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Are the Eleatic arguments sophistical according to Aristotle?

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Abstract: This paper investigates whether the Eleatic arguments, in particular the demonstration of monism, were considered as sophistical fallacies by Aristotle. I first show that the Eleatics, in particular Melissus and Zeno, are mentioned more often than any other thinker in the *Sophistical Refutations*. However, when he analyses the argument for monism and Zeno's paradoxes, Aristotle does not describe nor criticise them as logical fallacies, but he rather indicates that those thinkers lacked the proper distinctions that would allow them to discuss the subject properly. I then examine whether those arguments may be considered as eristic fallacies in the sense of some incorrect use of principles within a science, and finally examine the kind of historical connection Aristotle may have seen between the Eleatics and the sophists.

The sophists play a major role in Plato's works, whether as characters in the dialogues, as defenders of specific theses like relativism or immoralism, or as a topic of discussion, in particular in the *Sophist*. On the opposite, while giving a major role to the examination of the thought of his predecessors, Aristotle shows much less interest in the sophists. The main treatise where he appears to deal with them is the *Sophistical Refutations* (*SR*). But just as Plato's *Sophist*, the *SR* are not dealing with individual sophists: while Plato tries to establish what a sophist in general is, but only refers once *en passant* to a specific sophist, i.e. Protagoras (232d9), Aristotle investigates not so much the nature of the sophist's occupation, but rather the kind of reasoning that is associated to him, which he calls, often in an undifferentiated manner, sophisms, eristic arguments or fallacies.¹

In so doing, Aristotle presents many examples of fallacies, both to develop his taxonomy and to show how one may solve their difficulties. But it is remarkable that historical sophists rarely appear.² By contrast, the Eleatics, in particular Parmenides's followers Melissus and Zeno, are mentioned more often than any other thinker, as we shall see in my first section. This

¹ We find those various expressions used in the *SR*: 'sophistical refutations' (the treatise starts with *περὶ τῶν σοφιστικῶν ἐλέγχων*, an expression that gave it its name), 'eristic reasoning' or 'refutation' (*ἐριστικός*, in particular in chapter 2), 'paralogism' (*παραλογισμός*, which we may translate with 'fallacy'), 'apparent reasoning' or 'refutation' (*συλλογισμὸς καὶ ἔλεγχος φαινόμενος*, for example in 165a18-19). Aristotle sometimes distinguishes between those various types (for example in 171b25-27), but he most often uses them as synonyms: see Schreiber 2003, 173-76 and Lemaire 2021.

² Cf. Dorion 1995, 32–37 for an analysis of the few passages where the sophists are mentioned. He shows that in almost none of them does Aristotle blame the sophists for one of the fallacies that are described in the *SR*.

is quite unexpected, since Aristotle usually seems to regard the Eleatics as worthy philosophers, whose main default was to rely too much on deductive arguments without taking the appearances into consideration,³ not to produce sophistical fallacies.

In this paper, after examining, in a first section, the association of the Eleatics with sophistic or eristic reasoning, within or outside the *SR*, I shall focus on one specific argument i.e. the demonstration of monism, and examine whether Aristotle regarded it as a case of sophistical fallacy. I will show that he does not blame them directly for a fallacy by homonymy (section 2), but rather indicates that they did not possess the proper conceptual tools to make the appropriate distinctions (section 3). I will then apply this analysis to the criticism of Zeno's paradoxes (section 4). In section 5, I will examine another meaning of "eristic", which refers to incorrect scientific demonstrations, and wonder whether the Eleatic arguments could be considered as this kind of fallacy. I will conclude on the reason why Aristotle associated the Eleatics with sophistical refutations.

1. Association Between the Eleatics and Sophistical Fallacies

In the *SR*, Parmenides is mentioned by name only once, but Melissus and Zeno respectively three times. Those two are the most quoted authors in the treatise: in comparison, Antiphon, Protagoras and Thrasymachus are mentioned once, Bryson, Gorgias and Socrates twice. If one regards the *SR* as a part of the *Topics*⁴ and takes the two treatises into consideration, since Zeno and Melissus are named once each in the *Topics*, that makes four references to them, the same number as Socrates, Plato and Xenocrates; again, those are the most quoted authors. From the sheer point of view of statistics, on the quite limited number of thinkers that are directly named, the Eleatics are overrepresented: 9 of the 41 references to other thinkers in the two works, and 7 on 21 in the *SR* alone.⁵ We shall also see that there are passages where, even though the Eleatics are not named, they are still clearly targeted, in particular when Aristotle discusses the ambiguity of the words 'being' and 'one' (section 2).

