
Time and Space in Plato's *Parmenides*

Barbara M. SATTTLER

In this paper I investigate central temporal and spatial notions in the second part of Plato's *Parmenides* and argue that also these notions, and not only the metaphysical ones usually discussed in the literature, can be understood as a response to positions and problems put on the table by Parmenides and Zeno. Of the spatial notions examined in the dialogue, I look at the problems raised for possessing location and shape, while with respect to temporal notions, I focus on the discussion of 'being in time' and *exaiplhnês* (the latter notion will be shown to be also an important influence for Aristotle's *Physics*).

In displaying a paradoxical character and taking up crucial notions from Parmenides, the second part of the *Parmenides* seems to display some resemblance to Zeno's paradoxes. I will show, however, that in contrast to Zeno, the second part of Plato's *Parmenides* also demonstrates Parmenides' One to be problematic on its own terms. Furthermore, the dialogue presents not only important problems that these spatial and temporal notions seem to lead us into, but also establishes some positive features necessary to think of time and space. In this way, Plato's *Parmenides* can be seen as contributing to the development of temporal and spatial conceptualisations in ancient Greek thought.

1. Introduction

- 1 For people interested in time and space in ancient Greek thought, Plato's *Parmenides* offers a rich array of different temporal and spatial notions.¹ Some of

¹ There are important contributions to the understanding of time and space to be found in the *Parmenides*, which are also important for cosmology, and in this way this paper is also meant as a contribution to the original topic of the atelier – to the question whether there is a cosmology in

these notions and their discussions turned out to be important predecessors for conceptions developed in Aristotle's *Physics*,² and some can be seen as contributions to ongoing discussion about time and space raised by the Presocratics. This paper will look at the second part of the *Parmenides* as a contribution to a conversation about temporal and spatial notions started by the Eleatics. Such a perspective – Plato joining a conversation that was started by Parmenides and Zeno – is of course already suggested by the dramatic setting of the first part of the *Parmenides*: here young Socrates converses first with Zeno and then with Parmenides until Parmenides offers to demonstrate a dialectical exercise to him, using for this his own supposition of the One.³ The second part can then be understood, so the suggestion here, as extending the conversation, among other things,⁴ to topics concerning time and space that Parmenides' poem and Zeno's paradoxes had raised.⁵

Plato's *Parmenides*. Once we are not talking about a partless One as in the first deduction any longer, it may seem natural to understand reference to "the One" as talk about the ultimate one that is the cosmos. However, I do not see a cosmology at work in the *Parmenides*. So my ultimate answer to the question of the atelier will be that there is no cosmology in the *Parmenides*, but that but there are lots of temporal and spatial notions that are important for a cosmology.

² Owen (1986) has also seen Plato's *Parmenides* as an important predecessor for Aristotle's *Physics*, but for reasons contrary to mine: Owen tried to show that the *Parmenides* provided Aristotle not only with problems, but also "with the terminology and method of analysis that he uses for solving them" so that Aristotle's *Physics* should be seen in the dialectical context set at work in the *Parmenides* that is not strictly scientific. By contrast, what I want to show here is that in the midst of all the puzzles and *aporiai* of the second part of the *Parmenides*, there is also some positive outcome for our understanding of time and space that prepare important points for a science of motion in Aristotle's *Physics*, as, for example, the idea, that in order for something to be able to move, it has to have parts.

³ The first part of the *Parmenides* is also the first document we have where a book of Zeno is mentioned. Seeing the deductions as a discussion of Eleatic arguments is a perspective that has been frequently taken up by the scholarly literature; see Cornford (1939) as just one example. But the secondary literature usually focuses only on the metaphysical conversation between Plato and Parmenides, not on issues of time and space. And while Zeno's plurality paradoxes are often referred to in discussions of the first part, it is usually overlooked that his paradox of *topos* and of the arrow seem to be in the background of those passages in the second part I will be looking at.

⁴ Including, of course, important metaphysical topics.

