a16–7	ἢ οἱ ἐν ἑκάστῳ γένει ἐπιστήμονες
116a24	τῷ ἀγαθῷ
117b31–2	αἱρετώτερον γὰρ ᾧ μηδεμία δυσ|χέρεια ἀκολουθεῖ ἢ ᾧ ἀκολουθεῖ

119a17–8	ἢ ᾧ | ἂν ὑπάρχῃ [Ross del. ἢ]
122b23–4	ἀλλὰ διαφορά
127a3	γένος
127a4–5	μᾶλλον γὰρ κίνησις ἀέρος | τὸ πνεῦμα
129a12, 14	καὶ θυμικὸν
131a35–6	ποτε | καὶ ἑστάναι
132a29–30	ἢ εἰ μή ἐστιν ἴδιον ἑκάστου αὐτῶν | κατ' ἐκεῖνο οὗ τὸ ἴδιον ἀποδέδωκεν
132b3–7	ἔστι δ' ὁ τόπος οὗτος ἀνασκευάζοντι μέν, εἰ μὴ καθ' | οὗ τοὔνομα, καὶ ὁ λόγος ἀληθεύεται, καὶ εἰ μὴ καθ' οὗ ὁ λόγος, καὶ τοὔνομα ἀληθεύεται κατασκευάζοντι δέ, εἰ καθ' | οὗ τοὔνομα, καὶ ὁ λόγος, καὶ εἰ καθ' οὗ ὁ λόγος, καὶ τοὔνο|μα κατηγορεῖται. [Ross quoque]
137a12–7	οἷον ἐπεὶ ὡσαύτως ἔχει | φρόνησις πρὸς τὸ καλὸν καὶ τὸ αἰσχρόν, τῷ ἐπιστήμη ἑκα|τέρου αὐτῶν εἶναι, οὐκ ἔστι δ' ἴδιον φρονήσεως τὸ ἐπιστήμη εἶ|ναι καλοῦ, οὐκ ἂν εἴη ἴδιον φρονήσεως τὸ ἐπιστήμην εἶναι αἰ|σχροῦ. εἰ δ' ἐστὶν ἴδιον φρονήσεως τὸ ἐπιστήμην εἶναι καλοῦ, | οὐκ ἂν εἴη ἴδιον αὐτῆς τὸ ἐπιστήμην εἶναι αἰσχροῦ [Ross del. 137a16–8]
149b26	δυνάμενος
158b29	τῶν ὁρισμοῦ δεομένων
158b37	πλὴν οὐ πολλά γε πρὸς ἕκαστον ἔστι αὐτῶν ἐπιχειρεῖν
162a15–8	ἔστι δὲ φιλόσοφημα μὲν συλλογισμὸς ἀπο|δεικτικός, ἐπιχείρημα δὲ συλλογισμὸς διαλεκτικός, σόφι|σμα δὲ συλλογισμὸς ἐριστικός, ἀπόρημα δὲ συλλογισμὸς | διαλεκτικὸς ἀντιφάσεως. [Ross quoque]

There are clearly indisputable examples of insertions on this list, for example, at 101b7 and 162a15–8,[5] and it is easy to understand why Brunschwig proposes to strike phrases at some places: 107b9 is awkward in the context, 111b15–6 does not fit the context at all, 115b26 is unnecessary and does not fit grammatically, and 127a4–5 has the looks of a gloss and fits badly with the argument.[6] Also the three substantial passages from Book 5 (132a29–30, 132b3–7 and 137a12–7) are good candidates for very early insertions, but then again, Book 5 is a special case.[7]

Moreover, for some of the phrases and sentences from the archetype struck by Brunschwig it can be shown that they are not read by Alexander: 107b9, 111b15–6, 116a16–7, and 117b31–2. The same applies to 119a17–8, even though Brunschwig is not aware of it: the clause ᾧ ἂν ὑπάρχῃ, which does feature in Wallies' edition (1891) of Alexander's commentary (*In Topica* 276.25) in a passage that resembles a quote, should be struck as an intrusion itself because it is only supported by one half of the stemma for that commentary (manuscripts ABD) and not by the other half (manuscripts P and E).

On the other hand, there are also quite a few cases on this list for which I tend to disagree with Brunschwig. For example, Brunschwig does not provide a good argument for distrusting γένος at 127a3, his suspicion of the clause καὶ θυμικὸν at 129a12 and 14 seems to be belied by its use in similar settings in *De Anima* (432a25 and 433b4), and his reconstruction of the argument which provides the context for 122b23–24 is incorrect.[8] Also at 158b29 Brunschwig seems to have misconstrued the import of the clause he proposes to strike,[9] and as far as his proposal to strike ποτε καὶ ἑστάναι at 131a35–6 is concerned, I am inclined to say that Brunschwig is too quick.[10]

Just as the fact that Alexander clearly did not read a certain phrase constitutes a reason for rejecting it, so the fact that Alexander did read it at least makes the burden of proof for striking it considerably higher. Sometimes the evidence provided by Alexander's commentary is clear enough: for example, at 116a24 Alexander clearly reads τῷ ἀγαθῷ so that absent any strong reasons for rejecting it, one should retain it.

Sometimes, however, it is not easy to connect the text as transmitted in the direct tradition with the commentary – there are limits to the usability of commentaries. Unfortunately, there are two examples of this problem which are relevant for Brunschwig's list of passages to be struck. At 158b37 Brunschwig argues that Aristotle's point, that the first elementary proofs in mathematics are easy if the definitions of the principle concepts are known, is not qualified with the remark "though there are not many [such elementary proofs] to argue for with regard to each of [the principles] (πλὴν οὐ πολλά γε πρὸς ἕκαστον ἔστι αὐτῶν ἐπιχειρεῖν)" but merely justified by there not being many intermediate steps. Brunschwig does so on the basis of an incorrect collation of the reading of C but also because he does not recognise a reference to this remark in Alexander's comment that

> [the first of the elements] are easy to prove, <u>but not by way of many</u> (<u>οὐ διὰ πολλῶν δὲ</u>), because of there with them not being an easy availability of many middle [terms], through which the proof goes, because of them being close to the principles (τῷ μὴ πολλῶν τῶν μέσων, δι' ὧν ἡ δεῖξις, εὐπορίαν εἶναι ἐπ' αὐτῶν διὰ τὸ πλησίον τῶν ἀρχῶν . . . εἶναι αὐτὰ).
>
> (*In Top.* 546.7–9 Wallies)

The underlined clause, which for the elements οὐ and πολλά/πολλῶν is identical to Aristotle's remark, also coincides exactly with it as far as its argumentative position is concerned. The reason that Brunschwig does not recognise this is probably that in this way it is not easy to understand Alexander's διὰ. However, it is possible to make sense of it, for it seems as if Alexander interprets Aristotle's remark as implying that there are three levels: (1) the principles with their definitions, (2) the very first claims based on them, which are then used to establish (3) further first elements; that is, he seems somehow to interpret πολλά as subject of ἐπιχειρεῖν rather than as object.

Also at 149b26 the evidence of Alexander does not justify the striking of the phrases at issue – and that in a rather instructive way. The larger context for 149b26 is in Ross' edition:

Ἐνίοτε δὲ ὁρίζονται οὐ τὸ πρᾶγμα ἀλλὰ τὸ πρᾶγμα [b25]εὖ ἔχον ἢ τετελεσμένον. τοιοῦτος δὲ ὁ τοῦ ῥήτορος καὶ ὁ τοῦ κλέπτου ὅρος, εἴπερ ἐστὶ ῥήτωρ μὲν ὁ **δυνάμενος** τὸ ἐν ἑκά-στῳ πιθανὸν **θεωρεῖν** καὶ μηδὲν **παραλείπων**, κλέπτης δὲ ὁ λάθρᾳ λαμβάνων δῆλον γὰρ ὅτι τοιοῦτος ὢν ἑκάτερος ὁ μὲν ἀγαθὸς ῥήτωρ ὁ δὲ ἀγαθὸς κλέπτης ἔσται. οὐ γὰρ ὁ λάθρᾳ λαμβάνων ἀλλ' ὁ βουλόμενος λάθρᾳ λαμβάνειν κλέπτης ἐστίν. (*Topics* VI 12, 149b24–30)

b24 πρᾶγμα² αVPhiχΨ : om. Gb Aᵖ[484.9, 17] ‖ b25 δὲ φγΨ : δὲ καὶ VΛ ‖ b26 μὲν φΛDCe : om. cu ‖ b26–27 δυνάμενος . . . θεωρεῖν codd. ΛΨ : . . . θεωρῶν Aᵖ[484.17–8] ‖ παραλείπων Ccue Aᵖ[484.18] : παραλιπεῖν φ[sine A] : παραλείπειν AVD [Λ: παραλιπεῖν vel παραλείπειν] [Ψ] ‖ b28 ὂν αχΨ : ὢν ἀγαθὸς β ‖ b29–30 ἀγαθὸς κλέπτης ἔσται αχ : κλέπτης ἔσται ἀγαθὸς β ‖ b30 λαμβάνειν φDCe : λαβεῖν cu ‖

Partly on the basis of Alexander's commentary, Brunschwig strikes δυνάμενος and changes the infinite θεωρεῖν into the participle θεωρῶν, for Alexander writes:

διὸ ἐπὶ πάντων τούτων ἕτερος ὁ τοῦ πράγματος | ὅρος καὶ ἄλλος ὁ τοῦ εὖ ἔχοντος. ῥήτωρ γὰρ οὐχὶ <u>ὁ τὸ ἐν ἑκάστῳ | πιθανὸν θεωρῶν καὶ μηδὲν παραλείπων</u>, ἀλλὰ κἂν παραλίπη τινὰ τῶν | ἐνδεχομένων πρὸς τὸ προκείμενον πιθανῶν, βούληται δὲ πᾶν τὸ πιθανὸν | εὑρίσκειν τε καὶ παρέχεσθαι· εἰσὶ γάρ τινες καὶ ἐν ταῖς ἐπιστήμαις καὶ | ταῖς τέχναις ἀτελέστεροι. (*In Topica* 484.16–21)

18 παραλίπη ADPE : παραλείπη a Wallies : παραλείποι B ‖ 19 ἐνδεχομένων aAD : ἐνδόξων BPE ‖ προκείμενον aBPE : προσκείμενον A : κείμενον D ‖ πιθανῶν a : πιθανόν ABDPE ‖ βούληται a : βούλεται ABDPE ‖ τινες aABPE : τι D ‖ ἀτελέστεροι B : ἀτελέσται aAPE : ἀτελέστερον D ‖

Now Brunschwig takes the underlined clause, without δυνάμενος and with the participles θεωρῶν and παραλείπων, to be a quote from Aristotle's text as read by Alexander, and then argues that the participle παραλείπων in Ccue is a remnant of the original text, which in the subsequent tradition was replaced by a clause with δυνάμενος and the infinitives θεωρεῖν and παραλείπειν/παραλιπεῖν. However, the underlined clause need not be a quote, but could just as well be a paraphrase which stays close to what is paraphrased – and then there is no argument anymore that δυνάμενος was inserted into the text. This example shows that it is important to distinguish strictly between passages in a commentary which are explicitly indicated as quotes and passages which are not: even if the latter remain close to Aristotle's text, they do not show that the commentator read something else. Only in the case that the manuscript tradition itself features variety, and the commentary, even while paraphrasing, stays closer to one of the variants, can this fact be used to argue that it is at least more likely that this variant was also read by the commentator. A case in point appears also in this passage, namely, at b24, where Gb do not read the second πρᾶγμα, just as Alexander's paraphrase repeatedly does not. Since πρᾶγμα could not have fallen out for palaeographical reasons, the scenario that it was added in other parts of the φ branch seem more probable than that it was struck in Gb under the influence of Alexander's commentary, also because the insertion of πρᾶγμα constitutes as far as the content is concerned the *lectio facilior*, making

it clearer that both definition attempts concern the same thing. Thus, we have hit upon another example of a reading which is almost pushed out of existence among the extant manuscripts.

Notes

1 Here is a list: 165b17 τὸ, 172b13 πρὸς, 173b27 καὶ, 177b3 καὶ², 179a19 λέγειν, 179b22 εἰ, 183a17 καὶ, 183a25 ἢ, and 184b6 ἤ. It would go too far here to argue the point, but for none of these places we should follow Ross. For 179b22 I have argued thus in Hasper (2008).

2 At 166a3 G reads: καθήμενος, where the other sources (ABbΛDCcuehiΨᵛ) have κάμνων ἢ καθήμενος. One possible way of explaining this is that the ancestor of G did not have ἢ καθήμενος but featured a supralinear addition, which ended up replacing κάμνων rather than being added to it.

3 It is a mystery to me how one can think, like Hecquet (2019: *ad locum*), that ἢ κατασκευάσει should be retained, for there is no place for establishing something ἔνδοξον in the context, which concerns arguments that have ἔνδοξα for premises and a conclusion that denies an ἔνδοξον. By the same token, however, the insertion of ἢ κατασκευάσει must be the result of a deep misunderstanding of the logic of the situation. Another possibility is that the whole sentence ἀεὶ γὰρ ἐξ ἐνδόξων ὁμοίως ἔνδοξον ἀναιρήσει ἢ κατασκευάσει at 183a1–2 is to be struck as a gloss, as it is absent from Ψᵛ.

4 I list the phrases and sentences struck by Brunschwig, because he is much more inclined to strike than Ross; moreover, if Ross proposes to strike something which Brunschwig would want to retain, Brunschwig is usually right: Ross strikes words and phrases at 114b3 δικαίως καὶ, 128b16 δὲ, 132b31 τὸ, 133a36 τὸ, 138b3 τοῦ, 154a12 καὶ, and 161a11 ἤ, but none of them seems necessary.

5 In addition to Brunschwig (1967) and (2007) *ad locum*, see also Smith (1997: 144).

6 For each of these passages, see Brunschwig (1967) *ad locum*.

7 Reinhardt (2000) has shown that Book 5, dedicated to τόποι on proper or unique features (ἴδια), is in its present form the product of later rewriting, even though it goes back to Aristotle himself, so that it will be more difficult to argue that passages constitute insertions into the archetype. Indeed, Reinhardt, at 165, thus argues that 132a12–7 should be retained, and at 132a29–30 Brunschwig himself also seems a little hesitant.

8 See Brunschwig (1967: 166–7, note 2). Brunschwig mistakenly takes Aristotle in the whole of 122b19–24 to provide a single argument that *odd* does not participate in the genus *number*, which would have the claim (b19) that *odd* is a differentia in *number* for one of its basic premises, the other two basic premises being that whatever participates in a genus is either a species or an individual (ἄτομον) (b20–1) and that a differentia is neither a species nor an individual (b21–2), which two basic premises together would lead to the intermediate conclusion that a differentia does not participate in a genus. On such a reconstruction, the point that *odd* does not participate in the genus may not be used, Brunschwig notes, to establish that it is a differentia, for in the main argument the point that *odd* is a differentia is used to establish that it does not participate of the genus. Moreover, Brunschwig continues, the inference from *odd* not participating in the genus to it being a differentia would be invalid anyway, because it not being a species or an individual does not suffice for it being a differentia. However, the conclusion Aristotle wants to reach in the passage is not that *odd* does not participate in the genus *number* but rather that *odd* is not a species of number, for that is what is said one should check (b18). For this Aristotle gives *two* separate reasons: (a) *odd* is a differentia and thus not a species (b19–20); (b) *odd* does not participate in the genus *number* and thus cannot be a species (b23). That Aristotle repeats the point that *odd* is rather a differentia at b23–4 need not be understood as part of the conclusion but rather as an aside.

9 Smith (1997: 27) also retains it, without comment.

10 Brunschwig (2007: 149, n. 6) gives two reasons for his proposal. First, he cannot find the example in Alexander's account at *In Top.* 385.24–386.6. However, those lines only appear in the Aldine and in a version of Alexander's commentary, found in Nap. III.D 37 (N), which has been partly reworked and amplified, and are thus not Alexander's. Second, he cannot make sense of the example of 'at some time moving and/or standing still' (τὸ κινεῖσθαί ποτε καὶ/ἢ ἑστάναι, depending on whether one follows φΛ or γ) as an only temporary proper feature of an animal: as a whole it seems always proper (cf. Reinhardt (2000: 135)). That does not seem an insoluble problem, however. One could argue, for example, that regardless whether one reads καὶ or ἢ, the phrase τὸ κινεῖσθαί ποτε καὶ/ἢ ἑστάναι is meant to imply a distinction between two temporary proper features, and that for each it is strictly speaking always true that it is proper feature, because it is all the time true that animals *at some time* move, and thus that it cannot become a temporary proper feature (ὃ οὐ γίνεται ποτε ἴδιον (131a35)). Moreover, it is then also unclear whether an animal moves at the time that 'moving at some time' has been rendered as a proper feature – and that is the general fault for which the example is given.

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Appendix 2

The Prior and Posterior Analytics

The main chapter focuses on early insertions in the *Topics* and *Sophistical Refutations*, but we can be sure that these two works are not exceptional in this respect and thus that the rest of the *Organon* is not different. Because I do not have (almost) full collations for a substantial set of sources for the other works of the *Organon*, I will limit myself in this appendix to giving four examples of early insertions from the *Prior Analytics* and *Posterior Analytics*, partly already known, but not all appreciated in all their details.

One important relevant fact here is that the stemmatic situation for the *Prior Analytics* and *the Posterior Analytics* differs considerably from that for the *Topics* and *Sophistical Refutations*, in that the χ branch of the stemma seems to be reduced to a small number of sources offering frequently readings which deviate from the large majority of manuscripts. For the *Posterior Analytics* it seems that n (Ambr. L 093 sup.), D (Par.gr. 1843), and the exemplar of the Arabic translation are the only sources which consistently provide us with readings which are obviously correct but also share common errors. There are surely some more independent manuscripts stemming from that branch, but they are bound to have been contaminated rather massively.[1]

This branch of the stemma thus hardly survived the transition of the ninth and tenth centuries, let alone the transition around 1200. A similar situation seems to apply for later parts of the *Prior Analytics*, where again n and D (though here more heavily contaminated, it seems) and the Arabic translation, now sometimes joined by the Latin and Syriac translations, seem to constitute one half of the stemma. Thus, there are two major differences between the textual traditions of the *Topics* and the *Sophistical Refutations*, on the one hand, and the *Analytica*, on the other: (1) There is no clear group γ belonging to the χ branch of the stemma – rather the manuscripts belonging to this group, which later the Byzantine vulgate seems to spring from, notably cu, now go normally with the φ group; and (2) the levels of contamination seem to be much higher, also, for example, as early as in the exemplar of Boethius' translation, so that it is consequently far more difficult to identify the basic groups of the stemma and thus to identify patterns of contamination and to unmask early insertions.

It may thus be more difficult, but it is certainly not impossible to identify certain clauses and phrases as early insertions. For the *Posterior Analytics*, a particularly nice example of an obviously correct reading which we only know from nDΨ as well as from the anonymous commentary which derives from Alexander, concerns the infamous sentence at II 19, 100a6–8, which according to Ross should read:

> Ἐκ μὲν οὖν αἰσθήσεως γίνεται μνήμη,
> ὥσπερ λέγομεν, ἐκ δὲ μνήμης πολλάκις τοῦ αὐτοῦ γινομέ-
> νης ἐμπειρία αἱ γὰρ πολλαὶ μνῆμαι τῷ ἀριθμῷ ἐμπειρία
> μία ἐστίν. ἐκ δ᾽ ἐμπειρίας **ἢ ἐκ παντὸς** ἠρεμήσαντος τοῦ κα-
> θόλου ἐν τῇ ψυχῇ, τοῦ ἑνὸς παρὰ τὰ πολλά, ὃ ἂν ἐν ἅπα-
> σιν ἓν ἐνῇ ἐκείνοις τὸ αὐτό, τέχνης ἀρχὴ καὶ ἐπιστήμης,
> ἐὰν μὲν περὶ γένεσιν, τέχνης, ἐὰν δὲ περὶ τὸ ὄν, ἐπιστήμης.
> (100a3–9)
>
> ---
>
> 100a6 ἢ ἐκ παντὸς ABV²G²n²D²Chcue P^l[436.1]P^c[436.3] :
> ἤ ἐκ παντὸς V¹G¹b : ἢ ἐκτὸς d : om. n¹D¹Ψ An^l[600.26]
> An^c[602.2] : non reddit P^p[435.25]T[63.19–24] ‖

In the literature the import of the phrase ἢ ἐκ παντὸς is hotly debated, especially the question what the meaning of ἤ should be. Taking their cue from Aristotle's statement that experience (ἐμπειρία) is concerned with particulars and not with the universal (*Metaphysics* I 1, 981a15–24), some interpreters think Aristotle could not have said that "from experience or from the universal as a whole having come to rest in the soul . . . a principle of art and ἐπιστήμη comes to be" if "or" indicates that a more informative description of experience is offered. For this reason they argue that ἤ should be understood in a corrective or progressive way so that, strictly speaking, the principle of art and ἐπιστήμη does not arise from experience immediately but through the intermediate stage of a universal having come to rest in the soul. Other interpreters think this corrective or progressive use of ἤ is impossible, at least in the context.[2]

It turns out that the whole phrase ἢ ἐκ παντὸς is an insertion which does not appear in one half of the stemma, to wit in nΨD, nor in the anonymous commentary which is ascribed to Alexander of Aphrodisias. Thus, the whole discussion about the import of ἤ is just the product of the scribbles of an avid Aristotle reader in late antiquity.[3]

An example of an insertion in the archetype of the extant manuscript tradition can be found in I 33, where all manuscripts read at 89a2–4:

> ὥστε λείπεται δόξαν εἶναι περὶ τὸ ἀληθὲς μὲν **ἢ ψεῦ-**
> **δος**, ἐνδεχόμενον δὲ καὶ ἄλλως ἔχειν. **τοῦτο δ᾽ ἐστὶν ὑπό-**
> **ληψις τῆς ἀμέσου προτάσεως καὶ μὴ ἀναγκαίας**.

This is the conclusion of an argument by elimination that only opinion can have contingent facts for its object. Now opinions which have facts for their objects are true. Moreover, in one of the premises of the argument by elimination, it is stated that opinion is true. Thus, it would be remarkable if here, in the very conclusion of the argument, it were specified that opinion is concerned with what is true *or false*. Also, the elucidation that an opinion is "the cognition/belief of a proposition which is immediate and not necessary" is out of place, especially because Aristotle has just characterised undemonstrative knowledge as "the cognition of an immediate proposition" (88b37) without adding further qualifications.[4] Now if one takes

a look at Themistius' paraphrase of this passage, it is striking that all the elements are present, though ordered differently, except for these very two.[5] Together these two considerations seem enough to warrant their expulsion from the text as early intrusions.