Outside of the *SR*, it is remarkable that the Eleatics are often blamed for their fallacies which characterisations that imply that their reasoning is incorrect in a sophistical or eristic

³ This is particularly the case in *Gen. corr.* I.8 325a13-15: 'It is from those arguments that, leaving out and despising sense perception on the idea that one should follow the argument, they say that the whole is one and unmoved.' See also *Cael.* III.1 298b17-24 and *Metaph.* A.5 986b31-34.

⁴ For the arguments *pro* and *contra* of this reading, see Fait 2007, LII-LIII.

⁵ I only take into consideration here people who are mentioned for their thought (including Homer), but not as examples, like Coriscus.

way. At the beginning of *Physics* I.2 (see T6 and its analysis in section 3), Aristotle assimilates Parmenides' and Melissus' reasoning to an 'eristic' argument, because it assumes false premises and its deduction is invalid. Immediately after, he claims that 'Melissus' argument is ruder (φορτικός) and raises no issue, but once one absurdity is given, the rest follows: that is not difficult' (185a10-12).⁶ He also characterises his arguments as a 'paralogism' in *Physics* I.3 186a10-11. Similarly, as we shall see in section 4, Zeno's paradoxes are described as 'paralogisms' in *Physics* VI.9.

This idea that the Eleatic reasoning is particularly 'rude' finds echoes in other passages. The adjective φορτικός is associated with Zeno in *Metaph.* B.4 1001b14 to characterise his theory of the infinite divisibility of bodies.⁷ Aristotle also claims in *Metaphysics* A.5 986b26-27 that Xenophanes and Melissus are more vulgar (ἀγροικότεροι) than Parmenides, for the reason that they did not take the appearances into consideration. In no other passage does he attribute this adjective to a thinker. In *Ph.* I.8, when criticising those who reject the possibility of generation, he says that they lost their way due to their 'lack of experience' (ἀπειρία, 191a26-27); even though he does not mention the Eleatics explicitly, he considers that this group of thinkers reached the conclusion that everything is one, which indicates that they constitute his main target.⁸

There is a difference, however, between claiming that a thinker is a bit rude or makes mistakes due to his lack of experience and that his arguments are sophistical or eristic. Indeed, not every error in reasoning is a sophistical fallacy, but those are arguments that produce a deceptive appearance of correctness, either because their premises appear acceptable (or endoxic) without being so, or because the reasoning appears to be valid when it is not, i.e. when the conclusion does not follow from the premises.⁹ But, as Aristotle claims in *Top.* VIII.12, there are four ways for an argument to be 'false': if its deduction is only apparent (which is the eristic argument), if it does not reach the appropriate conclusion, if it does not assume premises that are appropriate to the subject,¹⁰ and if its premises are false. Dialectical arguments, since they do not rely on the true principles of science but on endoxic premises, may be false in the sense of having false premises, without being eristic.

⁶ All translations are mine. The same text is repeated in *Ph.* I.3 186a8-10. Most editors delete one of the occurrences.

⁷ This term is only used in two other texts to refer to the thought of other thinkers (as opposed to a social class or a general trait of character), in both cases because of their monist theory of the mind (*De an.* I.2 405b2 and *Part. an.* II.7 652b8).

⁸ Cf. Brémond 2017, 45–47.

⁹ *Top.* I.1 100b23-101a4, *SR* 2 165b7-8

¹⁰ I will discuss this kind of error in section 5.

Does Aristotle consider the Eleatic arguments as cases not only of false arguments, but of eristic ones? The answer may depend on the argument in question. Melissus is quoted three times in the *SR* for the same reason, i.e. his argument according to which if being is eternal, it is also unlimited.¹¹ According to Aristotle, this argument is a clear example of a fallacy through the consequent, because Melissus would claim that if what came to be is limited, what did not come to be is unlimited.¹²

But of the three mentions of Zeno in the *SR*, two appear to be rather anecdotal: in *SR* 11 172a8-9, when discussing the fallacy in which one uses principles that are not proper to a science, Aristotle gives as an example the argument that one should not take a walk after eating because Zeno showed that movement is impossible. And in *SR* 24 179b17-23, he illustrates his thesis that in order to solve a sophistical refutation, it is not enough to show that the conclusion is false, by referring to Zeno's paradoxes, which one should not reject by simply saying that movement is actually possible. In both those passages, Zeno himself is not blamed for a fallacy. But I shall focus on the third passage, where Zeno is mentioned together with Parmenides and Aristotle examines the main Eleatic claim, i.e. that being is one. If the argument for monism is a sophistical fallacy, that would justify a negative judgement on the whole Eleatic thought.