⁵ There are also occasional references to Melissus and Gorgias. Coxon (1999) saw anticipation of Plato's reasoning in the *Parmenides* in the *Gorgias* (for example, pp. 131 ff.), and Brémond (2019) has recently argued that the conversation in the second part of the deduction is not so much with Zeno and Parmenides as with Melissus and Gorgias. However, even if Brémond is right that the result of the first deduction may remind us more of Melissus than of Parmenides, the way this result is achieved is, it seems to me, by questioning the assumption of a One that is essentially Parmenidean, as we will see (with the important exception of it being in time and space). It is then shown that, in contrast to what Parmenides tried to prove, the One has to be infinite, without shape, etc., if we take it literally that it is without any kind of parts. As for Gorgias, while he seems indeed to be in the background of some discussions, the basic structure of the deductions as

- 2 I will not commit myself that this is the best way to read the deductions, and I will be silent about any principles concerning the structure of the deductions in general. But I will suggest that such an interpretation makes several notions discussed in the second part intelligible and shows how their discussion in Plato's *Parmenides* develops existing problems that had been raised for natural philosophy. I will first look at the general relationship between the deductions in *Parmenides* and Plato as this already shows the closeness of Plato's discussion to *Parmenides*' poem. In this part, the notion of a whole will be especially in focus, as it is a particularly clear example of the way in which Plato deals with core notions of *Parmenides*. The main body of the paper will then concentrate on temporal and spatial notions and aims to show that also these can be best understood as an ongoing discussion with Eleatic ideas.
- 3 In my discussion of temporal and spatial notions, I will focus on the first and second deduction. While the results of these two deductions are usually seen to contradict or at least oppose each other,⁶ I will often look at the discussion of a certain notion in both deductions together. For independently of the role these discussions play for their respective deduction, there are a few general features of temporal and spatial notions that we can derive from looking at a particular notion in both deductions together.

2. Plato's Deductions in relation to *Parmenides*' Deductions

- 4 Scholars talk about "deductions" in *Parmenides*' poem – thus referring to his arguments for the different *sêmata* (features) in fragment 8 – as well as about "deductions" in the second part of Plato's *Parmenides*.⁷ On a standard count,

showing that *x* is *F* and non-*F* can already be found in *Zeno*. In the first deduction we also get the structure that the One is neither *F* nor non-*F*, which seems to be peculiar to *Gorgias*, as *Brémond* has pointed out. But this can be seen as a *Gorgian* variation of *Zeno*'s basic scheme (for differences between *Gorgias*' and Plato's versions of the basic structure we find in *Zeno* cf. below). If Plato had indeed seen the *Parmenides* as a conversation with *Melissus* and *Gorgias*, rather than with *Parmenides* and *Zeno*, we should expect him to bring *Melissus* and *Gorgias* into the dramatic setting (after all, Plato has written a dialogue before in which *Gorgias* does appear). And while both *Coxon* and *Brémond* see *Gorgias*' triad of showing Being (a) not to be, (b) not to be knowable, and (c) not to be communicable also in the first deduction of Plato's *Parmenides*, the end of this deduction to my mind only shows that the One cannot be, while the further inference that we "cannot have a word for it, nor a *logos*, nor *episteme*, *aisthêsis* or *doxa*", seems to be more of a general hint at further damaging consequences, than giving a clear threefold scheme.

⁶ Whether or not this opposition can eventually be dealt with by understanding the subjects of the two deductions as not being the same or as giving different perspectives.

⁷ For *Parmenides* cf., for example, *Palmer* (2016) and *Wedin* (2014) (who calls the introduction of the two paths of inquiry, into what is and into what is not, and the argument against the second path the "governing deduction", and the *sêmata* of Being in fragment 8 "deductive consequences");

there are eight deductions in the *Parmenides* showing what is the case for the One and others, if the One is or is not.⁸ While neither Parmenides nor Plato explicitly talk about deductions, I think that calling their respective arguments “deductions” can be justified in both cases; and that the arguments which are understood as Plato’s deductions are in fact some form of reply to Parmenides’ deductions in fr. 8.