Also for the *Prior Analytics*, it is already possible to identify early intrusions into the extant manuscript tradition which were well on their way to push out the original reading. A well-known example can be found in the formulation of the *de omni* rule at *Prior Analytics* I 1, 24b28–30. Ross (1949) prints the following text: λέγομεν δὲ τὸ κατὰ παντὸς **κατηγορεῖσθαι** ὅταν μηδὲν ᾖ λαβεῖν [**τοῦ ὑποκειμένου**] καθ' οὗ θάτερον οὐ λεχθήσεται, while reporting in the apparatus that the Syriac translations both leave out κατηγορεῖσθαι and that Alexander leaves out τοῦ ὑποκειμένου, thus also indicating that the manuscripts used by him do feature τοῦ ὑποκειμένου. Indeed, at *In Analytica Priora* 24.27–30 (Wallies 1883), Alexander first cites Aristotle's rule and then explicates it: τὸ οὖν κατὰ παντός, φησίν, ἐστίν, ὅταν μηδὲν ᾖ λαβεῖν, καθ' οὗ θάτερον οὐ λεχθήσεται, τοῦτ' ἔστιν, ὅταν μηδὲν ᾖ λαβεῖν τοῦ ὑποκειμένου, καθ' οὗ τὸ κατηγορούμενον οὐ ῥηθήσεται. This clearly establishes that Alexander's manuscript did not read τοῦ ὑποκειμένου and strongly suggests that it was the influence of Alexander's explication of the rule which led to the insertion of τοῦ ὑποκειμένου into the manuscript tradition.[6] However, there is also evidence from the Greek manuscript tradition itself that the phrase was actually inserted, for I have identified two manuscripts whose readings suggest a later insertion: b (Durham C.I.15) features the word order τοῦ ὑποκειμένου λαβεῖν, while n (Ambr.gr. L 093 sup., for this part in a later hand) does not read λαβεῖν. Neither of these readings can be explained palaeographically, and both can be explained as the result of a supralinear τοῦ ὑποκειμένου above λαβεῖν being inserted into the text in a non-standard way. What is more, also the verb κατηγορεῖσθαι might well be an insertion into the text, for not only do the two Syriac translations not have it, it is also missing from Alexander's citation, and there are at least two Greek manuscripts without it: Conv.Soppr. 192 (e) and Vat.gr. 247. Again, there are no palaeographical explanations for its absence (and we can easily do without), while at the same time it is an attractive, almost natural, addition.

A final example of an early intrusion in the *Prior Analytics* can be found at 69b32–6, where Ross prints:

ἔτι δὲ κἂν λόγου δέοιτο πλείονος ἢ διὰ τοῦ μέ-
σου σχήματος, οἷον εἰ μὴ δοίη τὸ Α τῷ Β ὑπάρχειν διὰ
τὸ μὴ ἀκολουθεῖν αὐτῷ τὸ Γ. τοῦτο γὰρ δι' ἄλλων προτά-
σεων δῆλον οὐ δεῖ δὲ **εἰς ἄλλα ἐκτρέπεσθαι** τὴν ἔνστασιν,
ἀλλ' εὐθὺς φανερὰν ἔχειν τὴν ἑτέραν πρότασιν.

b35 εἰς ἄλλα ἐκτρέπεσθαι τὴν ἔνστασιν ABdVGbCcue : τὴν ἔνστασιν nH ΓΨ : τὴν ἔνστασιν εἰς ἄλλα ἐκτρέπεσθαι D Λ ‖ ἐκτρέπεσθαι ABVGbDCcu Λ : τρέπεσθαι de [nH ΓΨ] ‖

From the fact that manuscripts n and H (Athos H 23), as well as the exemplars of the Syriac and Arabic translations (Γ and Ψ), do not feature the phrase εἰς ἄλλα ἐκτρέπεσθαι, and that manuscript D, as well as the exemplar of Boethius' translation, have this phrase after τὴν ἔνστασιν, we can infer that the archetype did not have it either, but that it was inserted already in the fifth century, to judge from Boethius' translation. We can also do without it, as Aristotle would thus be saying that "it is not required that it is the objection, but rather the other proposition, which is immediately clear".[7]

Notes

1 I have identified at least three. There are, first, the Oxford manuscript Barocci 177 and the London manuscript Add Ms 10040, both from the 13th century. These twins are most closely related to D, while being independent from it, sometimes agreeing with n against D. Then there seems to be the manuscript Vind.Phil.gr. 41 (first quarter of the 16th century), which especially shares readings with n, but may well be dependent on it.
2 For an overview of the debate, see Hasper and Yurdin (2014: 122–3, fn. 7)
3 For a discussion, see Crager (2019).
4 For Barnes this already constitutes enough reason to strike the elucidation – see Barnes (1993: 199), ad 89a3.
5 See Themistius, *In APo* 39.30–40.5 (Wallies 1900), especially 40.2–5.
6 For presumably the most recent discussion of the issue, see Chiaradonna and Rashed (2020: 284–5)
7 At a symposium on *Prior Analytics* II 23–7 at the Munich School of Ancient Philosophy in July 2019 Marko Malink argued that the reading without εἰς ἄλλα ἐκτρέπεσθαι actually makes better sense.

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Appendix

A New Edition of the Eighth Book of Aristotle's *Topics*

Pieter Sjoerd Hasper

The following preliminary version of a new text of the eighth book of Aristotle's *Topics* is based on new collations of a much larger set of manuscripts and indirect sources than any previous edition. The manuscripts used are as follows:

A	Vat.Urb.gr. 35	ca. 900	
B	Marc.gr. 201	954	
V	Vat.Barb.gr. 87	X	up to 162b20
G	Guelf.Gud.gr. 24*	XII	
b	Durham C.I.15*	XV	
P	Vat.gr. 207*	XIII	
h	Marc.gr. IV.53*	XIII	
i	New College 225*	XIV	up to 164b1
S	Cath. M 138*	X	163a12 – 163b37
D	Par.gr. 1843	XII	
C	Par.Coisl. 330	XI	
c	Vat.gr. 1024*	ca. 1000	
u	Basil. F.II.21	XII	
e	Laur.Conv.Soppr. 192*	XII	
M	Pierpont Morgan 758	XI	155b31–156b35 and 157a38–b35

where the manuscripts indicated with an asterisk have not been used by Brunschwig in the most recent edition of this book.

In addition, I have used both of the extant old translations:

Λ	Exemplar translationis Boethii[1]	ca. 500	
Ψ	Exemplar translationis arabicae[2]	800?	

while Ross and Brunschwig only take the readings presupposed by Boethius' translation into account. And of course I have carefully checked:

$A^{l/c/p}$ Alexandris lemma/citatio/paraphrasis[3]

The addition of the new sources allowed me to construct a very clear stemma for the extant tradition of manuscripts and translations:

ω
φ   χ
α   β   λ   κ
500   γ   δ   μ   Λ
800   ε   ν   Ψ
       A   B   S
1000   c
                                                      M
1200   G   D   e   u
                P   h
1400   b   i
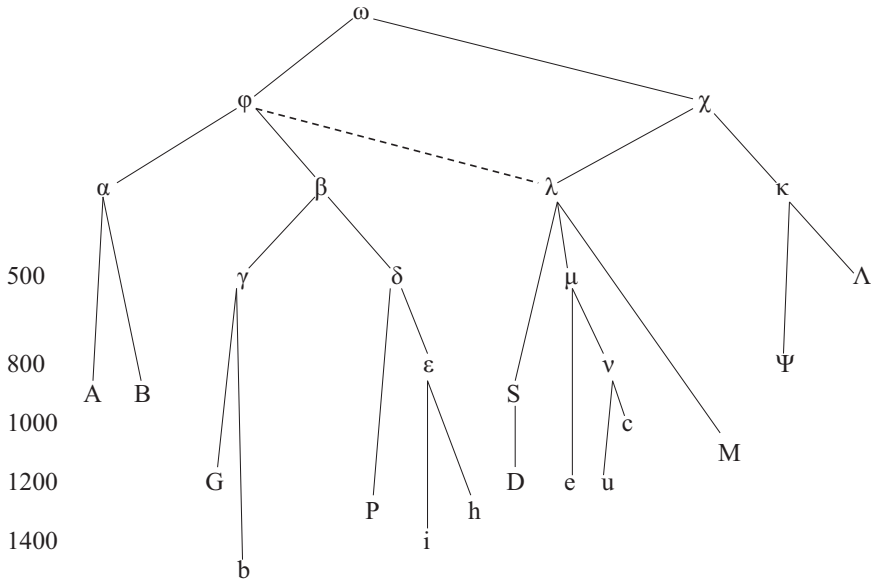
For most of these lines of descent the evidence is very strong, but for some of them it is meagre or less decisive. M shares most of its readings with S (or D, where we do not have S) and cue, but also some with sub-groups of SDcue or with Boethius, but since it only covers a small part of Book 8, we cannot really determine its exact place in the stemma. For most of the *Organon* D is a copy of S, but we also know that D usually, but not always, takes over the corrections in S (some of which seem to be coming from a source related to Λ); thus, if D goes against the other manuscripts of λ (cueM), this may not always be significant. More importantly, it is difficult to assess the stemmatic relations between Λ, Ψ, and λ. There are a few places where ΛΨ alone provide the correct text so that we have to assume that λ has been somewhat contaminated from the other side φ of the stemma, and there are a few places where only ΛΨ have an incorrect reading. On the other hand, Ψ sometimes sides with φ, but sometimes also with λ or a sub-group of λ, so that it may be that the real stemmatic relations differ from the ones postulated here: it might be that χ divides into Ψ, on the one hand, and Λ and λ, on the other (with contamination from λ in Ψ), or it might even be that χ divides into Λ, on the one hand, and Ψ and λ, on the other (with contamination from φ in Λ). In general, the structure of the χ-side of the stemma is somewhat less perspicuous than that of the φ-side.

Manuscripts V and C have not been given a place in the stemma drawn earlier because both are heavily contaminated manuscripts. In the *Sophistical Refutations* and the *Posterior Analytics*, V clearly belongs to the β group, with some contamination from the other side of the stemma. In *Topics* VIII there is evidence for this affiliation as well, but for the most part V has been heavily corrected, probably

from at least two sources, one related to cu or even u alone and one related to Λ. The tradition of manuscript C has been equally promiscuous: originally it seems to stem from the β group, but about half of its readings it shares with λ, and there are also readings in C which we otherwise only find in the α group or in Ψ. Similar patterns of contamination for C we also find in the *Sophistical Refutations*.

The readings which we can glean from Alexander's commentary partly support the φ-side of the stemma and partly the χ-side. Thus, it seems most likely that the manuscript presupposed by Alexander's commentary is completely independent from the extant manuscript tradition. This is confirmed by the occasional passage in the *Topics* as a whole for which Alexander's reading seems better than the whole of the extant manuscript tradition. Thus, we may use Alexander's commentary as an arbitrator to decide if we have to choose between φ and χ.[4]

I have kept the information provided in the critical apparatus minimal, in order not to overburden it with information useless for the main structure of the stemma or for the constitution of the text. In principle I have only noted a deviation from the reading adopted if it is shared by at least two manuscripts, with some exceptions as far as Λ, Ψ, and Alexander are concerned. Occasionally I have even gone so far as to delete reference to a reading attested in a sub-group, especially in Phi and cue, even if it also occurs at the other side of the stemma. All references to second hands have been struck, apart from some striking cases.[5] I have not deleted the few cases in which the Latin manuscript tradition of Boethius' translation shows signs of contamination from the Greek tradition of the *Topics* itself (for the Latin manuscripts, I have taken over the sigla adopted in the *Aristoteles Latinus*). In general I have strived to summarise the evidence with the help of the Greek letters standing for hypothesised common ancestors in the stemma drawn previously. Since V and C commonly either go with the β group or with the λ group, I have in such cases treated them as such.

On the other hand, I have added a second apparatus, listing all the places where the present edition deviates from any of the preceding editions:

B[k]	Bekker	*Aristoteles graece* (Berlin, 1831)
W	Waitz	*Aristotelis* Organon *graece* (Leipzig, 1844)
S[W]	Strache & Wallies	*Aristotelis* Topica *cum libro* De sophisticis elenchis *e schedis Ioannis Strache* (Leipzig, 1923)
R	Ross	*Aristotelis* Topica *et* Sophistici Elenchi (Oxford, 1958)
B	Brunschwig	*Aristote*: Topiques II *Livres V-VIII* (Paris, 2007)

though I have not listed merely orthographical changes (which happen to be quite a few). In this second apparatus, I have also indicated if I hesitate and might be open to changing the text.

I have also provided more information than is usually done as far as Alexander's commentary is concerned: I refer to line numbers in Wallies' edition of the commentary, and in case even the manuscripts for Alexander's commentary are divided, I list the manuscript support for each reading, using the sigla introduced by Wallies.

In case my editorial decisions lead to such deviations from Bekker's text that his line numbering cannot be maintained, I have indicated in the margin which lines disappear or which line becomes longer.

Notes

1 Taken from Minio-Paluello and Dod (1969).
2 Taken from Jabr (1999), translated and occasionally revised (on the basis of Par.ar. 2346) for me by Alexander Lamprakis and, for a few passages, Gerhard Endress.
3 From the edition Wallies (1891). I have been very strict in distinguishing paraphrase from quotation, in principle classifying a quote only as such if there is clear evidence that Alexander is quoting.
4 For a detailed exposition of this account of the manuscript tradition for *Topics* 8, see Hasper and Lamprakis (unpublished).
5 A few of them concern readings which are apparently immediately corrected by the first hand of a manuscript. In such cases, I adopt the convention of referring to the uncorrected reading with x^0 and the immediately corrected reading with x^1.

References

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Jabr, F., ed. 1999. *al-Naṣṣ al-Kāmil li-Manṭiq Arisṭū 2 Kitāb al-Jadal*. Beyrouth: Dār al-Fikr al-Lubnānī.

Minio-Paluello, Lorenzo and Dod, Bernard G., eds. 1969. *Aristoteles Latinus V 1–3 Topica. Translatio Boethii, Fragmentum Recensionis Alterius et Translatio Anonyma*. Leiden: Desclée de Brouwer.

Wallies, Maximilianus, ed. 1891. *Alexandri Aphrodisiensis in Aristotelis topicorum libros octo commentaria*. Commentaria in Aristotelem Graeca II–2. Berlin: Reiger.

155b3 Μετὰ δὲ ταῦτα περὶ τάξεως καὶ πῶς δεῖ ἐρωτᾶν **1**
λεκτέον. δεῖ δὲ πρῶτον μὲν ἐρωτᾶν μέλλοντα τὸν τό-
5 πον εὑρεῖν ὅθεν ἐπιχειρητέον, δεύτερον δὲ ἐρωτηματίσαι καὶ
τάξαι καθ' ἕκαστα πρὸς ἑαυτόν, τὸ δὲ λοιπὸν καὶ τρίτον
εἰπεῖν ἤδη ταῦτα πρὸς ἕτερον. μέχρι μὲν οὖν τοῦ εὑρεῖν τὸν
τόπον ὁμοίως τοῦ φιλοσόφου καὶ τοῦ διαλεκτικοῦ ἡ σκέψις,
τὸ δὲ ἤδη ταῦτα τάττειν καὶ ἐρωτηματίζειν ἴδιον τοῦ διαλε-
10 κτικοῦ· πρὸς ἕτερον γὰρ πᾶν τὸ τοιοῦτον. τῷ δὲ φιλοσόφῳ
καὶ ζητοῦντι καθ' ἑαυτὸν οὐδὲν μέλει, ἐὰν ἀληθῆ μὲν ᾖ καὶ
γνώριμα δι' ὧν ὁ συλλογισμός, μὴ θῇ δὲ αὐτὰ ὁ ἀποκρινό-
μενος διὰ τὸ σύνεγγυς εἶναι τοῦ ἐξ ἀρχῆς καὶ προορᾶν τὸ
συμβησόμενον, ἀλλ' ἴσως ἂν καὶ σπουδάσειεν ὅτι μάλιστα
15 γνώριμα καὶ σύνεγγυς εἶναι τὰ ἀξιώματα· ἐκ τούτων γὰρ
οἱ ἐπιστημονικοὶ συλλογισμοί.

Τοὺς μὲν οὖν τόπους ὅθεν δεῖ λαμβάνειν, εἴρηται πρό-
τερον. περὶ τάξεως δὲ καὶ τοῦ ἐρωτηματίσαι λεκτέον διελόμε-
νον τὰς προτάσεις, ὅσαι ληπτέαι παρὰ τὰς ἀναγκαίας·
20 ἀναγκαῖαι δὲ λέγονται δι' ὧν ὁ συλλογισμὸς γίνεται. αἱ
δὲ παρὰ ταύτας λαμβανόμεναι τέτταρές εἰσιν· ἢ γὰρ ἐπ-
αγωγῆς χάριν τοῦ δοθῆναι τὸ καθόλου, ἢ εἰς ὄγκον τοῦ λόγου,
ἢ πρὸς κρύψιν τοῦ συμπεράσματος, ἢ πρὸς τὸ σαφέστερον
εἶναι τὸν λόγον. παρὰ δὲ ταύτας οὐδεμίαν ληπτέον πρό-
25 τασιν, ἀλλὰ διὰ τούτων αὔξειν καὶ ἐρωτηματίζειν πειρατέον.
εἰσὶ δὲ αἱ πρὸς κρύψιν ἀγῶνος χάριν· ἀλλ' ἐπειδὴ πᾶσα
ἡ τοιαύτη πραγματεία πρὸς ἕτερόν ἐστιν, ἀνάγκη καὶ ταύ-
ταις χρῆσθαι.

Τὰς μὲν οὖν ἀναγκαίας [δι' ὧν ὁ συλλογισμός] οὐκ
30 εὐθὺς προτατέον, ἀλλ' ἀποστατέον ὅτι ἀνωτάτω, οἷον μὴ
τῶν ἐναντίων ἀξιοῦντα τὴν αὐτὴν ἐπιστήμην, ἂν τοῦτο βούληται
λαβεῖν, ἀλλὰ τῶν ἀντικειμένων· τεθέντος γὰρ τούτου καὶ
ὅτι τῶν ἐναντίων ἡ αὐτὴ συλλογιεῖται, ἐπειδὴ τῶν ἀντικειμένων
τὰ ἐναντία. ἐὰν δὲ μὴ τιθῇ, δι' ἐπαγωγῆς ληπτέον προτεί-

155b4 ἐρωτᾶν : ἐρωτηματίζειν edd. | b7 ἤδη ταῦτα R : ταῦτα ἤδη BᵏWSʷB | b14 ἂν καὶ : κἂν
edd. | b22 χάριν BᵏWSʷB : χάριν <καὶ> R | b29 δι' ὧν ὁ συλλογισμός expunxi : hab. edd. |
b30 εὐθὺς Bᵏ : εὐθὺς αὐτὰς WSʷRB | τῶν ἀντικειμένων R : ἀντικείμενα BᵏWSʷB |

155b4 ἐρωτᾶν βχ Aⁱ[520.24]Aᵖ[520.25] : ἐρωτηματίζειν α | b7 ἤδη ταῦτα βχ : ταῦτα ἤδη α | μέλει AVDκu
Aᵖ[521.4] : μέλλει ΒγDCce | b14 ἂν καὶ βχ : κἂν α | b19 ληπτέαι αδλ Aⁱ[521.25]Aᶜ[in AnPr 333.5] :
ληπταί γ | ταύτας αχ Aᵖ[521.25] : ταῦτα β | b24 παρὰ αγχ : περὶ δ | b25 ἀλλὰ ακ Aⁱ[522.23] : ἀλλ' ἢ βλ
Aᵖ[522.17] | b29 δι' ὧν ὁ συλλογισμός ω Aⁱ/ᶜ[523.7-Δ] : om. Aⁱ/ᶜ[523.7-cett.] | b30 εὐθὺς χ Aᶜ[523.7] :
εὐθὺς αὐτὰς φ | προτατέον αχ : προτακτέον β | οἷον αδχ : οἳ γ | b31 ἐπιστήμην : hic incipit denuo codex
Μ | b33 αὐτὴ αχ : αὐτὴ ἐπιστήμη β | τῶν ἀντικειμένων Λλ : ἀντικείμενα φΨ | b34 προτείνοντα αχ :
προτείνοντας β |

νοντα ἐπὶ τῶν κατὰ μέρος ἐναντίων. ἢ γὰρ διὰ συλλογισμοῦ 35
ἢ δι’ ἐπαγωγῆς τὰς ἀναγκαίας ληπτέον, ἢ τὰς μὲν ἐπ-
αγωγῇ τὰς δὲ συλλογισμῷ, ὅσαι δὲ λίαν προφανεῖς εἰσι,
καὶ αὐτὰς προτείνοντα· ἀδηλότερόν τε γὰρ ἀεὶ ἐν τῇ ἀπο-
στάσει καὶ τῇ ἐπαγωγῇ τὸ συμβησόμενον, καὶ ἅμα τὸ 156a
αὐτὰς τὰς χρησίμους προτεῖναι καὶ μὴ δυνάμενον ἐκείνως
λαβεῖν ἕτοιμον. τὰς δὲ παρὰ ταύτας εἰρημένας ληπτέον
μὲν τούτων χάριν, ἑκάστῃ δὲ ὧδε χρηστέον, ἐπάγοντα μὲν
ἀπὸ τῶν καθ’ ἕκαστον ἐπὶ τὸ καθόλου καὶ τῶν γνωρίμων 5
ἐπὶ τὰ ἄγνωστα· γνώριμα δὲ μᾶλλον τὰ κατὰ τὴν αἴσθη-
σιν, ἢ ἁπλῶς ἢ τοῖς πολλοῖς. κρύπτοντα δὲ προσυλλογί-
ζεσθαι δι’ ὧν ὁ συλλογισμὸς τοῦ ἐξ ἀρχῆς μέλλει γίνεσθαι,
καὶ ταῦτα ὡς πλεῖστα. εἴη δ’ ἂν τοῦτο, εἴ τις μὴ μόνον τὰς
ἀναγκαίας ἀλλὰ καὶ τῶν πρὸς ταῦτα χρησίμων τινὰ συλ- 10
λογίζοιτο. ἔτι τὰ συμπεράσματα μὴ λέγειν ἀλλ’ ὕστερον
ἀθρόα συλλογίζεσθαι· οὕτως γὰρ ἂν πορρωτάτω ἀποστήσειε
τῆς ἐξ ἀρχῆς θέσεως. καθόλου δ’ εἰπεῖν οὕτως δεῖ ἐρωτᾶν τὸν
κρυπτικῶς πυνθανόμενον, ὥστ’ ἠρωτημένου τοῦ παντὸς λόγου
καὶ εἰπόντος τὸ συμπέρασμα ζητεῖσθαι τὸ διὰ τί. τοῦτο δὲ 15
ἔσται μάλιστα διὰ τοῦ λεχθέντος ἔμπροσθεν τρόπου· μόνου γὰρ
τοῦ ἐσχάτου ῥηθέντος συμπεράσματος ἄδηλον πῶς συμβαί-
νει, διὰ τὸ μὴ προορᾶν τὸν ἀποκρινόμενον ἐκ τίνων συμβαί-
νει, μὴ διαρθρωθέντων τῶν προτέρων συλλογισμῶν. ἥκιστα
δ’ ἂν διαρθρωθείη ὁ συλλογισμὸς τοῦ συμπεράσματος μὴ τὰ 20
τούτου λήμματα ἡμῶν τιθέντων, ἀλλ’ ἐκεῖνα ὑφ’ ὧν ὁ συλ-
λογισμὸς γίνεται.

Χρήσιμον δὲ καὶ τὸ μὴ συνεχῆ τὰ ἀξιώματα λαμ-
βάνειν ἐξ ὧν οἱ συλλογισμοί, ἀλλ’ ἐναλλὰξ τὸ πρὸς ἕτερον
καὶ ἕτερον συμπέρασμα· τιθεμένων γὰρ τῶν οἰκείων παρ’ 25
ἄλληλα μᾶλλον τὸ συμβησόμενον ἐξ αὐτῶν προφανές.