2. A Fallacy by Homonymy?

The passage that interests me appears in a section dedicated to homonymy, i.e. the fallacy that rests on an ambiguity of the terms, as opposed to amphiboly, which rests on an ambiguity of construction.¹³ Aristotle claims that some cases of homonymy are particularly difficult to solve, with the example of the words 'one' and 'being', and adds:

T1. Some consider that 'being' and 'one' have the same meaning, while others solve Zeno's and Parmenides's argument by claiming that 'one' and 'being' are said in many ways (*SR* 33 182b25-27).

Does Aristotle attribute the fallacy based on homonymy to the Eleatics? The text appears to avoid this accusation: rather than characterising them as those who fail to make the distinction

¹¹ In *SR* 5 167b12-17, 6 168b33-169a3 and 28 181a23-30.

¹² For an analysis of these passages, see Brémond 2017, 31–33.

¹³ Owen 1986, 263 rightfully distinguishes homonymy, which indicates that a word has several distinct meanings, from ambiguity: homonymous words do not necessarily generate ambiguity, since the context often clearly indicates the proper meaning, and ambiguity can arise without the help of homonymous words, as in the case of amphiboly. In the *SR*, however, Aristotle calls 'homonymy' the specific case where homonymy leads to ambiguity.

between the various meanings of ‘being’ and ‘one’, he regards them as those whose arguments one might solve by distinguishing those meanings. I think that this nuanced approach is revealing of Aristotle’s judgement on the Eleatics: he does not blame them directly for making sophisticated fallacies, but shows that their difficulties can be solved in the same way as a sophisticated homonymy, i.e. by making distinctions. This will appear if we consider the other passages where he discusses the argument for monism.

Aristotle also deals with the question of the ambiguity of ‘being’ and ‘one’ in *SR* 10:

T2. ‘Being’ or ‘one’, for example, have several meanings, but the answerer and the questioner [Zeno] may both think, when they talk, that those words only have one meaning, and the argument is that everything is one (*SR* 10 170b21-24).

The Greek manuscripts include the name of Zeno to characterise the questioner, but most editors delete it as a gloss. If one follows them, Aristotle would not refer to the Eleatics directly, but only mention a dialectical examination where both answerer and questioner would assume that being only has one meaning and conclude that ‘everything is one’. Even though it is unlikely that Parmenides or Zeno could be the actors of this dialectical contest, the kind of reasoning that is developed here, i.e. an argument for monism that rests on the idea that ‘being’ and ‘one’ only have one meaning, is typically Eleatic, as we shall see more precisely further on.

Aristotle does not present the Eleatic argument as an example of fallacy in this text either: he actually uses it to contest a taxonomy of sophisticated arguments that distinguishes between those that rely on words and those that rely on thought. For in this particular case, if both the answerer and the questioner agree that being only has one meaning, they do not only agree on the word ‘being’, but they also have the same thought, i.e. that it only has one meaning. Therefore, a fallacy that rests on an ambiguous word also supposes that the interlocutor has a certain thought.

One could still say that the argument rests on the ambiguity of ‘being’ and ‘one’, and Aristotle indeed underlines that those terms are ambiguous and a source of fallacy by homonymy. But do the Eleatics themselves commit this error? Let us look at the first two examples of fallacy by homonymy that are presented in *SR* 4:

1. Those who know understand ($\mu\alpha\nu\theta\acute{\alpha}\nu\omicron\upsilon\sigma\iota\nu$) what is dictated to them; hence it is those who know that learn ($\mu\alpha\nu\theta\acute{\alpha}\nu\omicron\upsilon\sigma\iota\nu$) (165b31-2).
2. What must happen ($\tau\grave{\alpha}$ δέοντα) is good, evil is something that must happen, hence evil is good (165b34-35).

We may formalise the second argument as a *modus ponens* syllogism.

1. What must happen is good (A is B)
2. Evil must happen (C is A)
3. Hence, evil is good (C is B)

King 2013, 195-96 takes the fallacy to come from the acceptance of a premise that is not endoxic: it would appear to be acceptable, but it is not. In this case, one should reject either premise 1. or premise 2. (or both) because they are ambiguous. Therefore, the argument would fall into the kind of sophistic reasoning that is based on an only apparently acceptable premise.

I would rather, however, follow the twofold analysis of Kirwan 1979, 35–37:

1. Either one considers that the ambiguous term ‘must happen’ has the same meaning in the two premises. Then, depending on the meaning one lends to ‘must happen’, one of the premises is false: it means either ‘profitable’, in which case premise 1. is true but premise 2. is false, or ‘inevitable’, in which case premise 1. is false and premise 2. is true. The false premise only superficially looks true because one did not define the terms properly.
2. Or one considers that the ambiguous term has two different meanings, in which case the deduction is invalid. The argument would only look like a *modus ponens* but, if one distinguishes A¹ as what must happen in the sense of being profitable and A² as what must happen in the sense of being inevitable, the reasoning takes the following (incorrect) form:
 - a. A¹ is B
 - b. C is A²
 - c. Hence C is B.