- 5 In his *Sophist*, Plato provides us with a very complex and many-faceted discussion of main assumptions of Parmenides’ position. Plato deals with Parmenides on several levels there, some serious, some ironic: among other things, Plato provides explicit quotations from Parmenides’ poem, he discusses the possibility of a monistic position in general, and he investigates and develops Parmenides’ account of Being and non-Being.⁹ By contrast, we do not find explicit quotations of Parmenides’ poem in the *Parmenides* dialogue. But what we do find, or so I want to argue, is an explicit reception of the features (*sêmata*) of Being and supporting arguments from Parmenides’ fragment 8 in Plato’s deductions. Let us start by briefly looking at Parmenides’ poem then.
- 6 At the beginning of fragment 8, we are given a quick summary of the *sêmata* of Being, which is followed by deductive arguments for positing these features. The problem with the initial summary of the *sêmata* of Being is not only variations in the sources with respect to crucial notions, but also that it is not quite clear how far the summary actually extends. There is general agreement that it includes the characterisations in lines 3 to 4: Being (*eon*) is
 - (1) not generated (*agenêton*) and imperishable (*anôlethron*).
 - (2) whole and the only thing of its kind (*oulon mounogenes*).¹⁰

for Plato cf. Rickless (2007), p. 112 (in a chapter that is called “the first deduction”) and Allen (1983), especially pp. 185-188 (he understands the second part of the *Parmenides* as having four hypothesis, with all of them having two deductions, apart from the first, which has three deductions).

⁸ For the purpose of this paper it does not matter whether we divide the second part of Plato’s *Parmenides* into eight deductions, as is now standardly done, or into nine deductions, as we find it with most of the Neoplatonists.

⁹ Scholars have raised some doubts about Plato’s earnestness in dealing with Parmenides in the *Sophist*, for example, Brown, 1998, p. 185 understands Plato’s literal interpretation of Parmenides’ simile of the sphere as showing that Plato does not seriously attempt to understand Parmenides’ theory there. I think that the different forms of engagement with Parmenides show different forms of seriousness and accuracy – some are in fact dealing with Parmenides’ historic position, others deal with some form of monism or other; but I shall not be able to defend this assumption here.

¹⁰ This is the reading of Simplicius and others; it is singly of one kind (*mounon mounogenes*) according to Pseudo-Plutarch, or being one/the whole limb (*oulomeles*) according to Proclus; cf. Sattler (2011).

- (3) unshaken (*atremes*), which is taken up by *akinêton* in the third deduction.
 - (4) not to be completed (*éd' ateleston*).¹¹
- 7 Some scholars see this as the complete summary of the *sêmata* of Being and take the following two lines already as part of the deduction of the first *sêma*, that Being is not generated and imperishable.¹² Others, however, me among them, understand line five and parts of line six to introduce the following further *sêmata*:¹³
- (5) it never was, nor will be since it is now altogether (*oude pot' ên estai, epei nun estin homou pan*)
 - (6) one (*hen*)
 - (7) continuous (*syneches*).¹⁴
- 8 If we now look at the notions that are of central importance in Plato's deductions, focusing on deduction one and two, we immediately see important overlaps: it is investigated

whether the One

- I. is a whole/ possesses parts (137c-d; 142c-e)
- II. is one/many (137c-d; 142d-145a)
- III. possesses extension/shape/place (137d-138b; 145a-e)
- IV. is in motion/at rest (138b-139b; 145e-146a)
- V. is the same/different (*tauton/heteron*) (139b-e; 146a-147b)
- VI. similar/dissimilar (*homoion/anomoion*) (139e-140b; 147c-148d)
- VII. equal/unequal (*ison/anison*) to something (140b-d; 149d-151e)

¹¹ This is the reading according to Simplicius. It is perfect (*êde teleion*) according to Owen's emendation; not imperfect (*oud' ateleston*) according to Brandis' emendation; not generated (*éd' agenêton*) according to Plutarch, Clement, and Proclus, and complete (*êde teleston*) according to Covotti's emendation (cf. Tarán 1965, p. 93 for an argument why this Greek variant should be translated as complete rather than limited). I would agree with most editors that "not generated (*éd' agenêton*)" seems an unlikely *sêma* in a dense summary which has already mentioned 'uncreated' at the very beginning. Whichever of the remaining readings we choose, the basic idea is always that Being has to be something that is not lacking anything, thus it cannot be perfected or completed; this is also how this *sêma* is argued for in lines 26-33.

¹² So, for instance, Kirk, Raven, and Schofield (1983); Hölscher (1986); and Tarán (1965).

¹³ Cf., for example, Coxon (1986), pp. 196-197.