Χρὴ δὲ καὶ ὁρισμὸν λαμβάνειν, ἐφ’ ὧν ἐνδέχεται,
τὴν καθόλου πρότασιν μὴ ἐπ’ αὐτῶν ἀλλ’ ἐπὶ τῶν συστοί-

156a2 καὶ BᵏWB : om. SᵂR | a5 καὶ BᵏWSᵂB : καὶ ἀπὸ R | a10 ταῦτα WSᵂB : ταύτας BᵏR |
a19 προτέρων R : πρότερον BᵏWSᵂB | a20 διαρθρωθείη : διαρθροῖτο edd. | a27 ὁρισμὸν :
ὁρισμῷ edd. |

b35 ἐπὶ αγχ : ἐκ δ | b38 ἀεὶ φΛλ : om. ΨC | 156a1 τὸ² abκDCM Aᵖ[525.3] : om. δ : τῷ Gμ : τῷ καὶ V | a2
προτεῖναι αδχ Aᵖ[525.3] : ἀποτεῖναι γ | καὶ ω : om. C | ἐκείνως αγχ : ἐκείνας δ | a3 ἕτοιμον βΨλ : ἑτοίμως
αΛ | παρὰ αγχ : περὶ δ | εἰρημένας φΨDCᵥ Aˡ[525.8]Aᵖ[525.11] : εἰλημμένας ΛεΜ | a5 ἕκαστον αVCcM
Aˡ[525.15] : ἕκαστα βDᵤₑ Aᵖ[525.17] [κ] | τὸ αVκCM : τὰ βDμ Aˡ[525.15] | καὶ φλ Aᵖ[525.17-18] : καὶ
ἀπὸ Λ[tr.c.?] | a10 ταῦτα αβλ : ταύτας Λ[tr.c.?] [Ψ] | τινὰ αχ : τινὰς β | συλλογίζοιτο φλ : syllogizaverit
Λ | a12 ἀθρόα αχ Aˡ[526.3]Aᵖ[526.5] : ἀθρόως β | a14 κρυπτικῶς αγρχ : κρυπτῶς ε | a16 ἔμπροσθεν φ
Aˡ[526.19] : πρόσθεν λ | a17 συμπεράσματος αγχ : συμπέρασμα δ | a19 προτέρων βχ : πρότερον α | a20
δ’ ω : γὰρ Aᵖ[527.18] | διαρθρωθείη βλ Aᵖ[527.18] : διαρθροῖτο α | a20-21 τὰ τούτου ακ[vel sine τὰ]
DCeM : τούτου ν : αὐτὰ τὰ βΛ² | a21 τιθέντων αχ Aᵖ[527.19] : τεθέντων β | ὁ φΨ?Μ : om. Dμ | a24 ὧν
αχ : ὧν εἰσὶν β | οἱ συλλογισμοί αγρΧ : ὁ συλλογισμὸς ε | a26 συμβησόμενον φλ Aᵖ[527.29] : συμβαῖνον
Λ [Ψ] | a27 ὁρισμὸν κ Aˡ[527.31]Aᵖ[527.32-DPZEa, cf. A] : ὁρισμῷ φλ Aᵖ[527.32-ΔBh], cf. Aᵖ[527.32-
33: δι’ ὁρισμοῦ] |

χων. παραλογίζονται γὰρ ἑαυτούς, ὅταν ἐπὶ τοῦ συστοίχου λη-
30 φθῇ ὁ ὁρισμός, ὡς οὐ τὸ καθόλου συγχωροῦντες, οἷον εἰ δέοι
λαβεῖν   ὅτι   ὁ   ὀργιζόμενος   ὀρέγεται   τιμωρίας,
ληφθείη   δὲ   ἡ   ὀργὴ   ὄρεξις   εἶναι   τιμωρίας   διὰ
φαινομένην ὀλιγωρίαν· δῆλον γὰρ ὅτι τούτου ληφθέντος ἔχοι-
34 μεν ἂν καθόλου ὃ προαιρούμεθα.

34   Τοῖς δ' ἐπ' αὐτῶν προτείνουσιν

35 πολλάκις ἀνανεύειν συμβαίνει τὸν ἀποκρινόμενον διὰ τὸ
μᾶλλον ἔχειν ἐπ' αὐτοῦ τὴν ἔνστασιν, οἷον ὅτι οὐ πᾶς ὁ ὀργιζό-
μενος ὀρέγεται τιμωρίας· τοῖς γὰρ γονεῦσιν ὀργιζόμεθα μέν,
οὐκ ὀρεγόμεθα δὲ τιμωρίας. ἴσως μὲν οὖν οὐκ ἀληθὴς ἡ ἔν-
στασις· παρ' ἐνίων γὰρ ἱκανὴ τιμωρία τὸ λυπῆσαι μόνον καὶ
156b ποιῆσαι μεταμέλεσθαι· οὐ μὴν ἀλλ' ἔχει τι πιθανὸν πρὸς
τὸ μὴ δοκεῖν ἀλόγως ἀρνεῖσθαι τὸ προτεινόμενον. ἐπὶ δὲ τοῦ
τῆς ὀργῆς ὁρισμοῦ οὐχ ὁμοίως ῥάδιόν εὑρεῖν ἔνστασιν.

Ἔτι τὸ προτείνειν μὴ ὡς δι' αὐτὸ ἀλλ' ἄλλου χάριν
5 προτείνοντα· εὐλαβοῦνται γὰρ τὰ πρὸς τὴν θέσιν χρήσιμα.
ἁπλῶς δὲ εἰπεῖν ὅτι μάλιστα ποιεῖν ἄδηλον πότερον τὸ προ-
τεινόμενον ἢ τὸ ἀντικείμενον βούλεται λαβεῖν· ἀδήλου γὰρ
ὄντος τοῦ πρὸς τὸν λόγον χρησίμου μᾶλλον τὸ δοκοῦν αὐτοῖς
τιθέασιν.

10 Ἔτι διὰ τῆς ὁμοιότητος πυνθάνεσθαι· καὶ γὰρ πιθα-
νὸν καὶ λανθάνει μᾶλλον τὸ καθόλου. οἷον ὅτι ὥσπερ ἐπι-
στήμη καὶ ἄγνοια τῶν ἐναντίων ἡ αὐτή, οὕτως καὶ αἴσθησις
τῶν ἐναντίων ἡ αὐτή· ἢ ἀνάπαλιν, ἐπειδὴ αἴσθησις ἡ αὐτή,
καὶ ἐπιστήμη. τοῦτο δὲ ἐστιν ὅμοιον ἐπαγωγῇ, οὐ μὴν ταὐτόν
15 γε· ἐκεῖ μὲν γὰρ ἀπὸ τῶν καθ' ἕκαστα τὸ καθόλου λαμ-
βάνεται, ἐπὶ δὲ τῶν ὁμοίων οὐκ ἔστι τὸ λαμβανόμενον τὸ
καθόλου ὑφ' ὃ ἅπαντα τὰ ὅμοιά ἐστιν.

a29 τοῦ WSʷRB : om. Bᵏ | a31 τιμωρίας : τιμωρίας διὰ φαινομένην ὀλιγωρίαν edd. | a36-37
οὐ πᾶς ὁ ὀργιζόμενος : ὁ ὀργιζόμενος οὐκ edd. | a38 οὐκ ἀληθὴς BᵏSʷR : οὐχ ἱκανὴ WB |
156b3 ῥάδιόν : ῥάδιόν ἐστιν edd. | b4 τὸ edd. : om. forsan | b8 αὐτοῖς : αὑτοῖς edd. | b17 ὃ
BᵏWSʷR : ᾧ B |

a30 τὸ αδΨλ : τοῦ G : om. bΛ | a31 τιμωρίας Ψλ : τιμωρίας διὰ φαινομένην ὀλιγωρίαν φλ | a32-33
ληφθείη – ὀλιγωρίαν αδλᶜᵉᵗᵗΨλ : om. γλᶜʰ | a33 γὰρ φλΛCνM : om. De | a34 αὐτῶν αχ : αὐτὸν β | a36-37
οὐ πᾶς ὁ .. χ : ὁ .. οὐκ αC : οὐ πᾶς ὁ .. καὶ β | a38 μὲν οὖν αγχ : δὲ δ | a38 οὐκ ἀληθὴς χ Aᵖ[528.7] : οὐχ ἱκανὴ
φ | ἔνστασις αχ : ἔνστασις ὑπάρχει β | a39 μόνον καὶ ποιῆσαι αχ : καὶ μόνον ποιῆσαι γ : καὶ μόνον καὶ
ποιῆσαι δ | 156b1 μεταμέλεσθαι φλDCeM : μεταμελεῖσθαι ν | b3 ῥάδιον χ Aᵖ[528.9] : ῥάδιόν ἐστιν φ |
b4 ἔτι φΨDCμ Aᴵ[528.11] : ἄλλος ἔτι ΛΜ | τὸ προτείνειν αCν Aᴵ[528.11] : δεῖ προτείνειν De : προτείνειν
δεῖ βΛΜ [Ψ] | μὴ ὡς φΛΜ : ὡς οὐ ΨDμ Aᴵ[528.11-aZEΔ]Aᵖ[528.13]? | b6 ἄδηλον
αγχ Aᴵ[528.17-aPE] : ἄδηλα δ Aᴵ[528.17-ABD] | πότερον αΛDCeM Aᴵ[528.17]Aᵖ[529.4] : γὰρ πότερον β
: om. ν | b7 βούλεται αχ Aᵖ[529.4] : οὐ βούλεται β | b8 τὸν λόγον φΨ Aᵖ[528.19, 23: προκείμενον] : τὴν
θέσιν Λλ | αὐτοῖς αχ : ἑαυτοῖς β | b10 διὰ αχ Aᴵ[529.6] : τὸ διὰ β | b11 λανθάνει αVΛ?CμΜ : λανθάνον
βD? | ὅτι βχ : om. α | b12-13 οὕτω – ἡ αὐτή αδχ : om. b | ἢ ἀνάπαλιν οὕτω – ἡ αὐτή G | b12 καὶ φ : καὶ ἡ
λ | b13 ἐπειδὴ φDe : ἐπειδὴ ἡ VCνΜ | ἡ αὐτή² αC : ἡ αὐτή τῶν ἐναντίων βχ | b15 ἕκαστα φε Aᵖ[529.14]
: ἕκαστον VDνΜ [κ] | b16 τὸ² αλ : om. β | b17 ὑφ' αδχ : ἐφ' γ | ὃ βΜ : ᾧ αDμ [κ] |

Δεῖ δὲ καὶ αὐτόν ποτε ἑαυτῷ ἔνστασιν φέρειν· ἀνυπ-
όπτως γὰρ ἔχουσιν οἱ ἀποκρινόμενοι πρὸς τοὺς δοκοῦντας δι-
καίως ἐπιχειρεῖν. χρήσιμον δὲ καὶ τὸ ἐπιλέγειν ὅτι σύνηθες
καὶ λεγόμενον τὸ τοιοῦτον· ὀκνοῦσι γὰρ κινεῖν τὸ εἰωθὸς ἔνστα-   20
σιν μὴ ἔχοντες, ἅμα δὲ καὶ διὰ τὸ χρῆσθαι καὶ αὐτοὶ τοῖς
τοιούτοις φυλάττονται κινεῖν αὐτά. ἔτι τὸ μὴ σπουδάζειν,
κἂν ὅλως χρήσιμον ᾖ· πρὸς γὰρ τοὺς σπουδάζοντας μᾶλλον
ἀντιτείνουσιν. καὶ τὸ ὡς ἐν παραβολῇ προτείνειν· τὸ γὰρ δι'   25
ἄλλο προτεινόμενον καὶ μὴ δι' αὐτὸ χρήσιμον τιθέασι μᾶλ-
λον. ἔτι μὴ αὐτὸ προτείνειν ὃ δεῖ ληφθῆναι, ἀλλ' ᾧ τοῦτο
ἕπεται ἐξ ἀνάγκης· μᾶλλόν τε γὰρ συγχωροῦσι διὰ τὸ μὴ
ὁμοίως ἐκ τούτου φανερὸν εἶναι τὸ συμβησόμενον, καὶ λη-
φθέντος τούτου εἴληπται κἀκεῖνο. καὶ τὸ ἐπ' ἐσχάτῳ ἐρωτᾶν   30
ὃ μάλιστα βούλεται λαβεῖν· μάλιστα γὰρ τὰ πρῶτα ἀνα-
νεύουσι διὰ τὸ τοὺς πλείστους τῶν ἐρωτώντων πρῶτα λέγειν
περὶ ἃ μάλιστα σπουδάζουσιν. πρὸς ἐνίους δὲ πρῶτα τὰ τοι-
αῦτα προτείνειν· οἱ γὰρ δύσκολοι τὰ πρῶτα μάλιστα συγ-
χωροῦσιν, ἂν μὴ παντελῶς φανερὸν ᾖ τὸ συμβησόμενον,   35
ἐπὶ τελευτῆς δὲ δυσκολαίνουσιν. ὁμοίως δὲ καὶ ὅσοι οἴονται
δριμεῖς εἶναι ἐν τῷ ἀποκρίνεσθαι· θέντες γὰρ τὰ πρῶτα
ἐπὶ τέλους τερθρεύονται ὡς οὐ συμβαίνοντος ἐκ τῶν κειμένων·
τιθέασι   δὲ   πιστεύοντες   τῇ   ἕξει   καὶ   ὑπολαμβά-
νοντες οὐδὲν πείσεσθαι. ἔτι τὸ μηκύνειν καὶ παρεμβάλλειν   157a
τὰ μηδὲν χρήσιμα πρὸς τὸν λόγον, καθάπερ οἱ ψευδογρα-
φοῦντες· πολλῶν γὰρ ὄντων ἄδηλον ἐν ὁποίῳ τὸ ψεῦδος. διὸ
καὶ λανθάνουσιν ἐνίοτε οἱ ἐρωτῶντες ἐν παραβύστῳ τιθέν-
τες ἃ καθ' αὑτὰ προτεινόμενα οὐκ ἂν τεθείη.   5

Εἰς μὲν οὖν κρύψιν τοῖς εἰρημένοις χρηστέον, εἰς δὲ κό-
σμον ἐπαγωγῇ καὶ διαιρέσει τῶν συγγενῶν. ἡ μὲν οὖν ἐπ-
αγωγὴ ὁποῖόν τί ἐστι, δῆλον. τὸ δὲ διαιρεῖσθαι τοιοῦτον, οἷον
ὅτι ἐπιστήμη ἐπιστήμης βελτίων ἢ τῷ ἀκριβεστέρα εἶναι ἢ τῷ

10   βελτιόνων, καὶ ὅτι τῶν ἐπιστημῶν αἱ μὲν θεωρητικαὶ αἱ δὲ
      πρακτικαὶ αἱ δὲ ποιητικαί. τῶν γὰρ τοιούτων ἕκαστον συν-
      επικοσμεῖ μὲν τὸν λόγον, οὐκ ἀναγκαῖα δὲ ῥηθῆναι πρὸς τὸ
      συμπέρασμα.

        Εἰς δὲ σαφήνειαν παραδείγματα καὶ παραβολὰς οἰ-
15   στέον, παραδείγματα δὲ οἰκεῖα καὶ ἐξ ὧν ἴσμεν, οἷα Ὅμη-
      ρος, μὴ οἷα Χοιρίλος· οὕτως γὰρ ἂν σαφέστερον εἴη τὸ προ-
      τεινόμενον.

        Χρηστέον δὲ ἐν τῷ διαλέγεσθαι τῷ μὲν συλλογισμῷ   **2**
      πρὸς τοὺς διαλεκτικοὺς μᾶλλον ἢ πρὸς τοὺς πολλούς, τῇ δὲ
20   ἐπαγωγῇ τοὐναντίον πρὸς τοὺς πολλοὺς μᾶλλον· εἴρηται δὲ
      ὑπὲρ τούτων καὶ πρότερον. ἔστι δὲ ἐπ' ἐνίων μὲν ἐπάγοντα
      δυνατὸν ἐρωτῆσαι τὸ καθόλου, ἐπ' ἐνίων δὲ οὐ ῥᾴδιον διὰ τὸ
      μὴ κεῖσθαι ταῖς ὁμοιότησιν ὄνομα πάσαις κοινόν, ἀλλ' ὅταν
      δέῃ τὸ καθόλου λαβεῖν, 'οὕτως ἐπὶ πάντων τῶν τοιούτων' φασί·
25   τοῦτο δὲ διορίσαι τῶν χαλεπωτάτων ἐστίν, ὁποῖα τῶν προφερο-
      μένων τοιαῦτα καὶ ὁποῖα οὔ. καὶ παρὰ τοῦτο πολλάκις ἀλλή-
      λους παρακρούονται κατὰ τοὺς λόγους, οἱ μὲν φάσκοντες ὅμοια
      εἶναι τὰ μὴ ὄντα ὅμοια, οἱ δὲ ἀμφισβητοῦντες τὰ ὅμοια
      μὴ εἶναι ὅμοια. διὸ πειρατέον ἐπὶ πάντων τῶν τοιούτων ὀνομα-
30   τοποιεῖν αὐτόν, ὅπως μήτε τῷ ἀποκρινομένῳ ἐξῇ ἀμφισ-
      βητεῖν ὡς οὐχ ὁμοίως τὸ ἐπιφερόμενον λέγεται, μήτε τῷ
      ἐρωτῶντι συκοφαντεῖν ὡς ὁμοίως λεγομένου, ἐπειδὴ πολλὰ
      τῶν οὐχ ὁμοίως λεγομένων ὁμοίως φαίνεται λέγεσθαι.

        Ὅταν δὲ ἐπάγοντος ἐπὶ πολλῶν μὴ διδῷ τὸ καθόλου,
35   τότε δίκαιον ἀπαιτεῖν ἔνστασιν. μὴ εἰπόντα δ' αὐτὸν ἐπὶ τί-
      νων οὕτως, οὐ δίκαιον ἀπαιτεῖν ἐπὶ τίνων οὐχ οὕτως· δεῖ γὰρ
      ἐπάγοντα πρότερον οὕτως τὴν ἔνστασιν ἀπαιτεῖν. ἀξιωτέον τε
      τὰς ἐνστάσεις μὴ ἐπ' αὐτοῦ τοῦ προτεινομένου φέρειν, ἐὰν μὴ
      ἓν μόνον ᾖ τὸ τοιοῦτον, καθάπερ ἡ δυὰς τῶν ἀρτίων
157b μόνος πρῶτος· δεῖ γὰρ τὸν ἐνιστάμενον ἐφ' ἑτέρου τὴν ἔν-
      στασιν φέρειν, ἢ λέγειν ὅτι τοῦτο μόνον τοιοῦτον. πρὸς δὲ τοὺς
      ἐνισταμένους τῷ καθόλου, μὴ ἐν αὐτῷ δὲ τὴν ἔνστασιν φέρον-

a21 τούτων Bᵏ : τούτου WSʷRB | a25 ἐστίν WSʷRB : om. Bᵏ | a26 ὁποῖα R : ποῖα BᵏWSʷB
| a30 αὐτόν edd. : om. forsan | a37 ἐπάγοντα BᵏWB : ἐπαγαγόντα Wallies SʷR | a39 μόνος :
μόνος ἀριθμὸς edd. |

a10 βελτιόνων αγχ : βέλτιον δ | a14 παραδείγματα αγχ : παραδείγματος δ | a14-15 καὶ παρφολὰς –
παραδείγματα αδχ : om. γ | a15 καὶ ω Aᶜ[533.12-13-ADΔ] : om. Aᶜ[533.12-13-aBPE] | a16 Χοιρίλος αγς
Aᶜ[533.13] : Χειρῖλος Du : Χοίριλλος VδCe : Chaerillus Λ [Ψ] | ἂν αχ : om. β | a21 τούτων χ : τούτου
φΨ²? | ἐπάγοντα αχ Aˡ[533.15] : ἐπαγαγόντα β | a25 διορίσαι φλ : διαιρῆσαι κ? | a26 καὶ ὁποῖα λ : καὶ
ποῖα φ [κ] | a30 αὐτόν φλ Aᵖ[534.8] : om. κ | ἐξῇ αδχ : ἔξη γ | a32 πολλὰ αχ : om. β | a33 φαίνεται αχ :
φαίνεται γ : πέφυκε δ | a35 τίνων φλ : τινων κ | a36 δίκαιον φλΛ : ἀναγκαῖον Ψ | ἀπαιτεῖν Αδχ : ἀπετεῖν
Βγ [G] | τίνων φΨλ : τινων Λ | a37 τε αVκDCe Aˡ[534.23] : δὲ β : om. ν | a38 –μένου : hic denuo incipit
codex M | a39 μόνος C : ἀριθμὸς μόνος βχ : μόνος ἀριθμὸς α [Ψ] | 157b2 πρὸς φΨDCμ : ἄλλος πρὸς
ΛΜ | b3 τῷ αVDCe Aˡ[535.3] : τὸ βΨνΜ [Λ] |

τας ἀλλ᾽ ἐν τῷ ὁμωνύμῳ, οἷον ὅτι ἔχοι ἄν τις τὸ μὴ αὐ-
τοῦ χρῶμα ἢ πόδα ἢ χεῖρα (ἔχοι γὰρ ἂν ὁ ζωγράφος   5
χρῶμα καὶ ὁ μάγειρος πόδα τὸν μὴ αὑτοῦ) – διελόμενον οὖν
ἐπὶ τῶν τοιούτων ἐρωτητέον· λανθανούσης γὰρ τῆς ὁμωνυμίας
εὖ δόξει ἐνστῆναι τῇ προτάσει. ἐὰν δὲ μὴ ἐν τῷ ὁμωνύμῳ
ἀλλ᾽ ἐν αὐτῷ ἐνιστάμενος κωλύῃ τὴν ἐρώτησιν, ἀφαιροῦντα
δεῖ ἐν ᾧ ἡ ἔνστασις προτείνειν τὸ λοιπὸν καθόλου ποιοῦντα,   10
ἕως ἂν λάβῃ τὸ χρήσιμον. οἷον ἐπὶ τῆς λήθης καὶ τοῦ ἐπι-
λελῆσθαι· οὐ γὰρ συγχωροῦσι τὸν ἀποβεβληκότα τὴν ἐπιστήμην
ἐπιλελῆσθαι, διότι μεταπεσόντος τοῦ πράγματος ἀπο-
βέβληκε μὲν τὴν ἐπιστήμην, ἐπιλέλησται δ᾽ οὔ. ῥητέον οὖν, ἀφ-
ελόντα ἐν ᾧ ἡ ἔνστασις, τὸ λοιπόν, οἷον εἰ διαμένοντος τοῦ πράγ-   15
ματος ἀποβέβληκε τὴν ἐπιστήμην, διότι ἐπιλέλησται.
ὁμοίως δὲ καὶ πρὸς τοὺς ἐνισταμένους διότι τῷ μείζονι ἀγαθῷ
μεῖζον ἀντίκειται κακόν· προφέρουσι γὰρ ὅτι τῇ ὑγιείᾳ
ἐλάττονι ὄντι ἀγαθῷ τῆς εὐεξίας μεῖζον κακὸν ἀντίκειται·
τὴν γὰρ νόσον μεῖζον κακὸν εἶναι τῆς καχεξίας. ἀφαιρετέον   20
οὖν καὶ ἐπὶ τούτου ἐν ᾧ ἡ ἔνστασις· ἀφαιρεθέντος γὰρ μᾶλλον
ἂν θείη, οἷον ὅτι τῷ μείζονι ἀγαθῷ μεῖζον κακὸν ἀντίκει-
ται, ἐὰν μὴ συνεπιφέρῃ θάτερον θάτερον, καθάπερ ἡ εὐεξία
τὴν ὑγίειαν. οὐ μόνον δὲ ἐνισταμένου τοῦτο ποιητέον, ἀλλὰ κἂν
ἄνευ ἐνστάσεως ἀρνῆται διὰ τὸ προορᾶν τι τῶν τοιούτων. ἀφ-   25
αιρεθέντος γὰρ ἐν ᾧ ἡ ἔνστασις, ἀναγκασθήσεται τιθέναι διὰ
τὸ μὴ προορᾶν ἐν τῷ λοιπῷ ἐπὶ τίνος οὐχ οὕτως· ἐὰν δὲ μὴ
τιθῇ, ἀπαιτούμενος ἔνστασιν οὐ μὴ ἔχῃ ἀποδοῦναι. εἰσὶ δὲ τοι-
αῦται τῶν προτάσεων αἱ ἐπὶ τὶ μὲν ψευδεῖς ἐπὶ τὶ δ᾽ ἀληθεῖς·
ἐπὶ τούτων γὰρ ἔστιν ἀφελόντα τὸ λοιπὸν ἀληθὲς κατα-   30
λιπεῖν. ἐὰν δὲ ἐπὶ πολλῶν προτείνοντος μὴ φέρῃ ἔνστασιν,
ἀξιωτέον τιθέναι· διαλεκτικὴ γάρ ἐστι πρότασις πρὸς ἣν οὕ-
τως ἐπὶ πολλῶν ἔχουσαν μὴ ἔστιν ἔνστασις.