Therefore, depending on the way in which one interprets the ambiguous term, the reasoning is either eristic because of its premises or because of its lack of validity.¹⁴

May the Eleatic argument be solved in this way? For this analysis to apply to their reasoning, ‘being’ should not only be an ambiguous term, but it should potentially have a different meaning along the reasoning. Our texts from the *SR* do not give any indication as to the content or structure of the argument itself,¹⁵ but the issue is discussed in *Ph.* I.2-3, where Aristotle analyses and refutes the Eleatic argument for monism. His most developed presentation of the argument appears in the following text:

¹⁴ See a similar analysis in Schreiber 2003, 24–25.

¹⁵ Aubenque 2017, 122, n. 4 reconstitutes the following argument from T2: ‘Every being is one, everything is a being; hence everything is one’. But there is no textual basis for this reconstruction.

T3. And one solves [Parmenides’s argument] by showing that it is both false and inconclusive. False because he holds the premise that being is said absolutely, while it is said in many ways, and inconclusive because, if we supposed that there are only white things, even if ‘white’ only had one meaning, white things would still be many and not one. (*Ph.* I.3 186a23-27)

According to this passage, Parmenides’s reasoning would have the following (non-syllogistic) form:

1. There is only being.¹⁶
2. Being only means one thing.
3. Hence, being is one.¹⁷

For the reasoning to be fallacious according to homonymy, ‘being’ should have a different meaning along the reasoning. But even though the second premise supposes that ‘being only has one meaning’, as we shall see, Aristotle does not seem to consider that ‘being’ would mean for example ‘substance’ in premise 1 and ‘quality’ in the conclusion.

In *Physics* I.2, Aristotle pretends to solve the Eleatic argument for monism, attributed to Parmenides and Melissus, by distinguishing meanings of ‘one’ and ‘being’. One should note, however, that he never blames the Eleatics for being guilty of a fallacy by homonymy:

T4. The most appropriate start of all, since ‘being’ is said in many ways, is to ask: in what sense do they say that all things are one? Are all things substance or quantity or quality? And then are all things one single substance, for example one man, one horse or one soul, or a quality that is one, for example white, hot or something similar? For all these are very different and impossible to claim. (*Ph.* I.2 185a20-27)

In this text, Aristotle assumes that contrarily to what the Eleatics claimed, ‘being’ has several meanings (which appear to correspond to the Aristotelian categories), and that one should ‘ask’ them which one of those meanings they consider as the only meaning of ‘being’.¹⁸ The presupposition appears to be not that the Eleatics are using several meanings of ‘being’ at the same time, but that they did not specify which one of those meanings they were referring to.

¹⁶ In *Metaph.* A.5 986b28-30, Aristotle insists on this premise, which he formulates more precisely as ‘there is no not-being beside being’.

¹⁷ See a similar reconstruction in Fait 2007, 144-45 and Castelli 2018, 87.

¹⁸ Clarke 2018, 66–67 denies that this passage asks for a disambiguation of ‘being’ and understands that Aristotle does not claim that being has several meanings, but that there are several ways to be, without the word to be ambiguous. If it were the case, Aristotle would have radically changed his mind between the *SR*, where ‘being’ is clearly taken as a typical homonymous word, and the *Physics*. Cf. Quarantotto 2019, 95, n. 19.

Aristotle's discussion consists then in showing that, whatever meaning they had in mind when referring to 'being', it cannot be one. But his criticism, as we shall see more precisely in the next section, does not follow the recommendations Aristotle presents in *SR* 19 in order to solve a fallacy by homonymy. According to him, if the homonymous term is in the conclusion, one should indicate that it does not have the same meaning as in the premises and that the argument is then invalid. And if the homonymous term only appears in the premises, one should specify in each case in what sense the premise is true and in what other it is false: for example, when asked whether it is true that 'evil must happen', one should say that it is true if 'must happen' means 'is unavoidable', but false if it means 'is profitable'. We do not find this kind of criticism in *Physics* I.2-3.

There is, of course, some homonymy in the argument as I reconstituted it, not in its structure but in the content of the second premise, i.e. that being only means one thing. This premise is, according to Aristotle, false, since in reality being is said in many ways, but as already mentioned, it is not enough for a premise to be false for a demonstration to be eristic, but it has to be deceptive, in the sense that it appears to be endoxic, i.e. accepted by all or most people or experts, when it actually is not. It is quite unclear by what criterium Aristotle distinguishes the endoxic views from the apparently endoxic ones.¹⁹ But concerning being, Aristotle would probably regard the idea that being only has one meaning as a truly endoxic view. For, according to him, most thinkers before him did not distinguish the various meanings of being, precisely because this distinction is so difficult to make: his predecessors, from the Eleatics to the atomists and sophists, and potentially even to Plato, considered 'being' and 'one' as univocal.²⁰ Hence, if most philosophers considered that being only means one thing, that would be an endoxic premise, since endoxic claims are defined as the opinion either of all or most people, or of all or most of those who have authority in the matter.