¹⁴ Parmenides' argument for completeness also employs the premise that Being is limited (fr. 8, lines 42-49; cf. also line 26); being limited or unlimited is a feature also prominently taken up in Plato's deductions, see 137d and 142d-145a.

- VIII. is in time (by being older, younger or the same age as something) (140e-141d; 151e-155c);

and how it

- IX. relates to existence and knowability (141d-142a;155c-e)
- 9 I will not be able to discuss any details of the relation between the central notions in Parmenides' poem and Plato's deductions in general here. Rather, I will have to restrict myself to one central notion as an example of the way in which Plato takes up core *sēmata* from Parmenides' poem – to the notion of being a whole. And also with respect to this notion, which has attracted a lot of attention in the literature on Plato's *Parmenides*, I will only be able to sketch a few rough strokes of the relationship between both works. We will come back to several other notions listed above when we look at the temporal and spatial concepts discussed in the *Parmenides*.
- 10 Parmenides claims that Being is *oulon mounogenes*, which I understand as 'whole and unique' (it is the only thing of its kind). So far, no parts have been mentioned, but the way the *sēma* of being a whole is taken up in its deduction is as being not *diatreton*, not divisible or divided (line 22), and this presumably means not divisible into parts.¹⁵ The idea that divisibility would undermine something's being one or whole is also found in one of Zeno's paradoxes of plurality:

καὶ ὁ Θεμιστιος δὲ τὸν Ζήνωνος λόγον ἐν εἶναι τὸ ὄν κατασκευάζειν φησὶν ἐκ τοῦ συνεχές τε αὐτὸ εἶναι καὶ ἀδιαίρετον “εἰ γὰρ διαιροῖτο, φησὶν, οὐδὲ ἔσται ἀκριβῶς ἐν διὰ τὴν ἐπ’ ἄπειρον τομὴν τῶν σωμάτων”.

And Themistius says that Zeno's argument tries to prove that what is, is one, from its being continuous and indivisible. “For” runs the argument, “if it were divided, it would not be one in the strict sense because of the infinite divisibility of bodies” (Simplicius 139.19; fragment 1 in Lee, Lee's translation).

- 11 Zeno's claim seems to rest on the background assumption that if we understand what-is to be divisible, it would have parts and thus be many and so not one in the strict sense. Hence, what-is would not only be one (whole), but also at the same time many (parts). This is, however, impossible, since being one and many are mutually exclusive notions for the Eleatics in general, as Zeno makes clear in fragment 8.¹⁶ Furthermore, if it were divisible, it would be infinitely divisible

¹⁵ The central premise for arguing that Being is not divisible is that it is homogeneous (*homoion*), another notion we will see to be important in Plato's *Parmenides*.

¹⁶ This fragment is reported to us in Philoponus and uses the example of Socrates being one and many that we find in the first part of the *Parmenides* dialogue. It seems highly likely to me that this example thus displays an anachronistic influence of Plato's *Parmenides* on the doxographic tradition of Zeno, and is not evidence that the historic Zeno had indeed come up with an example involving Socrates.

which would lead to parts that cannot be conceptualised in a consistent way, as Zeno points out in other fragments.¹⁷

- 12 Plato takes up this understanding of a partless whole in the first deduction where we are told that since the One cannot be many, it cannot have parts. In the first part of the dialogue, Socrates made it clear that there is no problem with him being one and yet having many parts; it would only be a problem if this happens with the Forms. But at the beginning of the first deduction, the interlocutors simply follow Parmenides' inference from the One's being not many to its not having any parts. This inference seems to be an Eleatic move here, or at least a move that is fitting Parmenides' understanding of the One so that the following discussion can be understood as also scrutinizing Parmenides' notion of the One (even if, in contrast to Parmenides' claim, this One is not understood as being outside of time and space).¹⁸ And indeed Plato immediately questions Parmenides' conception: if the One cannot have parts, it seems it cannot be a whole, since a whole is what is lacking no parts (137c7-8), which implies that a whole has to possess parts.
- 13 In the first deduction, the One is assumed to be without any parts in order not to be many. Not possessing parts seems to grant indivisibility, but also to have the unfortunate consequence that the One then cannot be a whole. By contrast, in the second deduction we are presented with a whole that possesses parts. This, however, seems to lead to the problem that this whole is all kinds of F and non-F simultaneously; it is F with respect to its many parts, and not-F with respect to its being one whole. The second deduction can hence be understood as the inverse to Zeno's plurality paradoxes: while Zeno's paradoxes are meant to show that if we assume there to be many things, they have to be F and non-F simultaneously, we are shown here that assuming a One leads to it being F and non-F simultaneously.
- 14 In this way, Plato's first and second deduction together present the central metaphysical concepts of whole and parts as problematic for the Eleatic tradition: Parmenides understand his One to be a whole without parts in order to avoid that the One is also many (parts). Plato's *Parmenides*, however, tries to show that we get into logical problems if we try to understand the One in the way Parmenides suggests and that we have to choose: either we understand the One as having no parts, but then it also cannot be a whole in any meaningful way, or we take the One to be a whole, but then it also possesses parts, which on an Eleatic understanding gives us only a weak sense of oneness as it simultaneously allows for plurality.