  Ὅταν δὲ ἐνδέχηται τὸ αὐτὸ ἄνευ τε τοῦ ἀδυνάτου καὶ
διὰ τοῦ ἀδυνάτου συλλογίσασθαι, ἀποδεικνύντι μὲν   35
οὐδὲν διαφέρει οὕτως ἢ ἐκείνως συλλογίσασθαι,

37/38 διαλεγομένῳ δὲ | ἄνευ μὲν τοῦ ἀδυνάτου συλλογισαμένῳ
οὐκ ἔστιν ἀμφισβητεῖν, ὅταν δὲ τὸ ἀδύνατον συλλογίσηται,

158a ἂν μὴ λίαν ᾖ περιφανὲς ψεῦδος ὄν, οὐκ ἀδύνατόν φασιν εἶ-
ναι, ὥστε οὐ γίνεται τοῖς ἐρωτῶσιν ὃ βούλονται.

Δεῖ δὲ προτείνειν ὅσα ἐπὶ πολλῶν μὲν οὕτως ἔχει, ἔν-
στασις δὲ ἢ ὅλως μὴ ἔστιν ἢ μὴ ἐπιπολῆς ᾖ τὸ συνιδεῖν· μὴ
5 δυνάμενοι γὰρ συνορᾶν ἐφ’ ὧν οὐχ οὕτως, ὡς ἀληθὲς ὂν τι-
θέασιν.

Οὐ δεῖ δὲ τὸ συμπέρασμα ἐρώτημα ποιεῖν· εἰ δὲ μή,
ἀνανεύσαντος οὐ δοκεῖ γεγονέναι συλλογισμός. πολλάκις γὰρ
καὶ μὴ ἐρωτῶντος ἀλλ’ ὡς συμβαῖνον ἐπιφέροντος ἀρνοῦνται,
10 καὶ τοῦτο ποιοῦντες οὐ δοκοῦσιν ἐλέγχεσθαι τοῖς μὴ συνορῶσιν
ὅτι συμβαίνει ἐκ τῶν τεθέντων. ὅταν οὖν μηδὲ φήσας συμ-
βαίνειν ἐρωτήσῃ, ὁ δὲ ἀρνηθῇ, παντελῶς οὐ δοκεῖ γεγονέναι
συλλογισμός.

Οὐ δοκεῖ δὲ πᾶν τὸ καθόλου διαλεκτικὴ πρότασις εἶναι,
15 οἷον ‘τί ἐστιν ἄνθρωπος;’ ἢ ‘ποσαχῶς λέγεται τἀγαθόν;’ ἔστι
γὰρ πρότασις διαλεκτικὴ πρὸς ἣν ἔστιν ἀποκρίνασθαι ‘ναί’ ἢ
‘οὔ’· πρὸς δὲ τὰς εἰρημένας οὐκ ἔστιν. διὸ οὐ διαλεκτικά ἐστι τὰ
τοιαῦτα τῶν ἐρωτημάτων, ἐὰν μὴ αὐτὸς διορίσας ἢ διελόμε-
νος εἴπῃ, οἷον ‘ἆρά γε τὸ ἀγαθὸν οὕτως ἢ οὕτως λέγεται;’ πρὸς
20 γὰρ τὰ τοιαῦτα ῥᾳδία ἡ ἀπόκρισις ἢ καταφήσαντι ἢ ἀπο-
φήσαντι. διὸ πειρατέον οὕτω προτείνειν τὰς τοιαύτας τῶν
προτάσεων. ἅμα δὲ καὶ δίκαιον ἴσως παρ’ ἐκείνου ζητεῖν ποσα-
χῶς λέγεται τὸ ἀγαθόν, ὅταν αὐτοῦ διαιρουμένου καὶ προ-
τείνοντος μηδαμῶς συγχωρήσῃ.

25 Ὅστις δ’ ἕνα λόγον πολὺν χρόνον ἐρωτᾷ, κακῶς πυνθά-
νεται. εἰ μὲν γὰρ ἀποκρινομένου τοῦ ἐρωτωμένου τὸ ἐρωτώ-
μενον, δῆλον ὅτι πολλὰ ἐρωτήματα ἐρωτᾷ ἢ πολλάκις
ταὐτά, ὥστε ἢ ἀδολεσχεῖ ἢ οὐκ ἔχει συλλογισμόν (ἐξ ὀλί-
γων γὰρ πᾶς συλλογισμός)· εἰ δὲ μὴ ἀποκρινομένου, ὅτι οὐκ
30 ἐπιτιμᾷ, ἢ ἀφίσταται.

b37-38 δὲ ἄνευ μὲν : δὲ πρὸς ἄλλον οὐ χρηστέον τῷ διὰ τοῦ ἀδυνάτου συλλογισμῷ ἄνευ μὲν
γὰρ edd. | 158a4 ᾖ B : om. BᵏWSʷR | a11 ὅτι WSʷB : ὅ τι BᵏR | a24 συγχωρήσῃ : συγχωρῇ
edd. | a26 τὸ ἐρωτώμενον BᵏWSʷR : om. B |

b36 οὕτως αVC Aᵖ[537.18] : ἢ οὕτως βΛλ [Ψ] | συλλογίσασθαι αλ Aᵖ[537.18] : συλλογίζεσθαι β [κ]
| b37 δὲ βχ : δὲ πρὸς ἄλλον αC | b37-38 οὐ χρηστέον τῷ διὰ τοῦ ἀδυνάτου συλλογισμῷ φΛ : om.
ΨΛ Aᵖ[537.21-25] | b38 ἄνευ φΛλ : om. Ψ | b38 μὲν λ : μὲν γὰρ φλ : om. Ψ | b38 συλλογισαμένῳ
φΨλ : συλλογισαμένου Λ? | b39 συλλογίσηται φΛᴼᵈᵧᶠ : συλλογίσωνται Λᶜᵉᵗᵗ·λ [Ψ] | 158a1 ψεῦδος φλ : τὸ
ψεῦδος Ψ?C [Λ] | a4 ᾖ μὴ αχ : ᾖ β | a4 ἐπιπολῆς ακμ : ἐπὶ πολλῆς βD | a5 ὂν φΨλ : om. Λ | a11 ὅτι φΛλ
Aᵖ[539.6] : ὅ τι Ψ | a12 συμβαίνειν αχ : συμβαῖνον β | a12 ἐρωτήσῃ αλλ Aᵖ[539.6] : ἐρωτήσει β | a16
ἀποκρίνασθαι ΑVδDCе Aᵖ[539.23] : ἀποκρίνεσθαι Βγν [Λ] | a17 οὐ αGδκDCν : οὐδὲ Vbe | a19 οὕτως¹
φΨD : ἢ οὕτως Λμ | ἢ οὕτως φκD : om. μ | a20 τοιαῦτα αλλ : τοιαῦτα τῶν ἐρωτημάτων VβΨ | a24
συγχωρήσῃ Ρκυε Aᵖ[540.13: συγκατάθεται] : συγχωρήσει γεDCc : συγχωρῇ α | a26 τοῦ ἐρωτωμένου
τὸ ἐρωτώμενον αVbδκ Aᵖ[540.23, cf. 540.27-541.1] : τοῦ ἐρωτωμένου De : τὸ ἐρωτώμενον GC : τὸ
ἠρωτημένον ν | a28 ταὐτά δχ Aᵖ[540.24] : ταῦτα αγ | a29 ὅτι αχ Aᵖ[541.1] : ἢ οὐκ β | a30 ἢ ἀφίσταται αχ
: καὶ ἀφίσταται Aⁱ[541.2] : ἠφίσταται γ : ἢ οὐκ ἀφίσταται δ |

3　Ἔστι δὲ ἐπιχειρεῖν τε χαλεπὸν καὶ ὑπέχειν ῥάδιον τὰς
αὐτὰς ὑποθέσεις. ἔστι δὲ τοιαῦτα τά τε φύσει πρῶτα καὶ
τὰ ἔσχατα. τὰ μὲν γὰρ πρῶτα ὅρου δεῖται, τὰ δὲ ἔσχατα
διὰ πολλῶν περαίνεται βουλομένῳ τὸ συνεχὲς λαμβάνειν
ἀπὸ τῶν πρώτων, ἢ σοφισματώδη φαίνεται τὰ ἐπιχειρή-　35
ματα· ἀδύνατον γὰρ ἀποδεῖξαί τι τὸν μὴ ἀρξάμενον ἀπὸ τῶν
οἰκείων ἀρχῶν καὶ συνείραντα μέχρι τῶν ἐσχάτων. ὁρίζε-
σθαι μὲν οὖν οὐκ ἀξιοῦσιν οἱ ἀποκρινόμενοι οὔτ’, ἂν ὁ ἐρωτῶν
ὁρίζηται, προσέχουσιν· μὴ γενομένου δὲ φανεροῦ τί ποτε ἐστὶ τὸ
προκείμενον, οὐ ῥάδιον ἐπιχειρεῖν. μάλιστα δὲ τὸ τοιοῦτον περὶ　158b
τὰς ἀρχὰς συμβαίνει· τὰ μὲν γὰρ ἄλλα διὰ τούτων δεί-
κνυται, ταῦτα δὲ οὐκ ἐνδέχεται δι’ ἑτέρων, ἀλλ’ ἀναγκαῖον
ὁρισμῷ τῶν τοιούτων ἕκαστον γνωρίζειν.

Ἔστι δὲ δυσεπιχείρητα καὶ τὰ λίαν ἐγγὺς τῆς ἀρχῆς·　5
οὐ γὰρ ἐνδέχεται πολλοὺς πρὸς αὐτὰ λόγους πορίσασθαι, ὀλί-
γων ὄντων τῶν ἀνὰ μέσον αὐτοῦ τε καὶ τῆς ἀρχῆς, δι’ ὧν
ἀνάγκη δείκνυσθαι τὰ μετὰ ταῦτα. τῶν δὲ ὅρων δυσεπι-
χειρητότατοι πάντων εἰσὶν ὅσοι κέχρηνται τοιούτοις ὀνόμασιν
ἃ πρῶτον μὲν ἄδηλά ἐστιν εἴτε ἁπλῶς εἴτε πολλαχῶς λέ-　10
γεται, πρὸς δὲ τούτοις μηδὲ γνώριμα πότερον κυρίως ἢ κατὰ
μεταφορὰν ὑπὸ τοῦ ὁρισαμένου λέγεται. διὰ μὲν γὰρ τὸ
ἀσαφῆ εἶναι οὐκ ἔχει ἐπιχειρήματα· διὰ δὲ τὸ ἀγνοεῖσθαι
εἰ παρὰ τὸ κατὰ μεταφορὰν λέγεσθαι τοιαῦτα ἐστίν, οὐκ
ἔχει ἐπιτίμησιν.　15

Ὅλως δὲ πᾶν πρόβλημα, ὅταν ᾖ δυσεπιχείρητον, ἢ
ὅρου δεῖσθαι ὑποληπτέον ἢ τῶν πολλαχῶς ἢ τῶν κατὰ μετα-
φορὰν εἶναι λεγομένων ἢ οὐ πόρρω τῶν ἀρχῶν, διὰ τὸ
μὴ φανερὸν εἶναι πρῶτον ἡμῖν τοῦτ’ αὐτό, κατὰ τίνα ποτὲ
τῶν εἰρημένων τρόπων ἐστὶν ὃ τὴν ἀπορίαν παρέχεται· φανε-　20
ροῦ γὰρ ὄντος τοῦ τρόπου δῆλον ὅτι ἢ ὁρίζεσθαι ἂν δέοι ἢ
διαιρεῖσθαι ἢ τὰς ἀνὰ μέσον προτάσεις πορίζεσθαι· διὰ τού-
των γὰρ δείκνυται τὰ ἔσχατα.

Ἐν πολλαῖς τε τῶν θέσεων μὴ καλῶς ἀποδιδομένου τοῦ
ὁρισμοῦ οὐ ῥάδιον διαλέγεσθαι καὶ ἐπιχειρεῖν, οἷον πότερον　25

a36 τι τὸν : τι edd. | a38 οὐκ : οὔτ’ edd. | οὔτ’ edd. : οὐδ’ forsan | 158b4 ἐνδέχεται edd. :
ἐγχωρεῖ forsan | b7 αὐτοῦ BᵏWSʷB : αὐτῶν R | b9 πάντων edd. : om. forsan | b18 διὰ SʷR :
ἢ διὰ BᵏWB | b24 ἐν πολλαῖς : πολλαῖς edd. |

a31 καὶ ὑπέχειν ῥάδιον φΛλ : om. Ψ | a32 ἔστι αχ : εἰσί β | a35 ἢ αγχ : om. δ | a36 τι τὸν VβΛ : τὸν Ψλ : τι
αC | a38 οὐκ βχ Aᵖ[541.28-aZE] : οὔτ’ α Aᵖ[541.28-P] : οὔτ’ φ Aᵖ[542.1] : οὐδ’ χ | a39 ὁρίζηται αVbPiλ
: ὁρίζεται Gh | γενομένου φDCe : γινομένου v | τί αλ : τοῦ τί β | 158b1 προκείμενον αγΡκ : ἀποκείμενον
ε | b2 δείκνυται φDC : δείκνυνται Vμ | b3 ταῦτα φ : ταύτας λ : ipsa Λ [Ψ] | ἐνδέχεται φ : ἐγχωρεῖ λ [κ] |
b5 ἔστι δὲ φκDCe : ἔτι ν | τῆς αδλ Aᵖ[542.15] : om. γC | b7 αὐτοῦ φλλ : αὐτῶν ΨC | δι’ φΨ : ἐξ Λλ | b9
πάντων αλλ Aˡ[542.21] : οὗτοι πάντων β : om. ΨC Aᵖ[542.24-25] | εἰσὶν ακ : εἰσὶ μάλιστα β : μάλιστά
εἰσιν λ Aˡ[542.21] | b12 ὁρισαμένου φΛCe : ὡρισμένου Dν | b14 εἰ αχ : ἢ β | τοιαῦτά βχ : τοιοῦτο α | b16
ἢ αχ Aˡ[543.11] : ἢ β | b18 διὰ ΨDCν Aᵖ[543.21-22] : ἢ διὰ φΛε | b20 ὃ αχ : τὰ τοιαῦτα ἃ β : τοιοῦτον
ὃ V | b22 πορίζεσθαι ακμ : ὁρίζεσθαι βD | b23 δείκνυται φDC : δείκνυνται μ | b24 ἐν πολλαῖς βκε
Aˡ[544.8] : πολλαῖς αDCν | τε αγχ : δὲ δ |

ἐν ἑνὶ ἐναντίον ἢ πλείω· ὁρισθέντων δὲ τῶν ἐναντίων κατὰ
τρόπον ῥᾴδιον συμβιβάσαι πότερον ἐνδέχεται πλείω τῷ
αὐτῷ εἶναι ἐναντία ἢ οὔ. τὸν αὐτὸν δὲ τρόπον καὶ ἐπὶ τῶν
ἄλλων τῶν ὁρισμοῦ δεομένων. ἔοικε δὲ καὶ ἐν τοῖς μαθή-
30 μασιν ἔνια δι' ὁρισμοῦ ἔλλειψιν οὐ ῥᾳδίως γράφεσθαι, οἷον
ὅτι ἡ παρὰ τὴν πλευρὰν τέμνουσα τὸ ἐπίπεδον ὁμοίως
διαιρεῖ τήν τε γραμμὴν καὶ τὸ χωρίον. τοῦ δὲ ὁρισμοῦ ῥη-
θέντος εὐθέως φανερὸν τὸ λεγόμενον· τὴν γὰρ αὐτὴν ἀντ-
αναίρεσιν ἔχει τὰ χωρία καὶ αἱ γραμμαί· ἔστι δὲ ὁρισμὸς
35 τοῦ αὐτοῦ λόγου οὗτος. ἁπλῶς δὲ τὰ πρῶτα τῶν στοιχείων τι-
θεμένων μὲν τῶν ὁρισμῶν, οἷον τί γραμμὴ καὶ τί κύκλος,
ῥᾷστα δεῖξαι (πλὴν οὐ πολλά γε πρὸς ἕκαστον ἔστι αὐτῶν ἐπι-
χειρεῖν διὰ τὸ μὴ πολλὰ τὰ ἀνὰ μέσον εἶναι)· ἂν δὲ μὴ
τιθῶνται οἱ τῶν ἀρχῶν ὁρισμοί, χαλεπόν, τάχα δὲ ὅλως
159a ἀδύνατον. ὁμοίως δὲ τούτοις καὶ ἐπὶ τῶν κατὰ τοὺς λόγους
ἔχει.

Οὔκουν δεῖ λανθάνειν, ὅταν δυσεπιχείρητος ᾖ ἡ θέσις,
ὅτι πέπονθέ τι τῶν εἰρημένων. ὅταν δὲ ᾖ πρὸς τὸ ἀξίωμα
5 καὶ τὴν πρότασιν μεῖζον ἔργον διαλεγῆναι ἢ τὴν θέσιν, δια-
πορήσειεν ἄν τις πότερον θετέον τὰ τοιαῦτα ἢ οὔ. εἰ γὰρ μὴ
θήσει ἀλλ' ἀξιώσει καὶ πρὸς τοῦτο διαλέγεσθαι, μεῖζον
προστάξει τοῦ ἐν ἀρχῇ κειμένου· εἰ δὲ θήσει, πιστεύσει ἐξ ἧτ-
τον πιστῶν. εἰ μὲν οὖν δεῖ μὴ χαλεπώτερον τὸ πρόβλημα
10 ποιεῖν, θετέον· εἰ δὲ διὰ γνωριμωτέρων συλλογίζεσθαι, οὐ
θετέον. ἢ τῷ μὲν μανθάνοντι οὐ θετέον, ἂν μὴ γνωριμώτερον
ᾖ· τῷ δὲ γυμναζομένῳ θετέον, ἂν ἀληθὲς μόνον φαίνηται.
ὥστε φανερὸν ὅτι οὐχ ὁμοίως ἐρωτῶντί τε καὶ διδάσκοντι
ἀξιωτέον τιθέναι.

15 Πῶς μὲν οὖν ἐρωτηματίζειν καὶ τάττειν δεῖ, σχεδὸν   **4**
ἱκανὰ τὰ εἰρημένα. περὶ δὲ ἀποκρίσεως πρῶτον μὲν διορι-
στέον τί ἐστιν ἔργον τοῦ καλῶς ἀποκρινομένου, καθάπερ τοῦ κα-
λῶς ἐρωτῶντος. ἔστι δὲ τοῦ μὲν ἐρωτῶντος τὸ οὕτως ἐπ-

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b29 τῶν ὁρισμοῦ δεομένων B^{k}WS^{w}R : exp. B | b31 ὅτι WS^{w}RB : καὶ ὅτι B^k | b37 πλὴν –
ἐπιχειρεῖν B^{k}WS^{w}R : exp. B | αὐτῶν : τούτων edd. | 159a5 ἔργον corr. Alexander, edd. : εἶναι ω |

b26-27 κατὰ τρόπον αγΡχ : καὶ τρόπον ε | b27 συμβιβάσαι αVγΡλ : συμβηβάσαι ε | b27-28 πλείω τῷ
αὐτῷ αVΛCce : πλείω τὰ αὐτὰ β : τῷ αὐτῷ πλείω Du A^p[544.26] | b28 δὲ τρόπον αχ : τρόπον β : om.
C | b29 τῶν αγεχ : τοῦ PD [C] | b30 γράφεσθαι ω : ἀπογράφεσθαι A^c[545.5] | οἷον βΛ : οἷον καὶ αλ :
om. Ψ | b31 παρὰ αVγεΛDCv : περὶ Pe | ἐπίπεδον αΨCμ A^c[545.8] : ἐπίπεδον γραμμὴ βΛ[tr.c.?]D, cf.
A^p[545.26] | b35 λόγου αεχ : λόγος γΡ : λόγος πρῶτος A^p[545.19] | b36 ὁρισμῶν αγΡχ : ἀγαθῶν ε | b37
δεῖξαι φΛ$^{MtPü[Bo]}$Ψλ A^p[546.6] : διδάξαι VΛ$^{cett.}$ | b37 αὐτῶν λ A^p[546.8] : τούτων φ [κ] | 159a4 δὲ ᾖ αχ
A^l[546.16]A^c[547.23] : δὲ μὴ ᾖ β | πρὸς βχ A^l[546.16]A^c[547.23] : om. α | a5 ἔργον αΛ A^l[546.17-ABD],
cf. A^{γρ}[547.26] : εἶναι ΨC A^c[547.24] : εἶναι ἔργον δ : εἶναι ἔργον γ : ἔργον εἶναι λ A^l[546.17-aP] | ἢ
φλ : ἢ πρὸς Λ A^p[547.26] [Ψ] | a6 πότερον αχ : ὁπότερον β | εἰ αγκ : εἰ μὲν δλ | a7 θήσει αχ : τιθῇ β | a8
προστάξει αχ : προτάξει β | πιστεύσει αχ A^p[547.1] : πιστεύσειν β | ἐξ ἧττον αχ A^p[547.1] : ἔ/ἐξ ἧς τῶν γ : ἔξει τῶν
δ | a10-11 εἰ δὲ – θετέον φΛDCe : om. ν | a12 φαίνηται αγχ : φανεῖται δ | a13 τε καὶ αΛΛ : ἢ β | a18 ἔστι
δὲ τοῦ μὲν ἐρωτῶντος αVδΛDCμ A^l[547.27] : δὲ τοῦ μὲν ἐρωτῶντος b : om. G | μὲν φΛDCe A^l[547.27]
: ἁπλῶς c : καλῶς u [G] | ἐπαγαγεῖν αλ : ἐπάγειν β A^l[547.27] [Λ] |

αγαγεῖν τὸν λόγον ὥστε ποιῆσαι τὸν ἀποκρινόμενον τὰ ἀδοξό-
τατα λέγειν τῶν διὰ τὴν θέσιν ἀναγκαίων, τοῦ δ' ἀποκρινο- 20
μένου τὸ μὴ δι' αὐτὸν φαίνεσθαι συμβαίνειν τὸ ἀδύνατον
ἢ παράδοξον, ἀλλὰ διὰ τὴν θέσιν· ἑτέρα γὰρ ἴσως ἁμαρ-
τία τὸ θέσθαι πρῶτον ὃ μὴ δεῖ καὶ τὸ θέμενον μὴ φυλάξαι
κατὰ τρόπον.