3. The Eleatic Error

Even if we may not blame the Eleatics for a fallacy by homonymy, it remains that their reasoning is presented as non-deductive (*ἀσυλλόγιστος* in *Physics* I.2 185a10), which is characteristic of an apparent reasoning (*Top.* I.1 101a1-4, *SR* 6 168a21). For a true reasoning

¹⁹ On this topic, see King 2013.

²⁰ This appears clearly in *Ph.* I.2 185b27-32 and even more in *Ph.* I.3 187a1-6, where Aristotle blames his predecessors for accepting the Eleatic argument and concluding that not-being must have some kind of existence. Critics disagree on the identity of the thinkers that are targeted, in particular whether they are the atomists or the Platonists, but Aristotle is probably targeting both: cf. Castelli 2018, 101-2.

has to be valid. What makes the Eleatic reasoning invalid? Let us now focus on the way in which Aristotle criticises their arguments.

In *Ph.* I.2, he examines the various meanings the Eleatics could have attributed to ‘being’ and ‘one’ and shows that an issue arises in each case: for example, whether ‘one’ means ‘continuous’, ‘indivisible’ or ‘one in account’, it is impossible to claim that being is one. One of his approaches consists in showing that the kind of monism under consideration is incompatible with other Eleatic claims, in particular that being is spatially extended.²¹ This kind of refutation is typical of a dialectical examination, and does not indicate that the Eleatics committed any logical fallacy, only that they are incoherent. Another kind of criticism implies that they did not take into consideration some scientific assumption that makes their claim impossible, for example that qualities cannot exist without a substance,²² or that a continuous being is necessarily divisible and therefore many.²³ In this case, the invalidity of the reasoning is not due to an issue in the structure but to the lack of proper analysis of the topic under discussion.

We may find elements that confirm this reading in Aristotle’s criticism of Parmenides’s reasoning in *Ph.* I.3, in what directly follows T3:

T5. For to be is different for the white and for what receives it. And nothing will be separate from the white, since it is not as separate but in their being that the white is something else than that to which it belongs. But Parmenides did not understand that yet (*Ph.* I.3 186a28-31).

The issue, according to Aristotle, is that Parmenides did not ‘understand yet’ the difference between a substrate and its property. What he says about the white applies to being in general: the property of being is different from the thing that has it. Hence, even if we say that there is only being, there are at least two things, the thing that has the property of being and the property of being itself.²⁴ After this first criticism, Aristotle specifies that Parmenides should have claimed that being means ‘what precisely is’ (ὅπερ ὄν), and develops an answer to this hypothesis, but he does not consider that it is a claim Parmenides himself supported.

Parmenides’s fault may be considered, again, as a lack of distinction between two meanings of ‘being’, the one that refers to a property and the one that refers to the thing that has this property. But one cannot claim that Parmenides uses ‘being’ with different meanings in

²¹ 185a32-b5 and 185b15-19.

²² 185a29-32.

²³ 185b7-16.

²⁴ Cf. Quarantotto 2019, 97–98.

his reasoning, as it happens in a demonstration by homonymy, but Aristotle blames him for not grasping the inherent multiplicity that every being must have inasmuch as it has properties, even if the property in question is ‘being’ itself. The ‘yet’ (οὐπω) indicates that it is not just Parmenides who failed to understand this, but that this more precise analysis of being was not developed yet, and Aristotle most probably considers that he was the first one who made the proper distinctions on this topic.

Parmenides’s invalid reasoning is then not so much based on a logical mistake than in the lack of the conceptual tools that would allow him to discuss his topic properly. This analysis finds confirmation in *Ph.* I.8 where, as already mentioned, Aristotle claims that the Eleatic reasoning according to which, since being cannot come to be from itself nor from not-being, it is eternal, reflects the ‘lack of experience’ (ἀπειρία in 191a26-27) of its authors. Because they did not make the proper distinctions (in this case, between in itself/by accident and potentiality/actuality), their ignorance (ἄγνοια in 191b11) led them to present incorrect demonstrations.

The experience needed to solve those philosophical issues clearly differs from the one that is required to avoid sophistical fallacies. For to examine those fallacies (which is the role of dialectics, and its subgenre peirastics), as Aristotle underlines in *SR* 11, one does not need the knowledge of any particular science, but only of common principles (τὰ κοινά).²⁵ But in the case of the difficulties encountered by the Eleatics, a proper knowledge of the nature of being and of several distinctions that are the object of first philosophy is required. Therefore, the invalidity of the Eleatic reasoning is not due to a sophistical fallacy but to a philosophical or scientific one, and its solution does not consist in revealing the faulty structure of the reasoning but in introducing some distinctions that are proper to the object of investigation.