¹⁷ See, for example, fragment 2 in Lee, which Porphyry attributes to Parmenides, but Alexander and Simplicius consider to be more likely by Zeno, cf. also Lee p. 12.

¹⁸ For a defence of understanding Parmenides' Being as outside of time and space cf. Sattler (2011).

- 15 Part of the background problem here is that Parmenides in his poem never explicitly spells out how to understand being a whole.¹⁹ Parmenides makes a case for Being to be “*oulon*” by arguing for a specific version of being *oulon*, namely being not *diaireton*, divided or divisible, into parts. And this is justified by claiming that Being is all alike, not allowing for any difference as this would introduce non-Being, not being some x. So the whole Parmenides is envisioning is a whole that is not only independent of any parts, but in fact excludes parts and even the possibility of any parts. But it is never clarified to what extent we can think of it as a whole then, if it is neither the whole of parts nor a whole against other wholes (as there is only One). It might be called a whole in the sense of being complete, not missing anything, being in its entirety. But completeness and being a whole are listed as two different *sêmata* in fragment 8, line 4. Furthermore, Plato also raises the question in the deductions whether not missing anything does not mean not missing any part. While Parmenides’ poem left the notion of a whole indeterminate,²⁰ Plato’s deductions ask exactly for a clarification of the understanding of a whole.
- 16 What this discussion of the whole is meant to show here is that the deductions of Plato’s *Parmenides* can be read as intensive discussions of core notions of Parmenides’ metaphysics. Plato takes up the conception of a whole from Parmenides and puts pressure on clarifying it by asking whether we can indeed think of wholes without any assumption of parts. Similarly, in the course of his deductions, Plato takes up most of Parmenides main *sêmata* in one form or other, spells out their implications, and investigates further whether they can indeed be conceived in the way suggested by Parmenides.²¹

¹⁹ The problems with the Parmenidean notion of a whole are in part already pointed out in Plato’s *Sophist*, cf. 244c ff.

²⁰ Parmenides’ philosophy seems to allow for different senses of what can be understood by a “whole”, and, consequently, what might be understood by “parts” of a whole (if they were possible); possible part-whole relations are never specified. This ambiguity also allows Zeno implicitly to employ two mutually exclusive understandings of whole and part, which accounts for one aspect of the problems we get into with the first two paradoxes of motion, cf. Sattler (forthcoming), chapter 3.

²¹ We can understand this investigation as if Plato were to reply to Parmenides’ claims in the following way: Parmenides: “the One is a whole without parts”. Plato: “if you really deny that the One has any parts, it seems we cannot talk about a whole at all, since a whole is a whole of parts. And if we assume a whole in the sense of having parts, then, according to you, it seems we have a plurality”. Parmenides: “the One is like a sphere”. Plato: “the One cannot be a sphere, since what is a sphere has parts” (Plato takes Parmenides’ talk about the sphere literally in the *Parmenides*, as he does in the *Sophist*). Parmenides: “the One is limited”. Plato: “it cannot be limited, because then it would possess a beginning and an end and that means parts”.

For the last point we should keep in mind that also Zeno, like Plato here, understands limits as parts in his plurality paradoxes – an understanding against which Aristotle will argue.