5   Ἐπεὶ δὲ ἔστιν ἀδιόριστα τοῖς γυμνασίας καὶ πείρας ἕνεκα 25
τοὺς λόγους ποιουμένοις (οὐ γὰρ οἱ αὐτοὶ σκοποὶ τοῖς τε διδάσκου-
σιν ἢ μανθάνουσι καὶ τοῖς ἀγωνιζομένοις, οὐδὲ τούτοις τε καὶ
τοῖς διατρίβουσι μετ' ἀλλήλων σκέψεως χάριν· τῷ μὲν γὰρ
μανθάνοντι θετέον ἀεὶ τὰ δοκοῦντα· καὶ γὰρ οὐδὲ ἐπιχειρεῖ
ψεῦδος οὐδεὶς διδάσκειν· τῶν δ' ἀγωνιζομένων τὸν μὲν ἐρω- 30
τῶντα φαίνεσθαί τι δεῖ ποιεῖν πάντως, τὸν δ' ἀποκρινόμενον
μηδὲν φαίνεσθαι πάσχειν· ἐν δὲ ταῖς διαλεκτικαῖς συνόδοις
τοῖς μὴ ἀγῶνος χάριν ἀλλὰ πείρας καὶ σκέψεως τοὺς λόγους
ποιουμένοις οὐ διήρθρωταί πω τίνος δεῖ στοχάζεσθαι τὸν ἀπο-
κρινόμενον καὶ ποῖα διδόναι καὶ ποῖα μή, πρὸς τὸ καλῶς 35
φυλάττειν τὴν θέσιν)· ἐπεὶ οὖν οὐδὲν ἔχομεν παρα-
δεδομένον ὑπ' ἄλλων, αὐτοί τι πειραθῶμεν εἰπεῖν.

Ἀνάγκη δὴ τὸν ἀποκρινόμενον ὑπέχειν λόγον θέμενον
ἤτοι ἔνδοξον ἢ ἄδοξον θέσιν ἢ μηδετέραν, καὶ ἤτοι ἁπλῶς
ἔνδοξον ἢ ἄδοξον ἢ ὡρισμένως, οἷον τῳδί τινι, ἢ αὑτῷ ἢ ἄλλῳ. 159b
διαφέρει δ' οὐδὲν ὁπωσοῦν ἐνδόξου ἢ ἀδόξου οὔσης· ὁ γὰρ αὐτὸς
τρόπος ἔσται τοῦ καλῶς ἀποκρίνεσθαι καὶ δοῦναι ἢ μὴ δοῦναι
τὸ ἐρωτηθέν. ἀδόξου μὲν οὖν οὔσης τῆς θέσεως ἔνδοξον ἀνάγκη
τὸ συμπέρασμα γίνεσθαι, ἐνδόξου δὲ ἄδοξον· τὸ γὰρ ἀντικεί- 5
μενον ἀεὶ τῇ θέσει ὁ ἐρωτῶν συμπεραίνεται. εἰ δὲ μήτε ἔνδοξον
μήτε ἄδοξον τὸ κείμενον, καὶ τὸ συμπέρασμα ἔσται τοιοῦτον.
ἐπεὶ δ' ὁ καλῶς συλλογιζόμενος ἐξ ἐνδοξοτέρων καὶ γνωριμω-
τέρων τὸ προβληθὲν ἀποδείκνυσι, φανερὸν ὡς ἀδόξου μὲν ὄν-
τος ἁπλῶς τοῦ κειμένου οὐ δοτέον τῷ ἀποκρινομένῳ οὔθ' ἃ μὴ 10

a22 ἢ : ἢ τὸ edd. | a26 τε : om edd. | a27 ἢ edd. : καὶ forsan |
a35 ποῖα¹ SʷR : ὁποῖα BᵏWB | a36 φυλάττειν B : ἢ μὴ καλῶς φυλάττειν BᵏWSʷR | a39 μηδέτεραν : μηδέτερον edd. | 159b3
ἀποκρίνεσθαι BᵏWB : ἀποκρίνασθαι SʷR | b6-7 ἔνδοξον … ἄδοξον : ἄδοξον … ἔνδοξον
edd. | b10 ἃ : ὃ edd. |

a19 ποιῆσαι φλ : ποιεῖν V Aᵖ[547.28] [Λ] | a20 ἀναγκαίων αγΡχ : ἀναγκαῖον ε | a21 αὐτὸν ω : αὑτὸν
Aᵖ[548.9] | a22 ἢ VDCe : ἢ τὸ φν [Λ] | ἴσως αΛΛ : ἴσως ἐστὶ β | a25 καὶ φΨλ : ἢ Λ | a26 τε βχ : om. αC
| a27 ἢ φ : καὶ χ | καὶ¹ βχ : om. α | τε αλ : δὲ β : om. Λ? | a28 διατρίβουσι αχ : διατρίβουσιν ἀεὶ β | a29
θετέον ἀεὶ αχ : ἀεὶ θετέον β | ἐπιχειρεῖ αVbPiλ : ἐπιχειρῇ Gh | a34 πω αχ Aᵖ[549.11, 17] : ὑπὸ β, cf.
Aᵖ[548.22]? | a35 ποῖα¹ λ Aᵖ[549.13] : ὁποῖα φ [Λ] | ποῖα² αVGλ Aᵖ[549.13] : ὁποῖα bδ [Λ] | καλῶς φλΛ
: om. Ψ | a36 φυλάττειν κ Aᵖ[549.13-14] : ἢ μὴ καλῶς φυλάττειν φ : ἢ μὴ φυλάττειν λ | a38 ἀνάγκη αχ
Aˡ[549.16] : ἀναγκαῖον β | a39-b1 θέσιν – ἢ ἄδοξον φλΛ :
om. Ψ | a39 ἢ μηδετέραν VγΛDC : ἢ μηδέτερον Ph Aᵖ[549.20] : om. αμ [Ψ] | 159b1 τῳδί αVΛCv : τῳδε
ἢ β : τῳδέ D Aᵖ[549.23] : τῷ e | ἢ ἄλλῳ φΨΛ Aᵖ[549.24]? : om. Λ | b3 ἀποκρίνεσθαι αγDv Aᵖ[550.8] :
ἀποκρίνασθαι VdCe [Λ] | δοῦναι² λ : διδόναι φ [Λ] | b4 οὖν AVPhλ Aᵖ[550.8] : om. Βγι : γὰρ Λ [Ψ: non
γὰρ] | οὔσης τῆς θέσεως φλ? : τῆς θέσεως οὔσης λ | b6-7 ἔνδοξον … ἄδοξον βχ : ἄδοξον … ἔνδοξον α
| b10 ἃ βΛλ : ὃ αC [Ψ] |

δοκεῖ ἁπλῶς, οὔθ' ἃ δοκεῖ μὲν ἧττον δὲ τοῦ συμπεράσματος. ἀδόξου γὰρ οὔσης τῆς θέσεως ἔνδοξον τὸ συμπέρασμα, ὥστε δεῖ τὰ λαμβανόμενα πάντα ἔνδοξα εἶναι καὶ μᾶλλον ἔνδοξα τοῦ προκειμένου, εἰ μέλλει διὰ τῶν γνωριμωτέρων τὸ
15 ἧττον γνώριμον περαίνεσθαι. ὥστ' εἴ τι μὴ τοιοῦτόν ἐστι τῶν
16 ἐρωτωμένων, οὐ θετέον τῷ ἀποκρινομένῳ.
16   Εἰ δὲ ἔνδοξος ἁπλῶς
ἡ θέσις, δῆλον ὅτι τὸ συμπέρασμα ἄδοξον. θετέον
οὖν τά τε δοκοῦντα πάντα καὶ τῶν μὴ δοκούντων ὅσα ἧττόν
ἐστιν ἄδοξα τοῦ συμπεράσματος· ἱκανῶς γὰρ ἂν δόξειεν δι-
20 ειλέχθαι. ὁμοίως δέ, καὶ εἰ μήτε ἄδοξος μήτε ἔνδοξός ἐστιν ἡ θέ-
σις· καὶ γὰρ οὕτως τά τε φαινόμενα πάντα δοτέον καὶ
τῶν μὴ δοκούντων ὅσα μᾶλλον ἔνδοξα τοῦ συμπεράσματος·
οὕτω γὰρ ἐνδοξοτέρους συμβήσεται τοὺς λόγους γίνεσθαι. εἰ
μὲν οὖν ἁπλῶς ἔνδοξον ἢ ἄδοξον τὸ κείμενον, πρὸς τὰ δο-
25 κοῦντα ἁπλῶς τὴν σύγκρισιν ποιητέον. εἰ δὲ μὴ ἁπλῶς ἔν-
δοξον ἢ ἄδοξον τὸ κείμενον ἀλλὰ τῷ ἀποκρινομένῳ, πρὸς
αὐτὸν τὸ δοκοῦν κρίνοντα θετέον ἢ οὐ θετέον. ἂν
δ' ἑτέρου δόξαν διαφυλάττῃ ὁ ἀποκρινόμενος, δῆλον ὅτι πρὸς
τὴν ἐκείνου διάνοιαν ἀποβλέποντα θετέον ἕκαστα καὶ ἀρνητέον.
30 διὸ καὶ οἱ κομίζοντες ἀλλοτρίας δόξας, οἷον ἀγαθὸν καὶ
κακὸν εἶναι ταὐτόν, καθάπερ Ἡράκλειτός φησιν, οὐ διδόασι
μὴ παρεῖναι ἅμα τῷ αὐτῷ τἀναντία, οὐχ ὡς οὐ δοκοῦν αὐ-
τοῖς τοῦτο, ἀλλ' ὅτι καθ' Ἡράκλειτον οὕτως λεκτέον. ποιοῦσι
δὲ τοῦτο καὶ οἱ παρ' ἀλλήλων δεχόμενοι τὰς θέσεις· στοχά-
35 ζονται γὰρ ὡς ἂν εἴπῃ ὁ θέμενος.

Φανερὸν οὖν τίνων στοχαστέον τῷ ἀποκρινομένῳ, εἴτε ἁπ-   **6**
λῶς ἔνδοξον εἴτε τινὶ τὸ κείμενόν ἐστιν. ἐπεὶ δ' ἀνάγκη πᾶν
τὸ ἐρωτώμενον ἢ ἔνδοξον ἢ ἄδοξον ἢ μηδέτερον, καὶ
πρὸς   τὸν   λόγον   ἢ   μὴ   πρὸς   τὸν   λόγον   εἶναι,

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b11 ἃ : ὃ edd. | b12 ἀδόξου : δοκεῖ ἀδόξου edd. | b13 πάντα ἔνδοξα : ἔνδοξα πάντ' edd. : ἔνδοξα forsan | b17 ἄδοξον : ἄδοξον ἁπλῶς edd. | b20 καὶ : om. edd. | b27 αὐτὸν B^{k}WB : αὐτὸν S^{w}R | δοκοῦν : δοκοῦν καὶ τὸ μὴ δοκοῦν S^{w}RWB : καὶ δοκουν μὴ δοκοῦν B^k | b35 εἴπῃ : εἴπειεν edd. | b38 ἔνδοξον : ἔνδοξον εἶναι edd. | b39 πρὸς^1 : ἢ πρὸς edd. | εἶναι : εἶναι τὸ ἐρωτώμενον edd. |

b11 δοκεῖ BVGhλ : δοκῇ AbP | ἃ Λλ : ὃ φ [Ψ] | δὲ αγPχ : μὲν ε | b12 ἀδόξου κ : δοκεῖ ἀδόξου φλ | b13 πάντα ἔνδοξα βχ : ἔνδοξα πάντ' α | b14 προκειμένου φ A^p[550.28] : κειμένου χ | b15 τι αχ : om. β | b15-16 τῶν ἐρωτωμένων αγχ : τὸ ἠρωτημένον δ | b16 ἔνδοξος αχ : ἔνδοξος ἐστιν β | b17 ἄδοξον χ : ἄδοξον ἁπλῶς φ / ἄδοξον αδχ : ἄδοξον ἐν ἄλλῳ δοτέον γ | b18 τε φVDC : om. μ | b19 δόξειε φDCe A^l[551.16] A^c[551.17] : δόξῃ Λν | b20 καὶ βχ : om. α | ἄδοξος .. ἔνδοξός φλ A^l[551.23] : ἔνδοξός .. ἄδοξος κ A^p[551.24] | b24 οὖν φΛDCe : om. ν | b25 σύγκρισιν φλ A^p[552.8] : ἀπόκρισιν κ | b26 αὐτὸν αC?κυε A^p[552.17-18] : αὐτὸν VγDc : ταὐτὸν δ | b27 δοκοῦν AΨC A^p[552.16-17] : δοκοῦν καὶ τὸ μὴ δοκοῦν BV[καὶ τὸ]β[ῆ]Λ[καὶ τὸ?]λ | b28 ἑτέρου φΛ^{cett}ΨCμ A^p[552.20-BD] : ἑτέραν Λ^{BoChYfOt}D A^p[552.20-AP] | b32 οὐ φκDC A^p[552.24] : om. μ | b34 οἱ παρὰ αδχ A^p[552.26] : ὕπερ γ | ἀλλήλων φλ A^p[552.26] : ἄλλων κ | b35 εἴπῃ βΛDe : εἴποι Vν : εἴπειεν A^1? : εἴποιεν A^{2}B | b36 τίνων αδΛλ A^p[553.4, 9] : om. γ | b37 τὸ αΛ?λ A^p[553.5] : om. β | b38 ἔνδοξον : ἔνδοξον εἶναι αδDC A^l[553.6-ABDaP] : ἔνδοξον ἐστιν γ : hab., sed εἶναι post ἄδοξον Λμ A^l[553.6-Δ] | b39 πρὸς^1 βΛλ : ἢ πρὸς αΨ, cf. A^p[553.17] | εἶναι κ : εἶναι τὸ ἐρωτώμενον φλ A^p[553.18]? |

ἐὰν μὲν οὖν ᾖ δοκοῦν καὶ μὴ πρὸς τὸν λόγον, δοτέον φήσαντα   160a
δοκεῖν, ἐὰν δὲ μὴ δοκοῦν καὶ μὴ πρὸς τὸν λόγον, δοτέον μέν,
ἐπισημαντέον δὲ τὸ μὴ δοκοῦν, πρὸς εὐλάβειαν εὐηθείας. ὄν-
τος δὲ πρὸς τὸν λόγον καὶ δοκοῦντος λεκτέον ὅτι δοκεῖ μέν,
ἀλλὰ λίαν σύνεγγυς τοῦ ἐν ἀρχῇ ἐστι καὶ ἀναιρεῖται τούτου   5
τεθέντος τὸ κείμενον. εἰ δὲ πρὸς τὸν λόγον, λίαν δ᾽ ἄδοξον
τὸ ἀξίωμα, συμβαίνειν μὲν φατέον τούτου τεθέντος, ἀλλὰ
λίαν εὔηθες εἶναι τὸ προτεινόμενον. εἰ δὲ μήτε ἄδοξον μήτε
ἔνδοξον, εἰ μὲν μηδὲν πρὸς τὸν λόγον, δοτέον μηδὲν διορί-
σαντι, εἰ δὲ πρὸς τὸν λόγον, ἐπισημαντέον ὅτι ἀναιρεῖται   10
τεθέντος τὸ ἐν ἀρχῇ. οὕτως γὰρ ὅ τε ἀποκρινόμενος οὐδὲν δό-
ξει δι᾽ αὑτὸν πάσχειν, ἐὰν προορῶν ἕκαστα τιθῇ, ὅ τε ἐρω-
τῶν τεύξεται συλλογισμοῦ τιθεμένων αὐτῷ πάντων τῶν ἐνδοξο-
τέρων τοῦ συμπεράσματος. ὅσοι δὲ ἐξ ἀδοξοτέρων τοῦ συμ-
περάσματος ἐπιχειροῦσι συλλογίζεσθαι, δῆλον ὡς οὐ καλῶς   15
συλλογίζονται· διὸ τοῖς ἐρωτῶσιν οὐ θετέον.

7   Ὁμοίως δὲ καὶ ἐπὶ τῶν ἀσαφῶς καὶ πλεοναχῶς λε-
γομένων ἀπαντητέον. ἐπεὶ γὰρ δέδοται τῷ ἀποκρινομένῳ
μὴ μανθάνοντι εἰπεῖν ὅτι ‘οὐ μανθάνω’, καὶ πλεοναχῶς λε-
γομένου μὴ ἐξ ἀνάγκης ὁμολογῆσαι ἢ ἀρνήσασθαι, δῆλον   20
ὡς πρῶτον μέν, ἂν μὴ σαφὲς ᾖ τὸ ῥηθέν, οὐκ ἀποκνητέον
τὸ φάναι μὴ συνιέναι· πολλάκις γὰρ ἐκ τοῦ μὴ σαφῶς
ἐρωτηθέντας διδόναι ἀπαντᾷ τι δυσχερές. ἐὰν δὲ γνώριμον
μὲν ᾖ πλεοναχῶς δὲ λεγόμενον, ἐὰν μὲν ἐπὶ πάντων ἀλη-
θὲς ἢ ψεῦδος ᾖ τὸ λεγόμενον, δοτέον ἁπλῶς ἢ ἀρνητέον,   25
ἐὰν δὲ ἐπὶ τὶ μὲν ψεῦδος ᾖ ἐπὶ τὶ δὲ ἀληθές, ἐπισημαν-
τέον ὅτι πλεοναχῶς λέγεται καὶ διότι τὸ μὲν ψεῦδος τὸ
δ᾽ ἀληθές· ὕστερον γὰρ διαιρουμένου ἄδηλον εἰ καὶ ἐν ἀρχῇ
συνεώρα τὸ ἀμφίβολον. ἐὰν δὲ μὴ προίδη τὸ ἀμφίβολον
ἀλλ᾽ εἰς θάτερον βλέψας θῇ, ῥητέον πρὸς τὸν ἐπὶ θάτερον   30
ἄγοντα ὅτι ‘οὐκ εἰς τοῦτο βλέπων ἔδωκα ἀλλ᾽ εἰς θάτερον αὐ-

160a1 οὖν : om. edd. | a3 δοκοῦν BᵏWB : δοκεῖν Wallies SʷR | a16 ἐρωτῶσιν edd. : οὕτως
ἐρωτῶσιν forsan | a27 διότι BᵏWSʷB : ὅτι R |

160a1 οὖν Bβ : om. ΑΛλ | a1-2 δοτέον – τὸν λόγον αγΡΛλ Αᵖ[553.27-554.1] : om. ε | a2 δοκεῖν αΛλ
Αᵖ[554.1-3] : ὅτι δοκεῖ οὐ γὰρ ἀναιρεῖται τεθέντος τοῦ ἐν ἀρχῇ γΡ [ε] | a6 λόγον φΨΛ : λόγον μὲν Λ
| a7 ἀξίωμα αγχ : κείμενον δ | συμβαίνειν Βδχ : συμβαίνει Αγ | φατέον αδΛΨ²λ Αᵖ[554.15] : ἀφετέον
Ψ¹? : θετέον γ | ἀλλὰ φΛλ : ἀλλ᾽ ἢ Ψ | a8-9 ἄδοξον .. ἔνδοξον αΛᶜᵉᵗᵗΨλ : ἔνδοξον .. ἄδοξον βΛᴹˣᴮᵒ
Αᵖ[554.17] | a9 διορίσαντι αΛλ : ὁρίσαντι β | a12 αὑτὸν Vβce : αὐτὸν ακDCu : αὑτὸν Αᵖ[554.23] |
πάσχειν φΛ : παύειν Ψ? | ἐὰν φΛ : ἐάνπερ λ | a13 συλλογισμοῦ αΛλ : συλλογισμὸν β | a16 ἐρωτῶσιν
αDv : οὕτως ἐρωτῶσιν βΛΨ[interrogati]?e cf. Αᵖ[555.4] : ἐρωτῶσιν οὕτως V | a17 ἀσαφῶς φΛλ
Αᴵ[555.8]Αᵖ[555.10] : ἀσαφῶν Α⁰Ψ? | a18 γὰρ φλ Αᵖ[555.16] : δὲ κ | ἀποκρινομένῳ αδχ Αᵖ[555.16] :
συγκρινομένῳ γ | a19 καὶ .. λεγομένου αλλ Αᵖ[555.17] : καὶ τῶν .. λεγομένων β | a23 ἐρωτηθέντας αλ
: ἐρωτηθέντα βΨ? : interrogantibus Λ[tr.c.?] | a24 μὲν αVγΛDCμ : om. δ | ᾖ αΛλ : ᾖ τὸ β | δὲ αΛᶜᵉᵗᵗλ
Αᵖ[555.26] : om. βΛ⁰ᵈ | a27 διότι αλ : ὅτι β : propter hoc Λ : διὰ Αᵖ[556.6]? [Ψ] | a29 προίδη αγΛCμ
: προειδῇ δΨ?D Αᵖ[556.12, 14] | a30 εἰς αγΡχ : ἐν δ | βλέψας θῇ VδΛDv Αᵖ[556.15] : βλέψας βιασθῇ
ἢ μή γ : θῇ ἢ μή αε : βιασθῇ C : inclinatus Ψ | θῇ ῥητέον φΛλ : θεωρητέον Ψ | a31 ἔδωκα αVγΛC :
ἔδωκεν δΨ?λ, cf. Αᵖ[556.16] |

τῶν· πλειόνων γὰρ ὄντων τῶν ὑπὸ ταὐτὸν ὄνομα ἢ λόγον
ῥᾳδία ἡ ἀμφισβήτησις. ἐὰν δὲ καὶ σαφὲς ᾖ καὶ ἁπλοῦν
τὸ ἐρωτώμενον, ἢ 'ναί' ἢ 'οὔ' ἀποκριτέον.

35   Ἐπεὶ δὲ πᾶσα πρότασις συλλογιστικὴ ἢ τούτων τίς ἐστιν   **8**
ἐξ ὧν ὁ συλλογισμὸς ἢ τινος τούτων ἕνεκα (δῆλον δ' ὅταν
ἑτέρου χάριν λαμβάνηται τῷ πλείω τὰ ὅμοια ἐρωτᾶν· ἢ γὰρ
δι' ἐπαγωγῆς ἢ δι' ὁμοιότητος ὡς ἐπὶ τὸ πολὺ τὸ καθόλου
λαμβάνουσιν), τὰ μὲν οὖν καθ' ἕκαστα πάντα θετέον, ἂν ᾖ

160b   ἀληθῆ καὶ ἔνδοξα, πρὸς δὲ τὸ καθόλου πειρατέον ἔνστασιν
φέρειν· τὸ γὰρ ἄνευ ἐνστάσεως ἢ οὔσης ἢ δοκούσης κωλύειν
τὸν λόγον δυσκολαίνειν ἐστίν. εἰ οὖν ἐπὶ πολλῶν φαινομένου
μὴ δίδωσι τὸ καθόλου, μὴ ἔχων ἔνστασιν, φανερὸν ὅτι δυσ-

5   κολαίνει. ἔτι δὲ εἰ μηδ' ἀντεπιχειρεῖν ἔχει ὅτι οὐκ ἀληθές,
μᾶλλον ἂν δόξειε δυσκολαίνειν. (καίτοι οὐδὲ τοῦθ' ἱκα-
νόν· πολλοὺς γὰρ λόγους ἔχομεν ἐναντίους ταῖς δόξαις, οὓς
χαλεπὸν λύειν, καθάπερ τὸν Ζήνωνος ὅτι οὐκ ἐνδέχεται κινεῖσθαι
οὐδὲ τὸ στάδιον διελθεῖν, ἀλλ' οὐ διὰ τοῦτο τὰ ἀντικείμενα τούτοις

10   οὐ θετέον.) εἰ οὖν μήτε ἀντεπιχειρεῖν ἔχων μήτε ἐνίστασθαι μὴ
τίθησι, δῆλον ὅτι δυσκολαίνει· ἔστι γὰρ ἡ ἐν λόγοις δυσκο-
λία ἀπόκρισις παρὰ τοὺς εἰρημένους τρόπους, συλλογισμοῦ
φθαρτική.