However, as already mentioned, at the beginning of *Ph.* I.2, Aristotle appears to characterise the Eleatic reasoning as eristic. Let us have a closer look at the text:

T6. And investigating whether it is one in this way is similar to discussing dialectically any other thesis of those who argue for the sake of argument (like the Heraclitean thesis or if someone says that being is a single man) or to resolving an eristic argument like the one that is in both Melissus’s and Parmenides’s discourses. For these [arguments] both assume false premises and are invalid. (*Ph.* I.2 185a5-10)

²⁵ Cf. *SR* 11 171b6-7, 172a11-13, 172a21-30.

Aristotle's claim here is that examining the Eleatic argument is 'similar to' (ὅμοιον) examining a thesis that is defended for the sake of it, or that solving Parmenides's and Melissus's argument is 'like' (ὅπερ) solving an eristic argument. We shall see in section 5 that there may be some reasons to consider the Eleatic argument as eristic in another sense, i.e. because it does not rely on the proper principles of science, and Aristotle may have this other meaning in mind here too. But the kind of eristics that is described here, in which the premises are false and the deduction is not valid, is the one we have examined so far.

I think that the lexicon of similitude is important here: just as the Eleatics are compared to people who talk for the sake of talking, but it is unlikely that Aristotle considered Parmenides as this kind of person, the solution to their argument is similar to the one to an eristic argument, but it does not mean that the argument is eristic. A first reason why Aristotle may not want to call the Eleatics directly 'eristics' might simply be because their intents are truth-oriented. For the eristics are precisely people who argue for the sake of arguing, their only aim being to refute their adversary.²⁶ But Aristotle does not just characterise the sophistical or eristic arguments based on the intent of their authors, but on issues in their structure. And, in my view, the Eleatic argument does not qualify as eristic: its premises are certainly false, but not fallacious. But even though the fallacy is not sophistical, Aristotle claims (in particular in T1 and T4) that one may solve the issues they raise by disambiguating the various meanings of 'being' and 'one' and seeing that, whatever meaning they attributed to those words, one cannot reach the conclusion that being is one. Hence, even though their argument is not *stricto sensu* a fallacy by homonymy, the solution to it is the same as for an eristic argument, i.e. in making some distinctions. But those technical distinctions do not belong to the realm of dialectics, but of science.

4. Zeno's Paradoxes Against Movement

I will now show, to confirm my analyses, that they also apply to Aristotle's criticism of Zeno's paradoxes against movement. Let us first examine the passage in *Ph.* VI.2:

T7. This is why Zeno's argument assumes false premises, i.e. that it is impossible to cross things that are unlimited or to touch them individually within a limited time. For length and time and in general everything that is

²⁶ Cf. Crubellier 2019, 64 and Quarantotto 2019, 91, n. 7.

continuous are said to be unlimited in two ways, according to division or as to their extremities. (*Ph.* VI.2 233a21-26)

Just as in the case of the argument concerning being, Zeno's argument rests on a false premise and can be solved by distinguishing between two kinds of infinite: according to division and according to extension.

The analysis is not exactly the same as the one concerning monism, though. For first, Zeno's false premise is not that 'infinite' only has one meaning, but rather that it is impossible to cross something that is unlimited. And he assumes it because he did not distinguish between two meanings of 'infinite': it is true that one cannot cross in a finite time something that is unlimited in extension, but this is not the case for something that is unlimited in division. One could even reconstitute an argument that rests on homonymy by distinguishing I¹ as 'infinite in extension' and I² as 'infinite in division':

1. What is continuous is infinite (I²)
2. What is infinite (I¹) cannot be crossed
3. Hence, it is impossible to cross what is continuous.

On this argument, Zeno would indeed use the term 'infinite' in two different meanings, which would make his argument fallacious by homonymy.

I do not think, however, that Aristotle would consider Zeno's argument as sophistical. For the knowledge of the difference between those two meanings of 'infinite' is not common, but supposes some physical investigation, which Aristotle himself develops at some length in *Ph.* VI.2. Again, Zeno's error is rather due to his ignorance of the nature of the infinite than to a logical error. Which is why Aristotle rejects his argument, just as it was the case for the argument against monism, not in the way of a fallacy by homonymy but by exposing the real nature of the infinite.