- 17 But what does this tell us about temporal and spatial notions central for natural philosophy that are meant to be explored in this paper? Let us first have a brief look on the role they play in Parmenides' poem: On my reading of Parmenides, Parmenides' account of Being excludes all notions central for natural philosophy; very crudely put, his poem amounts to the claim "if you want to understand what truly is, Being – and that's the only thing of which knowledge is possible – then you have to exclude all the temporal and spatial differences, motion, and change that we are used to from the perceptible world; that is, get rid of all the notions that are central for natural philosophy".²²
- 18 By contrast, when Plato in his *Parmenides* takes up crucial notions from Parmenides metaphysical deductions, he also connects them with notions central for natural philosophy in his discussion. We may think this is a move rather similar to what Zeno does (at least if we follow Plato's interpretation of the aim of Zeno's paradoxes). For also Zeno investigates notions central for natural philosophy while connecting them closely with metaphysical notions prepared by Parmenides – in Zeno's case he thus wants to strengthen Parmenides' metaphysics by showing in some detail the problems these temporal and spatial notions raise.²³ Does Plato in his discussion of temporal and spatial notions also want to strengthen some (perhaps revised Parmenidean) metaphysics? Or is he trying to show that temporal and spatial notions are as problematic as the metaphysical notions we touched on already? Or, finally, may he perhaps even want to show that these notions are more coherent than the metaphysical ones we find in Parmenides?
- 19 I will try to answer this question at the end of the paper. In our investigation of the temporal and spatial notions used in Plato's *Parmenides* we will see that Plato takes up important notions not only from Zeno, but also from Parmenides. While Parmenides excludes temporal and spatial notions from his metaphysics explicitly, he uses in fact some temporal and spatial notions in his poem, not only in the cosmological part, which I will not have space to discuss here, but also in the *alêtheia* part of the poem. He uses them either in a metaphorical sense or in a sense that transforms their meaning in a way that they can be used for his metaphysics (we will see examples of both below). And these temporal and spatial notions are again taken up in Plato's deductions.
- 20 Let us now proceed to the main body of this paper and investigate some of the spatial and temporal notions Plato discusses in his *Parmenides*. As mentioned above, I will concentrate on the first two deductions in the following – the first deduction claims the One to be without any parts in order not to be many, while according to the second deduction, the One is a whole, but also has parts.

Understanding limits as parts may also have been one background reason for Melissus' claim that, in contrast to what Parmenides said, Being has to be unlimited (and thus without parts).

²² Cf. Sattler (2011) and (forthcoming), chapter 2 for a defence of this claim.

²³ I argue for this in detail in *The Concept of Motion in Ancient Greek Thought*, chapter 3.

3. Time

3.1. Being in time

- 21 “Being in time”, “being in *chronos*”, is a rather complex idea in the way it is discussed in Plato’s *Parmenides* in all its implications and I will only be able to look briefly at some of its aspects here, namely at (1) ‘being in time’ qua becoming older or younger, (2) its relation to tenses, and (3) the understanding of ‘now’ (*nun*) and its relation to ‘was’ and ‘will be’.

(1) Being in time qua becoming older or younger

- 22 The first deduction claims that the One cannot be in time (140e ff.). This is deduced from the previous result that the One can neither be similar nor dissimilar to something, nor equal nor unequal to something. Since the One can thus not participate in similarity/dissimilarity or equality/inequality (*homoiotêtos* or *isotêtos*) of *chronos*, it cannot be younger, older, or of the same age as something (140e-141a). For if A is of the same age as B, this means A has been around for an equal amount of time as B; and if A is older than B it has been around for a longer (and that means an unequal amount of) time than B.²⁴ But if the One cannot participate in any equality or inequality, it cannot be around for either an equal or an unequal amount of time as something, and thus cannot be younger, or older, or of the same age; and if it is neither younger, older, or of the same age, then this means that it is not in time (*chronos*), which would require it to become older and be older than something that is younger.
- 23 The following argument for the One not being in time is difficult to follow on a first reading, and part of the difficulty has to do with the way in which time is tied to relative terms here. I suggest to understand his argument in the following way: If the One were older (younger or the same age), it would have to be older *than* (or younger than or the same age as) *something*, since “being older” is a relative term, and thus needs a point of comparison, another relatum. But as we are dealing only with the One, we do not have any other relatum than itself, and so it would have to be older than itself (or younger than or the same age as itself). This also fits with Greek usage of reflexive pronouns, which allows to compare