Ὑπέχειν δὲ καὶ θέσιν καὶ ὁρισμὸν αὐτὸν αὑτῷ δεῖ   **9**
15   προεπιχειρήσαντα· ἐξ ὧν γὰρ ἀναιροῦσιν οἱ πυνθανόμενοι τὸ
κείμενον, δῆλον ὅτι τούτοις ἐναντιωτέον.

Ἄδοξον δ' ὑπόθεσιν εὐλαβητέον ὑπέχειν. εἴη δ' ἂν
ἄδοξος διχῶς· καὶ γὰρ ἐξ ἧς ἄτοπα συμβαίνει λέγειν,
οἷον εἰ πάντα φαίη τις κινεῖσθαι ἢ μηδέν, καὶ ὅσα χείρο-
20   νος ἤθους ἑλέσθαι καὶ ὑπεναντία ταῖς βουλήσεσιν, οἷον ὅτι ἡ ἡδονὴ
ἀγαθόν, καὶ τὸ ἀδικεῖν βέλτιον τοῦ ἀδικεῖσθαι· οὐ γὰρ ὡς λό-
γου χάριν ὑπέχοντα ἀλλ' ὡς τὰ δοκοῦντα λέγοντα μισοῦσιν.

Ὅσοι δὲ τῶν λόγων ψεῦδος συλλογίζονται, λυτέον   **10**
ἀναιροῦντα παρ' ὃ γίνεται τὸ ψεῦδος· οὐ γὰρ ὁ ὁτιοῦν ἀνελὼν

160b5 ἔτι δὲ : ἔτι edd. | ἀληθές : ἀληθές πολλῷ edd. | b10 ἀντεπιχειρεῖν ἔχων ... ἐνίστασθαι
R : ἐνίστασθαι ... ἀντεπιχειρεῖν ἔχων Bᵏ : ἔνστασιν .. ἀντεπιχειρεῖν ἔχων WSʷB | b15
προεπιχειρήσαντα SʷRB : προεγχειρήσαντα BᵏW | b20 ἡ ἡδονὴ : ἡδονὴ edd. | b21 ἀγαθὸν :
τἀγαθόν edd. |

a32 ὄντων αγΛΛ Aᵖ[556.18] : om. δ | a34 ἢ ναί αδΛΛ Aᵖ[556.21] : εἶναι γ | a36 δ' αγγ : om. δ | | a39-160b1
λαμβάνουσιν – καθόλου αγΡχ Aᵖ[557.24-25] : om. ε | b2 ᾖ² αγΡχ Aᵖ[557.32] : ἢ οὐ | b4 μὴ ἔχων ἔνστασιν
φΛΛ : om. Ψ | μὴ φ : οὐ VDe : om. ν [Λ: *non*] [Ψ] | ἔχων αχ : ἔχειν β [Ψ] | b5 ἔτι δὲ βχ : ἔτι α | ἔχει φ : ἔχοι
χ | b6 μᾶλλον Ψμ Aᵖ[558.23-24] : πολλῷ μᾶλλον φΛDC | b7 ἔχομεν ἐναντίους φΛ : ἐναντίους ἔχομεν λ |
b8 λύειν αχ Aᵖ[558.25] : κωλύειν β | b10 ἀντεπιχειρεῖν ἔχων .. ἐνίστασθαι χ : ἐνίστασθαι .. ἀντεπιχειρεῖν
ἔχων Aᵖ[559.3-4] : ἔνστασιν .. ἀντεπιχειρεῖν ἔχων φ | μὴ φ Aᵖ[559.4] : οὐ λ | b14 αὑτῷ φκCe : αὐτῷ ν | b15
προεπιχειρήσαντα Bβ Aᵖ[559.14] : προεγχειρήσαντα Αλ : ἐπι/ἐγχειρήσαντα Λ [Ψ: προ-] | 17-18 εἴη δ' ἂν
ἄδοξος φΛΛ : om. Ψ | b18 ἄδοξος αχ Aᵖ[559.22] : ἄδοξον β | διχῶς αVδΨ Aᵖ[559.22] : πλεοναχῶς γΛΛ |
b20 ἡ ἡδονὴ βχ : ἡδονὴ α | b21 ἀγαθὸν χ : τἀγαθόν αV : τίς ἀγαθὸν γ : τινὸς ἀγαθὸν δ | βέλτιον φλ : post
ἀδικεῖσθαι Λ | b22 ὑπέχοντα βκDe Aᵖ[560.7-8]? : ὑπεχόμενον αCν | μισοῦσιν αχ Aᵖ[560.9] : μισησοῦσιν
β | b24 ψεῦδος αδχ : ψεῦδος ἢ τὸ τὴν ψευδῆ πρότασις γ | ὁ αΛΛ : om. β | ἀνελὼν φΛμ : ἀναιρῶν VD |

λέλυκεν, οὐδ’ εἰ ψεῦδός ἐστι τὸ ἀναιρούμενον. ἔχοι γὰρ ἂν   25
πλείω ψευδῆ ὁ λόγος, οἷον ἐάν τις λάβῃ τὸν καθήμενον
γράφειν, Σωκράτη δὲ καθῆσθαι· συμβαίνει γὰρ ἐκ τούτων
Σωκράτη γράφειν. ἀναιρεθέντος οὖν τοῦ Σωκράτη καθῆσθαι
οὐδὲν μᾶλλον λέλυται ὁ λόγος· καίτοι ψεῦδος τὸ ἀξίωμα.
ἀλλ’ οὐ παρὰ τοῦτο ὁ λόγος ψευδής· ἂν γάρ τις τύχῃ καθ-   30
ήμενος μὲν μὴ γράφων δέ, οὐκέτι ἐπὶ τοῦ αὐτοῦ ἡ αὐτὴ λύ-
σις ἁρμόσει. ὥστε οὐ τοῦτο ἀναιρετέον, ἀλλὰ τὸ τὸν καθήμε-
νον γράφειν· οὐ γὰρ πᾶς ὁ καθήμενος γράφει. λέλυκε μὲν
οὖν πάντως ὁ ἀνελὼν παρ’ ὃ γίνεται τὸ ψεῦδος, οἶδε δὲ τὴν
λύσιν ὁ εἰδὼς ὅτι παρὰ τοῦτο ὁ λόγος, καθάπερ ἐπὶ τῶν   35
ψευδογραφουμένων. οὐ γὰρ ἀπόχρη τὸ ἐνστῆναι, οὐδ’ ἂν ψεῦ-
δος ᾖ τὸ ἀναιρούμενον, ἀλλὰ καὶ διὰ τί ψεῦδος ἀποδεικτέον·
οὕτως γὰρ ἂν εἴη φανερὸν πότερον προορῶν τι ἢ οὒ ποιεῖται
τὴν ἔνστασιν.

    Ἔστι δὲ λόγον κωλῦσαι συμπεράνασθαι τετραχῶς. ἢ   161a
γὰρ ἀνελόντα παρ’ ὃ γίνεται τὸ ψεῦδος, ἢ πρὸς τὸν ἐρω-
τῶντα ἔνστασιν εἰπόντα· πολλάκις γὰρ οὐδὲ λέλυκεν, ὁ μέν-
τοι πυνθανόμενος οὐ δύναται πορρωτέρω προσάγειν. τρίτον δὲ
πρὸς τὰ ἠρωτημένα· συμβαίη γὰρ ἂν ἐκ μὲν τῶν ἠρωτημέ-   5
νων μὴ γίνεσθαι ὃ βούλεται διὰ τὸ κακῶς ἠρωτῆσθαι, προσ-
τεθέντος δέ τινος γίνεσθαι τὸ συμπέρασμα. εἰ μὲν οὖν μη-
κέτι δύναται προσάγειν ὁ ἐρωτῶν, εἰς τὸν ἐρωτῶντα εἴη ἂν
ἡ ἔνστασις, εἰ δὲ δύναται, πρὸς τὰ ἠρωτημένα. τετάρτη δὲ
καὶ χειρίστη τῶν ἐνστάσεων ἡ πρὸς τὸν χρόνον· ἔνιοι γὰρ τοι-   10
αῦτα ἐνίστανται πρὸς ἃ διαλεχθῆναι πλείονός ἐστι χρόνου ἢ
τῆς παρούσης διατριβῆς.

    Αἱ μὲν οὖν ἐνστάσεις, καθάπερ εἴπομεν, τετραχῶς γί-
νονται· λύσις δὲ ἐστὶ τῶν εἰρημένων ἡ πρώτη μόνον, αἱ δὲ
λοιπαὶ κωλύσεις τινὲς καὶ ἐμποδισμοὶ τῶν συμπερασμάτων.   15

11   Ἐπιτίμησις δὲ λόγου κατ’ αὐτόν τε τὸν λόγον καὶ
ὅταν ἐρωτᾶται οὐχ ἡ αὐτή. πολλάκις γὰρ τοῦ μὴ καλῶς

b26 ψευδῆ : ψεύδη edd. | ἐάν .. λάβῃ edd. : εἰ .. λάβοι forsan | b31 αὐτοῦ : τοιούτου edd.
| b37 διὰ τί : διότι edd. | 161a3 οὐδὲ λέλυκεν BᵏWSʷB : οὐ λέλυκε μέν R | a4 προάγειν :
προαγαγεῖν edd. | a8 προσάγειν : προάγειν edd. | εἰς : πρὸς edd. | a11 ἢ BᵏWSʷB : exp. R |
a13 εἴπομεν : εἴπαμεν edd. |

b26 ψεύδη αVDμ : ψευδῆ βC Aᵖ[560.16] | ἐάν .. λάβῃ φ : εἰ .. λάβοι λ : εἰ .. λέγοι κ [Aᵖ[560.16, 18]: λάβ..]
| b30 γάρ αδλ : γὰρ ἂν γ [Λ] | b31 αὐτοῦ βκ : τοιούτου αλ | b33 γράφει αδχ : γράφει ὅτι λύσις μὲν λέγεται
μετὰ τὸ συμπέρασμα κωλύσεις δὲ πρώτου συμπεράσματος γ | παρὰ αγχ : περὶ δ | b37 διὰ τί Λᵒᵗᴹᵗᴼᵈᵞᶠ
Aᵖ[561.18] : διότι φΛᶜᵉᵗᵗˡ [Ψ] | ἀποδεικτέον φΨΛ Aᵖ[561.18] : ἀποδεκτέον Λ | 161a3 οὐδὲ : οὐ χ |
λέλυκεν φΛC : λέλυκε μέν λ [Ψ] | ὁ μέντοι φΨΛ : ὃ Λ | a4 προάγειν χ : προσάγειν β : προαγαγεῖν α | a5 ἠρωτημένα
αΨΣμ : ἠρωτημένα λέγειν βΛD | συμβαίη φD : συμβαίνοι Vμ [Λ] | a6 βούλεται φΨ : βουλόμεθα Λλ |
προστεθέντος φΛDCε : προτεθέντος ν | a7 μὲν αVγλ : om. δ | a8 προσάγειν β Aᵖ[562.16] : προάγειν αΛλ |
εἰς Aᵒβλ : πρὸς α Aᵖ[562.19] [Λ] | a13 εἴπομεν βλ : εἴπαμεν α : dictum est prius Λ [Ψ] | μόνον αVΛCμ : καὶ
μόνη βD | a16 λόγου αVκμ Aˡ[563.10-ABD] : ἐν λόγῳ βC, cf. Aᵖ[563.12-aBDP] : τοῦ λόγου D Aˡ[563.10-
aP] | κατ’ αὐτόν αλ Aˡ[563.10-BD]Aᵖ[563.12-ABD] : καθ’ αὐτόν βΨ?λ Aˡ[563.10-aAP]Aᵖ[563.12-aP] |
a17 ἐρωτᾶται φΛDCε Aˡ[563.11] : ἐπερωτᾶται ue |

διειλέχθαι τὸν λόγον ὁ ἐρωτώμενος αἴτιος διὰ τὸ μὴ συγ-
χωρεῖν ἐξ ὧν ἦν διαλεχθῆναι καλῶς πρὸς τὴν θέσιν· οὐ γὰρ
20   ἔστιν ἐπὶ θατέρῳ μόνον τὸ καλῶς ἐπιτελεσθῆναι τὸ κοινὸν
ἔργον. ἀναγκαῖον οὖν ἐνίοτε πρὸς τὸν λέγοντα καὶ μὴ πρὸς
τὴν θέσιν ἐπιχειρεῖν, ὅταν ὁ ἀποκρινόμενος τἀναντία τῷ ἐρω-
τῶντι παρατηρῇ προσεπηρεάζων. δυσκολαίνοντες οὖν ἀγωνι-
στικὰς καὶ οὐ διαλεκτικὰς ποιοῦνται τὰς διατριβάς. ἐπεὶ
25   δὲ γυμνασίας καὶ πείρας χάριν ἀλλ’ οὐ διδασκαλίας οἱ
τοιοῦτοι τῶν λόγων, δῆλον ὡς οὐ μόνον τἀληθῆ συλλογιστέον
ἀλλὰ καὶ ψεῦδος, οὐδὲ δι’ ἀληθῶν ἀεὶ ἀλλ’ ἐνίοτε καὶ
ψευδῶν· πολλάκις γὰρ ἀληθοῦς τεθέντος ἀναιρεῖν ἀνάγκη
τὸν διαλεγόμενον, ὥστε προτατέον τὰ ψευδῆ. ἐνίοτε δὲ καὶ
30   ψεύδους τεθέντος ἀναιρετέον διὰ ψευδῶν· οὐδὲν γὰρ κωλύει
τινὶ δοκεῖν τὰ μὴ ὄντα μᾶλλον τῶν ἀληθῶν, ὥστ’ ἐκ τῶν
ἐκείνῳ δοκούντων τοῦ λόγου γινομένου μᾶλλον ἔσται πεπεισμένος
ἢ ὠφελημένος. δεῖ δὲ τὸν καλῶς μεταβιβάζοντα διαλεκτι-
κῶς καὶ μὴ ἐριστικῶς μεταβιβάζειν, καθάπερ τὸν γεωμέ-
35   τρην γεωμετρικῶς, ἄν τε ψεῦδος ἄν τ’ ἀληθὲς ᾖ τὸ συμπε-
ραινόμενον· ποῖοι δὲ διαλεκτικοὶ συλλογισμοί, πρότερον εἴ-
ρηται. ἐπεὶ δὲ φαῦλος κοινωνὸς ὁ ἐμποδίζων τὸ κοινὸν ἔρ-
γον, δῆλον ὅτι καὶ ἐν λόγῳ. κοινὸν γάρ τι καὶ ἐν τούτοις
τὸ προκείμενόν ἐστι, πλὴν τῶν ἀγωνιζομένων. τούτοις δ’ οὐκ ἔστιν
40   ἀμφοτέροις τυχεῖν τοῦ αὐτοῦ· πλείους γὰρ ἑνὸς ἀδύνα-
161b   τον νικᾶν. διαφέρει δ’ οὐδέν, ἄν τε διὰ τοῦ ἀποκρίνεσθαι ἄν
τε διὰ τοῦ ἐρωτᾶν ποιῇ τοῦτο· ὅ τε γὰρ ἐριστικῶς ἐρωτῶν
φαύλως διαλέγεται, ὅ τ’ ἐν τῷ ἀποκρίνεσθαι μὴ διδοὺς τὸ
φαινόμενον μηδ’ ἐκδεχόμενος ὅ τί ποτε βούλεται ὁ ἐρωτῶν
5   πυθέσθαι. δῆλον οὖν ἐκ τῶν εἰρημένων ὅτι οὐχ ὁμοίως ἐπι-
τιμητέον καθ’ αὑτόν τε τῷ λόγῳ καὶ τῷ ἐρωτῶντι· οὐδὲν
γὰρ κωλύει τὸν μὲν λόγον φαῦλον εἶναι, τὸν δὲ ἐρωτῶντα
ὡς ἐνδέχεται βέλτιστα πρὸς τὸν ἀποκρινόμενον διειλέχθαι.

a19 καλῶς edd. : om. forsan | a24-25 ἐπεὶ δὲ : ἔτι δ’ ἐπεὶ edd. | a34 γεωμέτρην BᵏWSʷR :
γεωμετρικὸν B | a36 ποῖοι edd. : ὁποῖοι forsan | a37 εἴρηται BᵏWSʷR : εἴρηνται B | a39 τὸ :
om. edd. | a40 αὑτοῦ : αὑτοῦ τέλους edd. |

a18 ἐρωτώμενος φΛλ : ἐρωτῶν Ψ | a19 καλῶς φλ : plane Λ : om. Ψ | a19-21 τὴν θέσιν – μὴ πρὸς αγχ
: om. δ | a20 μόνον αγΛDC : μόνῳ μ [δ] | a21 καὶ aVΛλ : πρὸς b : ἀλλὰ G [δ] | a23 παρατηρῇ
φΛΨ²λ : om. Ψᴵ | προσεπηρεάζων αGχ : προσεπιρεάζων b?δC | οὖν αΛλ Aᶜ[564.10] : οὖν ἐνίοτε VγΨ : γοῦν
ἐνίοτε δ | a24-25 ἐπεὶ δὲ VΔκ : ἔτι δ’ αλ : ἔτι γὰρ ἐπεὶ δὲ ἐπὶ γ | διδασκαλίας φλ : διδασκαλίας
χάριν Λ[tr.c.]C | a27-28 οὐδὲ δι’ – ψευδῶν φΛλ : om. Ψ | a27 ἀεὶ φΛDC : om. μ [Ψ] | καὶ φλ : καὶ
διὰ VΛ? [Ψ] | a28 τεθέντος αΨ?λ Aᵖ[564.24] : προτεθέντος βΛ | a29 προτατέον φDCe Aᵖ[564.26]
: προτατέον ν | a34 καθάπερ αχ : καθάπερ καὶ β | γεωμέτρην βΛλ Aᵖ[565.6] : γεωμετρικὸν α : om.
Ψ | a36 ποῖοι δὲ – εἴρηται ω : non reddit Aᵖ[565.9-10] | ποῖοι αμ : ὁποῖοι VβDC [Λ] | δὲ αλ : δὲ οἱ β
| εἴρηται VβΛDCμ : εἴρηνται α | a38 λόγῳ φΛDC Aᵖ[565.15] : λόγοις VΨμ | a38-39 καὶ ἐν τούτοις
προκείμενόν φΛ Aᵖ[565.15] : προκείμενον καὶ ἐν τούτοις λ | a39 τὸ AβΛ?D : om. Bμ | a40 αὑτοῦ
Vκ Aᵖ[565.18-20] : αὑτοῦ τέλους φλ | γὰρ αγΡΛλ Aᵖ[565.20] : om. ε | 161b1 ἀποκρίνεσθαι abδλ
: ἀποκρίνασθαι VGC | b2 τοῦτο φκDCe : ταὐτὸ Vν | b3 διαλέγεται αγΛλ : διαλέγεται ὅτε φαῦλος
διαλεγόμενος ἐριστικῶς ἐρωτᾷ δ |

πρὸς γὰρ τοὺς δυσκολαίνοντας οὐ δυνατὸν ἴσως εὐθὺς οἵους τις
βούλεται ἀλλ' οἵους ἐνδέχεται ποιεῖσθαι τοὺς συλλογισμούς.   10

Ἐπεὶ δὲ ἔστιν ἀδιόριστον πότε τἀναντία καὶ πότε τὰ ἐν
ἀρχῇ λαμβάνουσιν οἱ ἄνθρωποι (πολλάκις γὰρ καθ' αὑτοὺς
λέγοντες τὰ ἐναντία λέγουσι, καὶ ἀνανεύσαντες πρότερον δι-
δόασιν ὕστερον· διόπερ ἐρωτώμενοι τἀναντία καὶ τὰ ἐν ἀρχῇ
πολλάκις ὑπακούουσιν), ἀνάγκη φαύλους γίνεσθαι τοὺς λόγους.   15
αἴτιος δὲ ὁ ἀποκρινόμενος, τὰ μὲν οὐ διδούς, τὰ δὲ τοιαῦτα
διδούς. φανερὸν οὖν ὡς οὐχ ὁμοίως ἐπιτιμητέον τοῖς ἐρωτῶσι
καὶ τοῖς λόγοις.

Καθ' αὑτὸν δὲ τῷ λόγῳ πέντε εἰσὶν ἐπιτιμήσεις· πρώ-
τη μὲν ὅταν ἐκ τῶν ἠρωτημένων μὴ συμπεραίνηται μήτε τὸ προ-   20
τεθὲν μήτε ὅλως μηδέν, ὄντων ψευδῶν ἢ ἀδόξων, ἢ πάν-
των ἢ τῶν πλείστων, ἐν οἷς τὸ συμπέρασμα, καὶ μήτε ἀφαιρε-
θέντων τινῶν μήτε προστεθέντων μήτε τῶν μὲν ἀφαιρεθέν-
των τῶν δὲ προστεθέντων γίνεται τὸ συμπέρασμα. δευτέρα
δὲ εἰ πρὸς τὴν θέσιν μὴ γίνοιτο ὁ συλλογισμὸς ἐκ τοιούτων   25
τε καὶ οὕτως ὡς εἴρηται πρότερον. τρίτη δὲ εἰ προστεθέντων
τινῶν γίνοιτο συλλογισμός, ταῦτα δ' εἴη χείρω τῶν ἐρωτη-
θέντων καὶ ἧττον ἔνδοξα τοῦ συμπεράσματος. πάλιν εἰ
ἀφαιρεθέντων τινῶν· ἐνίοτε γὰρ πλείω λαμβάνουσι τῶν ἀναγ-
καίων, ὥστε οὐ τῷ ταῦτα εἶναι γίνεται ὁ συλλογισμός. ἔτι   30
εἰ ἐξ ἀδοξοτέρων καὶ ἧττον πιστῶν τοῦ συμπεράσματος, ἢ εἰ
ἐξ ἀληθῶν ἀλλὰ πλείονος ἔργου δεομένων ἀποδεῖξαι τοῦ
προβλήματος.