It appears even more clearly in Aristotle's analysis of Zeno's four paradoxes in *Physics* VI.9 that the issue with Zeno's reasoning is a matter of physics, not of logic. After saying that the arguments of the dichotomy and of Achilles were already solved in VI.2, Aristotle examines the arguments of the arrow and the stadium. He claims that they constitute a 'paralogism', a term used both for the case of the arrow (239b5) and the stadium (240a2). But the issue clearly rests on a false physical assumption: in the case of the arrow, that time is composed by instants (239b31-32), and in the one of the stadium, that one measures the distances in the same way from the point of view of something that is unmoved and of something in motion (240a1-4). It appears here that 'paralogism' does necessarily refer to

sophistical arguments, even if it is often the case in the *SR*:²⁷ Zeno's error does not lie in an invalid structure, but in incorrect physical assumptions.

5. Non-Eristic Paralogisms

Aristotle gives a place to the kind of fallacies that I characterised as 'philosophical' or 'scientific' rather than 'sophistical' in the *Organon*. In *Top.* I.1 101a5-17, after distinguishing scientific, dialectical and eristic reasoning, he presents another kind of fallacy:

T8. Moreover, beside all the above-mentioned deductions, there are the paralogisms that come from principles that are proper to some science, as it happens in geometry or disciplines of the same kind. For this type appears to differ from the previously mentioned deductions, since the one who uses false diagrams does not deduce from true and first premises, nor from endoxic ones, (...) but he makes his deduction from assumptions that are proper to the science but not true. (*Top.* I.1 105a5-15).

This kind of paralogism appears when the discussion is not common, contrarily to the dialectical or eristic ones, but specific to a particular science. Aristotle focusses here on the case of the *pseudepigraphos*, the geometer who makes incorrect figures for his demonstration. In *SR* 11 171b7-18, he considers that some of those paralogisms are still eristic, while others are not, and uses the example of the squaring of the circle: some, like Hippocrates's, would be incorrect but not eristic, while Bryson's and Antiphon's squaring would be eristic.²⁸ The difference seems to rely on two criteria: one is the intent, since the first ones are made by geometers who try to solve the issue, the others are eristic in the sense of looking for victory. But the other criterium is that the first ones use principles that are proper to the science in question (geometry), the others use common principles: Aristotle's clearest example of this kind of eristic is, as already mentioned, the claim that one should not take a walk after eating because, as Zeno showed, movement is impossible. In this case, one presents a medical reasoning without relying on the proper principles of medicine, one of which being that movement exists.

To which category do the Eleatic arguments belong? As we saw, Zeno's arguments are presented as 'paralogisms'. Concerning the intent, nothing in Aristotle's discourse indicates that

²⁷ Cf. n. 1.

²⁸ For an explanation of those various kinds of squaring, see Dorion 1995, 283–85.

Zeno only developed his paradoxes for the sake of winning an argument.²⁹ Concerning the nature of his principles, they do not appear as common, but they are specific to physics, even if they happen to be false, probably because of Zeno's lack of experience in the physical matters. Therefore, I think that Aristotle would consider Zeno's paralogisms as a case of non-eristic paralogism.

The issue is more complex concerning the Eleatic argument for monism. For in *Ph.* I.2, Aristotle underlines that their principles are not proper to physics, since physics, which deals with natural objects in movement, supposes that there are many objects in movement:

T9. Now, investigating whether being is one and unmoved is not investigating nature. For just as the geometer has nothing to say to one who rejects his principles, but it is the task of another science or a science common to all, so it is for the one who studies principles. (*Ph.* I.2 184b25-185a3)

Moreover, he later compares the approach of the Eleatics to Antiphon's squaring of the circle (185a16-17), which constituted, as we just saw, an example of eristic paralogism.

I think that indeed, Aristotle may blame the Eleatics for this kind of paralogism, insofar as they applied to physics some reasoning that is not specific to physics, and even incompatible with it. In *Cael.* III.1 298b17-24, he claims that they did so because they thought that there was nothing beside the sensible realm. But this does not completely invalidate their thought, which, according to Aristotle 'belongs to an examination that is different and prior to physics' (298b20), i.e. first philosophy.³⁰ Therefore, if one considers the Eleatic argument as physical, it may appear as the kind of eristic paralogism that is described in *SR* 11, because it applies to physics principles that are not proper to it. But if one regards it as metaphysical, as Aristotle appears to do in *Physics* I.2 and even more clearly in I.3, it is neither eristic in this sense, nor, as we saw, in the sense of an only apparent reasoning.

6. Eleatic Origin of Sophistical Fallacies

We saw that even though Aristotle mentions the Eleatics more often than anyone in the *SR* and appears to blame them for fallacies by homonymy, he actually considers that their errors

²⁹ We may find some elements for this kind of interpretation of Zeno in Plato's *Prm.*, where Zeno claims that he wrote his treatise by φιλονικία, 'love of victory'. But Plato still considered Zeno's approach as a serious, though juvenile, defence of Parmenides's thought.

³⁰ Cf. Ross 1936, 461.

rather lie in improper scientific assumptions and the lack of the appropriate distinctions that in a sophistical mistake. I suspect, however, that he often mentions them in the *SR* because he saw a historical connection between the Eleatics and the sophists similar to the one Plato develops in the *Sophist*. For even though he obviously did not regard the Eleatics as sophists, Plato still considered that Parmenides's reasoning, and in particular his rejection of the very possibility to think and talk about not-being, provided a hiding for the sophists, who could use these arguments to indicate that they could not say anything false. Similarly, Aristotle may have thought that the Eleatics, even though they did not produce themselves sophistical demonstrations, were responsible for the development of sophistical fallacies. Contrarily to Plato, he does not make this point explicit—the only indication being that in *Ph.* I.2 185b27-32, he claims that they influenced some thinkers like the sophist Lycophron into not using the verb 'is' anymore. But many of the fallacies that are attacked in the *SR*, like the lack of distinction between absolute and relative (*SR* 5 and 25), may stem from the Eleatic incorrect conception of being. And indeed, in his examples of such fallacies, Aristotle often mentions issues that come from an absolute use of the verb 'to be'. In particular, he evokes the sophistical argument according to which if not-being is thought, it is,³¹ argument which, according to Plato's *Sophist*, finds his justification in Parmenides's radical rejection of not-being.³² Hence, despite the fact that when he examines their arguments, Aristotle does not regard them as sophistical fallacies, he still probably kept in mind the connection his master tried to establish between all those who talked about being without making the proper distinctions.

Aubenque, P. 2017. *Le Problème de l'être chez Aristote: Essai sur la problématique aristotélicienne*. 6th ed. Quadrige. Paris: P.U.F.

Brémond, M. 2017. *Lectures de Mélissos*. Berlin: De Gruyter.

Castelli, L. 2018. 'Physics I.3'. In *Aristotle's Physics Book I*, ed. D. Quarantotto, 60–81. Cambridge: Cambridge University Press. doi:10.1017/9781108181853.004.

Clarke, T. 2018. 'Physics I.2'. In *Aristotle's Physics Book I*, ed. D. Quarantotto, 60–81. Cambridge: Cambridge University Press. doi:10.1017/9781108181853.004.

³¹ *SR* 5 161a1-2. It is interesting that this argument is followed by another example, i.e. that if something is not a man, it is not, which is referred to in T6 and characterised as comparable to the Eleatic argument that being is one.

³² *Soph.* 236e-237b.

Crubellier, M. 2019. 'Looking for a Starting-Point—The Eleatic Paradox Put to Good Use'. In *Aristotle's Physics Alpha. Proceedings of the 20th Symposium Aristotelicum*, eds. K. Ierodiakonou, P. Kalligas, and V. Karasmanis, 53–88. Oxford: Oxford University Press.

Dorion, L.-A. 1995. *Aristote. Les Réfutations sophistiques*. Paris/Laval: Vrin/Presses de l'Université Laval.

Fait, P. 2007. *Aristotele. Le confutazioni sofistiche: Organon VI*. Roma: Laterza.

King, C. G. 2013. 'False Ἐνδοξα and Fallacious Argumentation'. In *Fallacious Arguments in Ancient Philosophy*, eds. C. Rapp and P. S. Hasper, 185–99. Logical Analysis and History of Philosophy Special Issue 15. Münster: Mentis.

Kirwan, C. 1979. 'Aristotle and the So-Called Fallacy of Equivocation'. *The Philosophical Quarterly* 29 (114): 35–46. doi:10.2307/2219181.

Lemaire, J. 2021. 'Aristote et les arguments éristiques'. In *L'Éristique: définitions, caractérisations et historicité*, eds. S. Delcomminette and G. Lachance, 315–34. Cahiers de philosophie ancienne. Bruxelles: Ousia.

Owen, G. E. L. 1986. 'Aristotle on the Snares of Ontology'. In *Logic, Science, and Dialectic: Collected Papers in Greek Philosophy*, by G. E. L. Owen, ed. M. C. Nussbaum, 259–78. Ithaca: Cornell University Press.

Quarantotto, D. 2019. 'Towards the Principles — Resolving the Eleatics' Arguments for Absolute Monism'. In *Aristotle's Physics Alpha. Proceedings of the 20th Symposium Aristotelicum*, eds. K. Ierodiakonou, P. Kalligas, and V. Karasmanis, 89–123. Oxford: Oxford University Press.

Ross, W. D. 1936. *Aristotle's Physics*. Oxford: Clarendon Press.

Schreiber, S. G. 2003. *Aristotle on False Reasoning: Language and the World in the Sophistical Refutations*. Albany: State University of New York Press.