Οὐ δεῖ δὲ πάντων τῶν προβλημάτων ὁμοίως ἀξιοῦν
τοὺς συλλογισμοὺς ἐνδόξους εἶναι καὶ πιθανούς· φύσει γὰρ εὐ-   35
θὺς ὑπάρχει τὰ μὲν ῥᾷω τὰ δὲ χαλεπώτερα τῶν ζητου-
μένων, ὥστε ἂν ἐξ ὧν ἐνδέχεται μάλιστα ἐνδόξων συμβι-
βάσῃ, διείλεκται καλῶς. φανερὸν οὖν ὅτι οὐδὲ λόγῳ ἡ αὐτὴ
ἐπιτίμησις πρός τε τὸ προβληθὲν καὶ καθ' αὑτόν· οὐδὲν γὰρ
κωλύει καθ' αὑτὸν μὲν εἶναι τὸν λόγον ψεκτόν, πρὸς δὲ τὸ   40
πρόβλημα ἐπαινετόν, καὶ πάλιν ἀντεστραμμένως καθ' αὑ-   162a

161b14 τὰ : τὸ edd. | b20 ἠρωτημένων : ἐρωτωμένων edd. | b31 εἰ² edd. : om. forsan |

b10 ἐνδέχεται αγγ Aᶜ[566.3]Aᵖ[566.13] : τις βούλεται γ | b11 πότε¹ φΛ?DC Aⁱ[566.17]Aᵖ[566.19] :
τὸ πότε μ | b13 τὰ φ : om. λ | b14 ἐρωτώμενοι φΨΛ Aᵖ[566.22] : ἐρωτῶντες Λ | τἀναντία καὶ φκ : καὶ
τὰ ἐναντία λ | καὶ φΨΛ : om. Λ | τὰ βχ : τὸ αC | b15 λόγους αχ : συλλογισμούς β | b17 ὡς φΛ[vel ὅτι]
DCe : ὅτι V : om. ν | τοῖς φΨλ : καὶ τοῖς Λ | b19 τῷ λόγῳ ΑβΛ?DCue Aⁱ[567.7] : λόγων Bᶜ? | b20 μὲν
αΛΛ : μὲν οὖν β | ἠρωτημένων βλ Aᵖ[567.10] : ἐρωτωμένων α | b20-21 τὸ προτεθὲν αVΛD Aᵖ[567.11]
: τὸ προστεθὲν β : πρὸς τὸ τεθὲν Ψℭμ | b21 ὄντων φce Aᵖ[567.12] : ὄντων ἢ VκDu | b23 τινῶν –
ἀφαιρεθέντων αγΡΛΛ Aᵖ[567.14, 567.26-568.1] : om. ε | μήτε αγΡκDe Aᵖ[567.14, 567.26] : μηδὲ VCν
[ε] | b24 γίνηται αγDe : γίνεται VδCν [Λ] | δευτέρα αVbδΛDCν : δεύτερον Ge? | b25 μὴ φκDCe
Aᵖ[568.7] : om. ν | ἐκ αλ Aᶜ[568.8] : ἐκ τῶν β [Ψ] | b28 ἔνδοξα αχ Aᵖ[568.16] : ἄδοξα β | πάλιν αΛΛ :
ἢ πάλιν β | εἰ αΛΛ : om. β | b30 ταῦτα αγΛΛ Aᵖ[568.21] : ταὐτὰ δ | b31 εἰ² φΛDC : om. Ψμ Aᵖ[568.24]
| b35 πιθανούς αGδλ : πειθανοῦς bC | b37 ἐνδέχεται φDC : ἐνδέχηται μ | ἐνδόξων αχ : ἢ ἐνδόξων β
| συμβιβάσῃ αΡχ : συμβιβάσει γ : συμβηβάσαι ε | b38 οὐδὲ αVγΛΛ : οὐδὲν δ | b39 αὑτόν φΛDCe
Aᵖ[569.24] : αὑτό ν |

τὸν μὲν ἐπαινετόν, πρὸς δὲ τὸ πρόβλημα ψεκτόν, ὅταν ἐκ
πολλῶν ᾖ ῥᾴδιον ἐνδόξων συμπεράνασθαι καὶ ἀληθῶν. εἴη
δ᾽ ἄν ποτε λόγος καὶ συμπεπερασμένος μὴ συμπεπερα-
σμένου χείρων, ὅταν ὁ μὲν ἐξ εὐήθων συμπεραίνηται μὴ
5   τοιούτου τοῦ προβλήματος ὄντος, ὁ δὲ προσδέηται τοιούτων ἅ
ἐστιν ἔνδοξα καὶ ἀληθῆ, καὶ μὴ ἐν τοῖς προσλαμβανομέ-
νοις ᾖ ὁ λόγος. τοῖς δὲ διὰ ψευδῶν ἀληθὲς συμπεραινομέ-
νοις οὐ δίκαιον ἐπιτιμᾶν· ψεῦδος μὲν γὰρ ἀεὶ ἀνάγκη διὰ
10   ψεύδους συλλογίζεσθαι, τὸ δ᾽ ἀληθὲς ἔστι καὶ διὰ ψευ-
δῶν ποτε συλλογίζεσθαι. φανερὸν δὲ ἐκ τῶν Ἀναλυτικῶν.

Ὅταν δὲ ἀπόδειξις ᾖ τινος ὁ εἰρημένος λόγος, εἴ τί
ἐστιν ἄλλο πρὸς τὸ συμπέρασμα μηδαμῶς ἔχον, οὐκ ἔσται
περὶ ἐκείνου συλλογισμός· ἐὰν δὲ φαίνηται, σόφισμα ἔσται,
15   οὐκ ἀπόδειξις. [ἔστι δὲ φιλοσόφημα μὲν συλλογισμὸς ἀπο-
δεικτικός, ἐπιχείρημα δὲ συλλογισμὸς διαλεκτικός, σόφι-
σμα δὲ συλλογισμὸς ἐριστικός, ἀπόρημα δὲ συλλογισμὸς
διαλεκτικὸς ἀντιφάσεως.]

Εἰ δ᾽ ἐξ ἀμφοτέρων τι δοκούντων δειχθείη, μὴ ὁμοίως
20   δὲ δοκούντων, οὐδὲν κωλύει τὸ δειχθὲν μᾶλλον ἑκατέρου δο-
κεῖν. ἀλλ᾽ εἰ τὸ μὲν δοκοίη τὸ δὲ μηδετέρως, ἢ εἰ τὸ μὲν
δοκοίη τὸ δὲ μὴ δοκοίη, εἰ μὲν ὁμοίως, ὁμοίως ἂν εἴη καὶ
μή, εἰ δὲ μᾶλλον θάτερον, ἀκολουθήσει τῷ μᾶλλον.

Ἔστι δέ τις ἁμαρτία καὶ αὕτη περὶ τοὺς συλλογι-
25   σμούς, ὅταν δείξῃ διὰ μακροτέρων, ἐνὸν δι᾽ ἐλαττόνων καὶ
ἐν τῷ λόγῳ ὑπαρχόντων, οἷον ὅτι ἔστι δόξα μᾶλλον ἑτέρα
ἑτέρας, εἴ τις αἰτήσαιτο αὐτοέκαστον μᾶλλον εἶναι, εἶναι δὲ

162a10 ψεύδους BᵏWB : ψευδῶν SʷR | a14 περὶ WSʷRB : παρὰ Bᵏ | a15-18 ἔστι δὲ
φιλοσόφημα – διαλεκτικὸς ἀντιφάσεως exp. B : hab. BᵏWSʷR | a23 μὴ BᵏWB : <δοκοῦν
καὶ> μὴ Wallies SʷR | a24 ἁμαρτία καὶ αὕτη περὶ τοὺς συλλογισμοὺς edd. : καὶ αὐτή περὶ
τοὺς λόγους ἁμαρτία forsan | a27 μᾶλλον : μάλιστ᾽ edd. |

162a2-3 ὅταν … ᾖ φκD : ὅτι … Cμ | ἐκ αχ : οὖν ἐκ β | a4 λόγος αγΛμ Aˡ[570.12] : καὶ λόγος δD |
συμπεπερασμένος αVPiΛλ Aˡ[570.12] : συμπερασμένος Gh [b] | a5 χείρων αδΛλ Aˡ[570.13] : χειρόνων
γ | ἐξ αVδχ : ἐξ ἐν ἄλλῳ ἐξ γ | εὐήθων αγΛλ : ἀληθῶν δ | συμπεραίνηται αVPhΛλ : συμπεραίνεται
γἰ | a6 τοιούτων αVδΛλ : τοιοῦτον γ | a7 προσλαμβανομένοις ακD¹Ce : προλαμβανομένοις βD⁰⁷v | a8
συμπεραινομένοις φΛ Aˡ[570.24] : συμπεραίνουσιν λ [Ψ] | a9 οὐ δίκαιον ω Aˡ[570.24]Aʸᵖ[570.26] :
δίκαιον Aʸᵖ[570.26] | a10 ψεύδους φΛD : ψευδῶν ΨCμ | a10-11 καὶ διὰ ψευδῶν ποτε φλ : ποτὲ καὶ διὰ
ψευδῶν VΛ [Ψ] | a11 συλλογίζεσθαι αVγC : συλλογίσασθαι δλ | a12 τινος φΛλ : τινος τῶν πολλῶν
Ψ | εἰρημένος φΛλ : om. Ψ | εἴ φDCv Aˡ[571.6] : ἢ εἴ Λε : καὶ Ψ | a13 ἐστιν αχ Aˡ[571.6] : om. β |
μηδαμῶς αγΛλ : μηδαμοῦ δ | ἔχον αχ Aˡ[571.6]Aᵖ[571.16] : ἔχων β | ἔσται αχ Aᵖ[571.16] : ἕν γ : ἂν δ |
a18 ἀντιφάσεως αδχ : ἀντιφάσεως ἐν ἄλλῳ τοῦ ἑτέρου γ | a20-21 ἑκατέρου – ἢ εἰ αδχ Aᵖ[571.24-25] :
τὸ μηδετέρως ἢ τὸ μὲν δοκοίη ἑκατέρου δοκεῖν ἀλλ᾽ γ | a20 ἑκατέρου φΛᴮᵃΨCμ Aᵖ[571.22] : τοῦ ἑτέρου
ΛᶜᵉᵗᵗᐧD | a21 εἰ² αχ : om. β Aᵖ[571.25] | a22 μὲν ακμ Aᵖ[571.25] : μὲν οὖν βD | a23 τῷ αVΨC Aᵖ[572.2] : τὸ
βμ [ΛD] | a24 ἁμαρτία καὶ αὕτη περὶ τοὺς συλλογισμοὺς φΨΛ : καὶ αὐτή ἁμαρτία περὶ τοὺς συλλογισμοὺς
C : καὶ αὐτή περὶ τοὺς λόγους ἁμαρτία Λ ΑVΨCμ Aˡ[572.4: αὕτη] | αὕτη ΑVΨCμ Aˡ[572.4] : αὐτή ΒβΛD | περὶ Ακ
Aˡ[572.4] : κατὰ Ββλ | a25 ἐνὸν φΛ : ἐνδεχόμενον λ [Ψ] | a26 ἐν αχ : om. β | a27 εἴ αγχ : ἢ ε | αἰτήσαιτο
αὐτοέκαστον ΑVδχ : αἰτῆσαι τὸ αὐτὸ ἕκαστον Bb : αἰτήσαιτο αὐτὸ G? | μᾶλλον βκD Aᵖ[572.11] : μάλιστα
ΑVCμ Aᵖ[572.16] : om. B |

δοξαστὸν ἀληθῶς αὐτό, ὥστε τῶν τινῶν μᾶλλον εἶναι αὐτό·
πρὸς δὲ τὸ μᾶλλον μᾶλλον τὸ λεγόμενον εἶναι· εἶναι δὲ
καὶ αὐτοδόξαν ἀληθῆ, ἢ ἔσται μᾶλλον ἀκριβὴς τῶν τινῶν·   30
ἤτηται δὲ καὶ αὐτοδόξαν ἀληθῆ εἶναι καὶ αὐτοέκαστον μά-
λιστ’ εἶναι· ὥστε αὕτη ἡ δόξα ἀληθὴς ἀκρι-
βεστέρα ἐστίν. τίς δὲ ἡ μοχθηρία; ἢ ὅτι ποιεῖ, παρ’ ὃ ὁ
λόγος, λανθάνειν τὸ αἴτιον;

12   Λόγος δὲ ἐστι δῆλος ἕνα μὲν τρόπον καὶ δημοσιώτα-   35
τον, ἐὰν ᾖ συμπεπερασμένος οὕτως ὥστε μηδὲν δεῖν ἐπερω-
τῆσαι· ἕνα δὲ καὶ ὃς μάλιστα λέγεται, ὅταν εἰλημμένα
μὲν ᾖ ἐξ ὧν ἀναγκαῖον εἶναι, ᾖ δὲ διὰ συμπερασμάτων   162b
συμπεραινόμενος· ἔτι εἰ ἐλλείπει τὸ σφόδρα ἔνδοξον.

Ψευδὴς δὲ λόγος καλεῖται τετραχῶς· ἕνα μὲν τρόπον
ὅταν φαίνηται συμπεραίνεσθαι μὴ συμπεραινόμενος, ὃ κα-
λεῖται ἐριστικὸς συλλογισμός. ἄλλον δὲ ὅταν συμπεραίνηται   5
μέν, μὴ μέντοι πρὸς τὸ προκείμενον (ὅπερ συμβαίνει μάλιστα
τοῖς εἰς ἀδύνατον ἄγουσιν), ἢ πρὸς τὸ προκείμενον μὲν
συμπεραίνηται, μὴ μέντοι κατὰ τὴν οἰκείαν μέθοδον. τοῦτο
δὲ ἐστίν, ὅταν μὴ ὢν ἰατρικὸς δοκῇ ἰατρικὸς εἶναι, ἢ γεωμε-
τρικὸς μὴ ὢν γεωμετρικός, ἢ διαλεκτικὸς μὴ ὢν διαλεκτι-   10
κός, ἄν τε ψεῦδος ἄν τε ἀληθὲς ᾖ τὸ συμβαῖνον. ἄλλον δὲ
τρόπον ἐὰν διὰ ψευδῶν συμπεραίνηται. τούτου δὲ ἔσται ποτὲ
μὲν τὸ συμπέρασμα ψεῦδος, ποτὲ δ’ ἀληθές· τὸ μὲν γὰρ
ψεῦδος ἀεὶ διὰ ψευδῶν περαίνεται, τὸ δ’ ἀληθὲς ἐγχωρεῖ
καὶ μὴ ἐξ ἀληθῶν, ὥσπερ εἴρηται καὶ πρότερον.   15

Τὸ μὲν οὖν ψευδῆ τὸν λόγον εἶναι τοῦ λέγοντος ἁμάρ-
τημα μᾶλλον ἢ τοῦ λόγου, καὶ οὐδὲ τοῦ λέγοντος ἀεί, ἀλλ’

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a32 αὕτη ἡ BᵏB : αὕτη WSʷR | δόξα ἀληθὴς B : δόξα WSʷR : δόξα ἡ μάλιστα ἀληθὴς Bᵏ | a33 ἢ
BᵏSʷB : ᾖ WR | 162b1 εἶναι BᵏWSʷR : om. B | b2 συμπεραινόμενος WSʷRB : συμπεραινόμενα Bᵏ |
τὸ : τι R : om. BᵏWSʷB | b2 ἔνδοξον BᵏSʷR : ἐνδόξων WB | b4 ὃ καλεῖται BᵏWRB : ὃς καλεῖται Sʷ
| b6 προκείμενον edd. : κείμενον forsan B | b7 προκείμενον BᵏSʷR : κείμενον WB | b12 τούτου edd.
: τοῦτο forsan | b17 ἀεί BᵏSʷRB : ἀεί τὸ ἁμάρτημα W |

a28 ἀληθῶς αὐτό αδ : ἀληθῶς αὐτῷ γ : αὐτὸ ἀληθῶς χ : ἀληθὲς αὐτὸ vel αὐτὸ ἀληθὲς Aᵖ[572.17] | εἶναι φκ : om. λ |
a29 μᾶλλον τὸ λεγόμενον φΨλ : τὸ λεγόμενον μᾶλλον Λ[tr.c.] : λεγόμενον μᾶλλον Aᵖ[572.21, 22-23] | a30 αὐτοδόξαν
αγΛCce : αὐτὸ δόξαν δDu [Ψ] : ἢ AbΛCμ Aᵖ[572.26] : ἢ BV?GδD [Ψ] | ἀκριβὴς τῶν αχ Aᵖ[573.1] : ἀκριβῆ τῶν β |
a31 ἤτηται φκCce Aᶜ[573.3] : ἤττηται Du | a32 αὕτη ἡ δόξα ἀληθὴς βCv : αὐτὴ δόξα ἀληθὴς α : ἡ αὐτὴ δόξα ἀληθὴς
VΛΨ[sine αὐτὴ] : ἡ αὐτοδόξα De | a33 ἢ φΛλ : om. Ψ?C | ποιεῖ αVδκDCe : ποιῇ γ : ποι ν | παρ’ φλ : περὶ Λ | a37
ὃς ΑβΛce Aᶜ[574.1-a] : ὡς BDCu Aᶜ[574.1-ABDP] [Ψ] | λέγεται αΛλ Aᶜ[574.1]? : λέγεται καὶ β | 162b1 ἀναγκαῖον
εἶναι βκDe : ἀναγκαίων αν : ἀναγκαῖον C | ᾖ² BVβΛDCe : εἰ ν | b2 εἰ αχ : om. β | τὸ βκDe : om. αCv | ἔνδοξον βκDe
Aᵖ[574.11] : ἐνδόξων αCv | b3 λόγος αλ Aˡ[574.16] : ὁ λόγος β | b4 ὃ καλεῖται αVΨCμ : ὃς καλεῖται D, cf. Aᵖ[574.19]
: καλεῖται δὲ φαινόμενος βΛ | b5 ἐριστικὸς συλλογισμός φκ : συλλογισμὸς ἐριστικός λ : ἐριστικός Aᵖ[574.19]? | b6
προκείμενον AVδκν Aᵖ[574.21, 28] : κείμενον ΒγDCe | b7 τοῖς φΨλ Aᵖ[574.22] : ἐν τοῖς VΛ? : εἰς αγC Aᵖ[574.22] :
εἰς τὸ δλ | ἀδύνατον αbδΛμ Aᵖ[574.22] : δυνατὸν GD | προκείμενον Vκε Aᵖ[575.8] : κείμενον φDCv | b9 ὅταν φΛ?D
: ἐὰν ὁ VCμ | ὢν αεΛλ : ὧν γP | δοκῇ λ : δοκεῖ φ | b12 διὰ αγχ Aᵖ[575.15] : om. δ | τούτου αVΨCv : τοῦτο βΛDe |
b12-13 ποτὲ μὲν τὸ συμπέρασμα φλ : τὸ συμπέρασμα ποτὲ μὲν ΛC | b13 ψεῦδος φΨCμ : ψευδὲς ΛD | b14 περαίνεται
αγχ : συμπεραίνεται δ | b15 ἐξ φΨ : δι’ Λλ | b17 ἀεί χ Aᵖ[575.22] : ἀεί τὸ ἁμάρτημα φ |

ὅταν λανθάνῃ αὐτόν· ἐπεὶ καθ᾽ αὐτόν γε πολλῶν ἀληθῶν
ἀποδεχόμεθα μᾶλλον, ἂν ἐξ ὅτι μάλιστα δοκούντων ἀναιρῇ
20 τι τῶν ἀληθῶν. τοιοῦτος γὰρ ὢν ἑτέρων ἀληθῶν ἀπόδειξίς
ἐστιν· δεῖ γὰρ τῶν κειμένων τι μὴ εἶναι παντελῶς, ὥστε ἔσται
τούτου ἀπόδειξις. εἰ δ᾽ ἀληθὲς συμπεραίνοιτο διὰ ψευδῶν καὶ
λίαν εὐήθων, πολλῶν ἂν εἴη χείρων ψεῦδος συλλογιζομέ-
νων· εἴη δ᾽ ἂν τοιοῦτος καὶ ψεῦδος συμπεραινόμενος· ὥστε
25 δῆλον ὅτι πρώτη μὲν ἐπίσκεψις λόγου καθ᾽ αὐτὸν εἰ συμ-
περαίνεται, δευτέρα δὲ πότερον ἀληθὲς ἢ ψεῦδος, τρίτη δὲ
ἐκ ποίων τινῶν. εἰ μὲν γὰρ ἐκ ψευδῶν ἐνδόξων δέ, λογικός·
εἰ δ᾽ ἐξ ὄντων μὲν ἀδόξων δέ, φαῦλος· εἰ δὲ καὶ ψευδῆ
καὶ λίαν ἄδοξα, δῆλον ὅτι φαῦλος ἢ ἁπλῶς ἢ τοῦ πράγ-
30 ματος.

Τὸ δὲ ἐν ἀρχῇ καὶ τὰ ἐναντία πῶς αἰτεῖται ὁ ἐρω-   **13**
τῶν, κατ᾽ ἀλήθειαν μὲν ἐν τοῖς Ἀναλυτικοῖς εἴρηται, κατὰ
δόξαν δὲ νῦν λεκτέον.

Αἰτεῖσθαι δὲ φαίνονται τὸ ἐν ἀρχῇ πενταχῶς. φανε-
35 ρώτατα μὲν καὶ πρῶτον, εἴ τις αὐτὸ τὸ δείκνυσθαι δέον αἰ-
τήσειεν. τοῦτο δ᾽ ἐπ᾽ αὐτοῦ μὲν οὐ ῥάδιον λανθάνειν, ἐν δὲ τοῖς
συνωνύμοις καὶ ἐν ὅσοις τὸ ὄνομα καὶ ὁ λόγος τὸ αὐτὸ
163a σημαίνει, μᾶλλον. δεύτερον δέ, ὅταν κατὰ μέρος δέον ἀπο-
δεῖξαι καθόλου τις αἰτήσῃ, οἷον ἐπιχειρῶν ὅτι τῶν ἐναντίων
μία ἐπιστήμη, ὅλως τῶν ἀντικειμένων ἀξιώσειεν μίαν εἶναι·
δοκεῖ γὰρ ὃ ἔδει καθ᾽ αὐτὸ δεῖξαι μετ᾽ ἄλλων αἰτεῖσθαι
5 πλειόνων. τρίτον εἴ τις καθόλου δεῖξαι προκειμένου κατὰ μέ-
ρος αἰτήσειεν, οἷον εἰ πάντων τῶν ἐναντίων προκειμένου τῶνδέ
τινων ἀξιώσειεν· δοκεῖ γὰρ καὶ οὗτος ὃ μετὰ πλειόνων ἔδει
δεῖξαι καθ᾽ αὐτὸ χωρὶς αἰτεῖσθαι. πάλιν εἴ τις διελὼν
αἰτεῖται τὸ προβληθέν, οἷον εἰ, δέον δεῖξαι τὴν ἰατρικὴν ὑγι-
10 εινοῦ καὶ νοσώδους, χωρὶς ἑκάτερον ἀξιώσειεν, ἢ εἴ τις τῶν
ἑπομένων ἀλλήλοις ἐξ ἀνάγκης θάτερον αἰτήσειεν, οἷον τὴν

b23 πολλῶν B^kWS^wR : πολλῷ B | b35 αἰτήσειεν S^wR : αἰτήσει B^kWB | 163a2 οἷον B^kWB :
οἷον <εἰ> Rassow S^wR | a9 προβληθὲν B^k : πρόβλημα WS^wRB |

b18 αὐτόν φκ : αὐτὸν ὅτι ψευδῆ λόγον εἶπεν τινά λ | b19 ἀποδεχόμεθα χ A^p[575.25-aP] : ἀντεχόμεθα φ
| ἀναιρῇ αVPhλ : ἀναιρεῖ γι [Λ] | b20 τῶν hic desinit manus vetus codicis V | τοιοῦτος αδχ : τοιοῦτως γ
| ἑτέρων φκDC : om. μ | b23 πολλῶν βκCce : πολλῷ αDu A^p[576.12] | χείρων αγDC A^p[576.12] : χεῖρον
δμ [Ψ] | ψεῦδος φΛD A^p[576.12] : ψεύδως μ | b25 λόγου αCμ A^l[576.19] : τοῦ λόγου βD [Λ] | b27 ποίων
αδχ A^p[576.24] : ποιῶν γ | λογικός αδχ A^p[576.24] : ἐν ἄλλῳ συλλογισμῷ γ | b28 δ᾽ ἐξ ὄντων Gδκχ
A^p[576.27] : δεξόντων/δ᾽ ἐξόντων ab | b29 λίαν ἄδοξα φκCce A^p[576.29] : λίαν ἔνδοξα Du | φαῦλος
φκε A^p[576.30] : φαῦλως Dv | b31 πῶς αλ : ὅπως β [Λ] | αἰτεῖται αδχ : αἰτεῖται περὶ τούτων ἐν ἀρχῇ
αἰτεῖσθαι γ | b34 φανερώτατα αλ : φανερώτατον β | b35 αἰτήσειεν βχ : αἰτήσει α | b36 οὐ ῥάδιον φΛD
: οὐ ῥᾶον Cμ | λανθάνειν αλ : λαθεῖν β | 163a2 ὅτι τῶν ἐναντίων αδΛΛ A^l[578.16] : ὅτι τῶν ἐναντίων
ὅτι τῶν ἐναντίων γ | a3 μία ω : μία ἐστιν A^l[578.16] | ἀξιώσειεν αγDue : ἀξιώσει δ | a5 τις Ψλ : τι Αβ
: τις τὸ ΒΛ A^l[578.22] | a6 προκειμένου αΛΛ A^l[578.23-a] : προκειμένων β A^l[578.23-BP] | τῶνδέ αχ
A^l[578.23] : τῷδε β | a7 ἀξιώσειεν φDe A^l[578.24] : ἀξιώσει ν | καὶ φΨλ A^l[578.24] : om. Λ | a8 αὐτὸ
φκDe : αὐτὸ καὶ Cν | a9 προβληθὲν βχ A^l[579.6-aBP] : πρόβλημα α A^l[579.6-AD] | δέον αδχ : δὲ γ | a11
θάτερον αγPχ : om. ε |

πλευρὰν ἀσύμμετρον τῇ διαμέτρῳ, δέον ἀποδεῖξαι ὅτι ἡ
διάμετρος τῇ πλευρᾷ.

Ἰσαχῶς δὲ καὶ τἀναντία αἰτοῦνται τῷ ἐξ ἀρχῆς. πρῶ-
τον μὲν γὰρ εἴ τις τὰ ἀντικείμενα αἰτήσαιτο, φάσιν καὶ 15
ἀπόφασιν, δεύτερον δὲ τἀναντία κατὰ τὴν ἀντίθεσιν, οἷον
ἀγαθὸν καὶ κακὸν ταὐτόν. τρίτον εἴ τις τὸ καθόλου ἀξιώσας
ἐπὶ μέρους αἰτοῖτο τὴν ἀντίφασιν, οἷον εἰ λαβὼν τῶν ἐναν-
τίων μίαν ἐπιστήμην ὑγιεινοῦ καὶ νοσώδους ἑτέραν ἀξιώσειεν,
ἢ τοῦτο αἰτησάμενος ἐπὶ τοῦ καθόλου τὴν ἀντίφασιν πειρῷτο 20
λαμβάνειν. πάλιν ἐάν τις αἰτήσῃ τὸ ἐναντίον τῷ ἐξ ἀνάγκης
συμβαίνοντι διὰ τῶν κειμένων, κἂν εἴ τις αὐτὰ μὲν μὴ
λάβοι τὰ ἀντικείμενα, τοιαῦτα δ' αἰτήσαιτο δύο ἐξ ὧν ἔσται
ἡ ἀντικειμένη ἀντίφασις. διαφέρει δὲ τὸ τἀναντία λαμβά-
νειν τοῦ ἐν ἀρχῇ ὅτι τοῦ μέν ἐστιν ἡ ἁμαρτία πρὸς τὸ συμ- 25
πέρασμα (πρὸς γὰρ ἐκεῖνο βλέποντες τὸ ἐν ἀρχῇ λέγομεν
αἰτεῖσθαι), τὰ δ' ἐναντία ἐστὶν ἐν ταῖς προτάσεσι τῷ ἔχειν
πως ταύτας πρὸς ἀλλήλας.

14   Πρὸς δὲ γυμνασίαν καὶ μελέτην τῶν τοιούτων λόγων
πρῶτον μὲν ἀντιστρέφειν ἐθίζεσθαι χρὴ τοὺς λόγους· οὕτως γὰρ 30
πρός τε τὸ λεγόμενον εὐπορώτερον ἕξομεν καὶ ἐν ὀλίγοις
πολλοὺς ἐξεπιστησόμεθα λόγους. τὸ γὰρ ἀντιστρέφειν ἐστὶ τὸ
μεταλαβόντα τὸ συμπέρασμα μετὰ τῶν λοιπῶν ἐρωτημά-
των ἀνελεῖν ἓν τῶν δοθέντων· ἀνάγκη γάρ, εἰ τὸ συμπέ-
ρασμα μὴ ἔστι, μίαν τινὰ ἀναιρεῖσθαι τῶν προτάσεων, εἴ- 35
περ πασῶν τεθεισῶν ἀνάγκη ἦν τὸ συμπέρασμα εἶναι. πρὸς
ἅπασάν τε θέσιν, καὶ ὅτι οὕτως καὶ ὅτι οὐχ οὕτως, τὸ ἐπι-
χείρημα σκεπτέον, καὶ εὑρόντα τὴν λύσιν εὐθὺς ζητητέον· 163b
οὕτως γὰρ ἅμα συμβήσεται πρός τε τὸ ἐρωτᾶν καὶ πρὸς τὸ
ἀποκρίνεσθαι γεγυμνάσθαι, κἂν πρὸς μηδένα ἄλλον ἔχω-
μεν,   πρὸς   αὑτούς.   παράλληλά   τε   ἐκλεκτέον   τὰ

5   πρὸς τὴν αὐτὴν θέσιν ἐπιχειρήματα· τοῦτο γὰρ πρός τε τὸ
βιάζεσθαι πολλὴν εὐπορίαν ποιεῖ καὶ πρὸς τὸ ἐλέγχειν με-
γάλην ἔχει βοήθειαν, ὅταν εὐπορῇ τις καὶ ὅτι οὕτως καὶ ὅτι
οὐχ οὕτως (πρὸς τὰ ἐναντία γὰρ συμβαίνει ποιεῖσθαι τὴν
φυλακήν)· πρός τε γνῶσιν καὶ τὴν κατὰ φιλοσοφίαν φρό-

10   νησιν τὸ δύνασθαι συνορᾶν καὶ συνεωρακέναι τὰ ἐφ' ἑκα-
τέρα συμβαίνοντα τῆς ὑποθέσεως οὐ μικρὸν ὄργανον· λοιπὸν
γὰρ τούτων ὀρθῶς ἑλέσθαι θάτερον. δεῖ δὲ πρὸς τὸ τοιοῦτον
ὑπάρχειν εὐφυᾶ, καὶ τοῦτο ἔστιν ἡ κατ' ἀλήθειαν εὐφυΐα,
τὸ δύνασθαι καλῶς ἑλέσθαι τὸ ἀληθὲς καὶ φυγεῖν τὸ ψεῦ-

15   δος· ὅπερ οἱ πεφυκότες εὖ δύνανται ποιεῖν εὖ· οἱ γὰρ φιλοῦντες
καὶ μισοῦντες τὸ προσφερόμενον εὖ κρίνουσι τὸ βέλτιστον.
     Πρός τε τὰ πλειστάκις ἐμπίπτοντα τῶν προβλημάτων
ἐξεπίστασθαι δεῖ λόγους, καὶ μάλιστα περὶ τῶν πρώτων θέ-
σεων· ἐν τούτοις γὰρ ἀποδυσπετοῦσιν πολλάκις οἱ ἀποκρινό-

20   μενοι. ἔτι τε ὅρων εὐπορεῖν δεῖ καὶ τῶν ἐνδόξων τε καὶ
τῶν πρώτων ἔχειν προχείρους· διὰ γὰρ τούτων οἱ συλλογι-
σμοί. πειρατέον δὲ καὶ εἰς ἃ πλειστάκις ἐμπίπτουσιν
οἱ λόγοι κατέχειν. ὥσπερ γὰρ ἐν γεωμετρίᾳ πρὸ
ἔργου τὸ περὶ τὰ στοιχεῖα γεγυμνάσθαι, καὶ ἐν ἀριθμοῖς τὸ

25   περὶ τοὺς κεφαλισμοὺς προχείρως ἔχειν – καὶ μέγα διαφέρει πρὸς
τὸ καὶ τὸν ἄλλον ἀριθμὸν γινώσκειν πολλαπλασιούμενον –,
ὁμοίως   καὶ   ἐν   τοῖς   λόγοις
καὶ τὰς προτάσεις ἀπὸ στόματος ἐξεπίστασθαι δεῖ· καθ-
άπερ γὰρ ἐν τῷ μνημονικῷ μόνον οἱ τόποι τεθέντες εὐθὺς

30   ποιοῦσιν αὐτὰ μνημονεύειν, καὶ ταῦτα ποιήσει συλλογιστι-

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b5 αὐτὴν θέσιν WSʷRB : ἀντίθεσιν Bᵏ | b10 ἐφ' ἑκάτερα : ἀφ' ἑκατέρας edd. | b15 ποιεῖν εὖ·
οἱ : ποιεῖν· εὖ edd. | b19 πολλάκις οἱ ἀποκρινόμενοι : οἱ ἀποκρινόμενοι πολλάκις edd. | b22
πειρατέον : γίνονται πειρατέον edd. | b23 λόγοι SʷR : ἄλλοι λόγοι BᵏWB | b25 καὶ W : om. Bᵏ-
SʷRB, forsan | b27 ὁμοίως BᵏWSʷR : ὁμοίως δὲ B | λόγοις : λόγοις τὸ πρόχειρον εἶναι περὶ τὰς
ἀρχάς edd. | b28 καὶ τὰς προτάσεις ἀπὸ στόματος ἐξεπίστασθαι BᵏWSʷR : om. B | δεῖ : om. edd. |

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b6 ἐλέγχειν φκSDe : ἐλέγχειν καὶ Cν | b8 γὰρ συμβαίνει φκ : γὰρ ἂν συμβαίνοι λ | b9 τε φ Aᴵ[584.3]
Aᵖ[584.4] : τε τὴν λ | b10 ἐφ' ἑκάτερα βχ Aᵖ[584.11] : ἀφ' ἑκατέρας α | b11 συμβαίνοντα φΨλ :
συμβαίνοντα λέγειν Λ | λοιπὸν αγρλ : λοιπὸν τὸν ε | b13 τοῦτο αδχ : τούτων γ | ἢ φSDC : om. μ | b14
τὸ αδχ : τοῦ δὲ γ | τὸ ἀληθὲς φΛDu : om. ΨCce [S] | φυγεῖν αλ : φεύγειν β | b15 δύνανται φκ : δύναντ'
ἂν λ | εὖ οἱ κS?DC?ce Aᵖ[584.22-24?] : εὖ αγμ : οἷον δ | b15-16 φιλοῦντες .. μισοῦντες αδχ Aᴵ[584.20] :
φιλοῦνται .. μισοῦνται γ | b16 προσφερόμενον φCce Aᴵ[584.20] : προφερόμενον Du [κS] | b19 πολλάκις
οἱ ἀποκρινόμενοι βΛ : οἱ ἀποκρινόμενοι πολλάκις αλ [Ψ] : ἀποκρινόμενοι αχ : συγκρινόμενοι β | b20
τε Bβλ Aᴵ[585.14]Aᵖ[585.15]? : om. ΑΛC? | b21 τῶν αβδCu Aᶜ[585.16] : om. GSDce [Λ] | τούτων
αγρχ : τοιούτων ε | b22 πειρατέον β Aᵖ[585.17] : γίνονται πειρατέον αχ | πειρατέον φΛλ : ?? Ψ | b23 οἱ
λόγοι Aᴵ[585.22-23-A]Aᶜ[585.24] : οἱ διάλογοι βχ Aᴵ[585.22-23-a] : ἄλλοι λόγοι α Aᴵ[585.22-23-DBP]
| κατέχειν φΛCμ : καὶ δεῖ κατέχειν SD | b24 τὸ¹ αλλ Aᶜ[586.2] : τὰ β | γεγυμνάσθαι αχ Aᶜ[586.2-ABD]
: προγεγυμνάσθαι β Aᶜ[586.2-aP] | b25 ἔχειν καὶ αγP : ἔχειν εχ | b27 ὁμοίως BγΨ : ὁμοίως δὲ ΑΔλλ | ἐν
τοῖς λόγοις αδλᶜᵉᵗᵗ·S²D : τοὺς λόγους γλ MᵗᵃΨ?S¹Cμ | λόγοις γχ Aᵖ[585.23-586.8] : λόγοις τὸ πρόχειρον
εἶναι περὶ τὰς ἀρχάς αδ | b28 καὶ τὰς – ἐξεπίστασθαι δεῖ γεΨS¹e : τὰς – ἐξεπίστασθαι δεῖ Λᶜᵉᵗᵗ·S²D : καὶ
τὰς – ἐξεπίστασθαι αPν : om. Λᶜʰᴹᵗ[partim] Aᵖ[585.23-586.8] | b30 ποιήσει αγρΨCue : ποιή.σι S¹ : ποιοῦσι
εΛS²Dc? |

κώτερον διὰ τὸ πρὸς ὡρισμένας αὐτὰς βλέπειν κατ' ἀρι-
θμόν. πρότασίν τε κοινὴν μᾶλλον ἢ λόγον εἰς μνήμην θετέον·
ἀρχῆς γὰρ καὶ ὑποθέσεως εὐπορῆσαι μετρίως χαλεπόν.

Ἔτι τὸν ἕνα λόγον πολλοὺς ποιεῖν ἐθιστέον, ὡς ἀδηλό-
τατα κρύπτοντας. εἴη δ' ἂν τὸ τοιοῦτον εἴ τις ὅτι πλεῖστον   35
ἀφισταίη τῆς συγγενείας περὶ ὧν ὁ λόγος. ἔσονται δὲ δυνατοὶ
τῶν λόγων οἳ μάλιστα καθόλου τοῦτο πάσχειν δύνανται, οἷον ὅτι
οὐκ ἔστι μία πλειόνων ἐπιστήμη· οὕτως γὰρ καὶ ἐπὶ τῶν πρός   164a
τι καὶ ἐπὶ τῶν ἐναντίων καὶ συστοίχων ἐστίν.

Δεῖ δὲ καὶ τὰς ἀπομνημονεύσεις καθόλου ποιεῖσθαι
τῶν λόγων, κἂν ᾖ διειλεγμένος ἐπὶ μέρους· οὕτω γὰρ καὶ
πολλοὺς ἐξέσται τὸν ἕνα ποιεῖν. ὁμοίως δὲ καὶ ἐν ῥητορικοῖς   5
ἐπὶ τῶν ἐνθυμημάτων. αὐτὸν δ' ὅτι μάλιστα φεύγειν ἐπὶ
τὸ καθόλου φέρειν τοὺς συλλογισμούς. ἀεί τε δεῖ σκοπεῖν τοὺς
λόγους, εἰ ἐπὶ πλειόνων διαλέγονται· πάντες γὰρ οἱ ἐν μέρει
καὶ καθόλου διειλεγμένοι εἰσί, καὶ ἔνεστιν ἐν τοῖς κατὰ μέρος
ἡ τοῦ καθόλου ἀπόδειξις διὰ τὸ μὴ εἶναι συλλογίσασθαι   10
μηδὲν ἄνευ τῶν καθόλου.

Τὴν δὲ γυμνασίαν ἀποδοτέον τῶν μὲν ἐπακτικῶν πρὸς
νέον, τῶν δὲ συλλογιστικῶν πρὸς ἔμπειρον. πειρατέον τε
λαμβάνειν παρὰ μὲν τῶν συλλογιστικῶν τὰς προτάσεις,
παρὰ δὲ τῶν ἐπακτικῶν τὰς παραβολάς· ἐν τούτῳ γὰρ   15
ἑκάτεροι γεγυμνασμένοι εἰσίν. ὅλως δὲ ἐκ τοῦ γυμνάζεσθαι
διαλεγόμενον πειρατέον ἀποφέρεσθαι ἢ συλλογισμὸν περί
τινος ἢ λύσιν ἢ πρότασιν ἢ ἔνστασιν, ἢ εἰ ὀρθῶς τις ἤρετο
ἢ εἰ μὴ ὀρθῶς, ἢ αὐτὸς ἢ ἕτερος, καὶ παρὰ τί ἑκάτερον.
ἐκ τούτων γὰρ ἡ δύναμις, τὸ δὲ γυμνάζεσθαι δυνάμεως   164b
χάριν, καὶ μάλιστα περὶ τὰς προτάσεις καὶ ἐνστάσεις· ἔστι
γὰρ ὡς ἁπλῶς εἰπεῖν διαλεκτικὸς ὁ προτατικὸς καὶ ἐνστα-
τικός. ἔστι δὲ τὸ μὲν προτείνεσθαι ἓν ποιεῖν τὰ πλείω (δεῖ

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b35 εἴη δ' ἂν τὸ τοιοῦτον edd. : τοιοῦτον δ' ἂν εἴη forsan | b37 οἳ : οἱ edd. | δύνανται : om.
edd. | 164a8 πλειόνων : κοινῶν edd. | a9 τοῖς : τῇ edd. | a13 τε B : δὲ BᵏWSʷR | a15 τούτῳ
WSʷRB : τούτοις Bᵏ |

b31 πρὸς ὡρισμένας αδχ : προαρισμένας γ | ὡρισμένας αὐτὰς φΛλ : ὡρισμένα αὐτὰ Ψ?C | βλέπειν αδχ
: ἀποβλέπειν γ | κατ' ἀριθμὸν αδΛλ : καὶ ἀριθμοῦ γ : om. Ψ | b32 ἢ λόγον εἰς βΛλ Aᴵ[586.23-24] : εἰς
λόγον ἢ εἰς αΨ | b34 ἔτι αδχ Aᴵ[587.8] : ἔτι τε γ | b35 εἴη δ' ἂν τὸ τοιοῦτον αγC : τοιοῦτον δ' ἂν εἴη δΛλ
| b36 ἀφισταίη αγ : ἀφίσταται eSDC? [κ: ἀφίσταιτο Rμ : ἀφίσταιτο φΛΨ²λ | b36 δυνατοὶ φΛΨ²λ
: δυσκολώτατος Ψ¹? | b37 οἳ αδκDν Aᴵ[587.19] : οἱ Ce : οἷον γ [S] | πάσχειν δύνανται φκDu Aᴵ[587.20]
: πάσχειν S?Cce | πάσχειν : hic desinit codex S | 164a1 οὐκ φλ : μὴ Aᶜ[587.23] | a5 ἐξέσται αδχ : ἔξεστι
γ | a6 ἐπὶ φΛDe : om. ΨCν | a8 λόγους αγγ : συλλογισμοὺς δ | πλειόνων ΑγεΛε : κοινῶν PΨDCν, cf.
Aᴾ[588.21-aP: καθόλου] : πλειόνων κοινῶν B Aᴵ[588.18-aP] | οἱ αδλ : om. γ [Λ] | a9 καὶ¹ φλ : om. κ | τοῖς
δχ : τῇ αγ | a9-10 μέρος ἡ αγΡΛλ : μερή ε | a11 τῶν φΨλ : τοῦ Λ | a12 ἀποδοτέον αγΡχ : ἐπενεκτέον ε |
a13-14 τε λαμβάνειν αΛ : δὲ λαμβάνειν ΡΨ?λ : ἐκλαμβάνειν γ : δὲ ἐκλαμβάνειν ε : τε ἐκλαμβάνειν C | a15
παραβολὰς αδχ : προσβολὰς γ | a17 διαλεγόμενον αγεΛCμ Aᴵ[588.25] : διαλεγομένους PD | ἀποφέρεσθαι
αδΛDCe : ἀποφαίνεσθαι γν | ἢ αγΡΛCμ : om. eD | περί αγPhΛDCce : παρὰ iu | a19 ἑκάτερον αδ Aᴾ[589.4]
: ἑκάτερος γχ | 164b1 δύναμις : post hoc desinit codex i | b2 καὶ² α Aᴵ[589.8-ABD] : καὶ τὰς βΨλ : ἢ τὰς
Aᴵ[589.8-aP] | b3 προτατικὸς Bχ : προτακτικὸς β [A] | b4 ἓν ποιεῖν φΛCν : ἐμποιεῖν De |

5 γὰρ ἓν ὅλως ληφθῆναι πρὸς ὃ ὁ λόγος), τὸ δ’ ἐνίστασθαι τὸ
ἓν πολλά· ἢ γὰρ διαιρεῖ ἢ ἀναιρεῖ, τὸ μὲν διδοὺς τὸ δὲ οὒ
τῶν προτεινομένων.

Οὐχ ἅπαντι δὲ διαλεκτέον, οὐδὲ πρὸς τὸν τυχόντα
γυμναστέον. ἀνάγκη γὰρ πρὸς ἐνίους φαύλους γίνεσθαι τοὺς
10 λόγους· πρὸς γὰρ τὸν πάντως πειρώμενον φαίνεσθαι δια-
φεύγειν δίκαιον μὲν πάντως πειρᾶσθαι συλλογίζεσθαι, οὐκ εὔ-
σχημον δέ. διόπερ οὐ δεῖ συνεστάναι εὐχερῶς πρὸς τοὺς τυ-
χόντας· ἀνάγκη γὰρ πονηρολογίαν συμβαίνειν· καὶ γὰρ οἱ
γυμναζόμενοι ἀδυνατοῦσιν ἀπέχεσθαι τοῦ διαλέγεσθαι
15 ἀγωνιστικῶς.

Δεῖ δὲ καὶ πεποιημένους ἔχειν λόγους πρὸς τὰ τοιαῦτα
ἐν οἷς ἐλαχίστων εὐπορήσαντες πρὸς πλεῖστα χρησί-
μους ἕξομεν· οὗτοι δὲ εἰσὶν οἱ καθόλου καὶ
πρὸς οὓς πορίζεσθαι χαλεπὸν ἐκ τοῦ παρὰ πόδας.

164b5 ἓν ὅλως WS^wRB : ἐν ὅλῳ B^k | b11 συλλογίσεσθαι : συλλογίσασθαι edd. | b14
διαλέγεσθαι R : διαλέγεσθαι μὴ B^kWS^wB | b17 ἐν : τῶν προβλημάτων ἐν edd. | b19 πρὸς οὓς
πορίζεσθαι B^kWS^wB : οὓς προσπορίζεσθαι R | χαλεπόν : χαλεπώτερον edd. | τοῦ : τῶν edd. |

b5 ἓν ὅλως αγκ : ἐν ὅλῳ δλ | b7 τῶν προτεινομένων αδΨ?λ : διδοὺς τῶν προτεινομένων ΛC :
διδοὺς τὸν προτεινόμενον γ | b10 πάντως αδχ A^p[589.22] : πάντων γ | πειρώμενον φαίνεσθαι αδχ :
φαίνεσθαι πειρώμενον γ | b11 συλλογίζεσθαι βλ A^p[589.24] : συλλογίσασθαι α | b12 συνεστάναι
αδλ : συνίστασθαι γ | b14 διαλέγεσθαι βκ : διαλέγεσθαι μὴ αλ | b17 ἐν Ψ A^p[590.20-aP] : τῶν
προβλημάτων ἐν αδλ A^p[590.12] : τῶν ἐρωτήσεων ἐν γΛ : προτάσεων ἐν A^p[590.20-ABD] |
εὐπορήσαντες αδχ A^c[590.15] : εὐπορησομένους καὶ γ | πρὸς φDν : πρὸς τὰ Ce | b19 χαλεπόν
βχ A^p[590.16-17, 21] : χαλεπώτερον α | τοῦ βλ A^c[590.17] : τῶν α [Λ] |

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