²⁴ Cornford p. 127 takes the problem here to be that if the One were in time, statements involving the terms “same”, “different”, “equal”, “unequal” would be true of it, which have just been shown to be impossible. While he is right, that this is the problem how ‘being in time’ is first introduced (and it stays one of the problems discussed), Cornford does not take into account the additional, and even more puzzling, problems that are related to the fact that the temporal terms investigated are terms expressing relations (being younger, etc. expresses a relation between something that is not as old as something else), which we will see in the next paragraph.

something to itself in order to describe changes of a subject:²⁵ what we would express as “she is braver now than she used to be” could be phrased in Greek as “she is braver than herself”. The background to this expression may be something like this: if something becomes hotter, it needs to be hotter than it was before, for short: hotter than itself. While this is a peculiarity of the Greek language that seems to be in the background here, Plato clearly pushes such expressions further when he claims not only that somebody has become braver or richer than herself in time (in the sense that she is richer now than she was before), but also uses it for temporal changes itself, like growing older, so that the One has become older than itself.

- 24 Given that we have the same One as both relata in the comparison relation “older than”, we get to the paradoxical thought that it not only has to be older than itself (as there is no other point of reference available), but at the same time, seen as the other relatum, younger than itself.²⁶ It seems to be assumed here that the One is older (or is becoming older) not only vis-à-vis itself as it was earlier. Rather, for this relation to hold, there has to be something now in existence with respect to which it can become older, and so the One also has to be there now as being or becoming younger than the thing that is or becomes older. So the one would have to be older and younger than itself; and simultaneously the same age as itself.

²⁵ Coxon (1999) p.132-133 points out passages in Herodotus and Thucydides that give a similar phrasing of reflexive pronouns used with comparative and superlative adjectives in order to describe a change in character or riches; for example, the Persians at Salamis “were and became during this day far braver than themselves”, Herodotus, VIII, 86. However, Coxon interprets Plato’s usage of this peculiarity of the Greek language differently than I do in the main text.

²⁶ There are two main lines of interpretation in the literature for understanding Plato’s claim that that which comes to be older than itself simultaneously comes to be younger than itself: (1) the Neoplatonistic interpretation we find in Proclus ad locum understands this to be an expression of a cyclical way of participating in time where the same point is seen both as beginning and end of its motion in time. This allows Proclus to claim that in so far as what participates in time “departs from a beginning, it becomes older, whereas in so far as it arrives at an end, it becomes younger”. What departs from its beginning and moves towards its end is becoming older in so far as it moves towards its end; at the same time, it is also becoming younger, since its end is also its beginning, and coming closer to its own beginning again means becoming younger. This reading has the disadvantage of only working for a cyclical understanding of time which is not introduced anywhere in the *Parmenides* and which I do not think we find in the *Timaeus* either; and Cornford (1939), p. 128 has already pointed out that in the second deduction Plato seems to have a linear understanding of time. Furthermore, the understanding given in Proclus seems to mix up motion and time. (2) A second branch of scholarship understands this passage to work on the assumption that as something ages, its parts get constantly replaced, so that while a thing gets older every day, its parts get renewed and thus younger, cf., for example, (Allen) 1997, p. 242. Again, this reading makes a strong assumption – that everything is constantly replacing its parts – which we have no reason to assume in the dialogue. By contrast, the assumption in my reading is simply that there is only One being (and thus no other relatum), which we find explicitly in *Parmenides*’ poem and which is the sole focus in the passage looked at.

25 Deduction 1, after having shown the alleged absurdity of the One being in time, infers that the One is not in time. By contrast, deduction 2 infers that the One is in time, becomes older and younger than itself, and is of the same age as itself. While the two deductions differ thus in the consequences they draw for whether the One is in time, there are three general features that we can derive from this discussion for an understanding of being in time in both deductions that are independent of possible absurd consequences:

- I. In both deductions it is assumed that if the One is in *chronos*, it should become older (141a and 152a). Thus we see that being in time is tied to at least some minimal form of change, like becoming older (or younger).
- II. *Chronos* seems to allow for quantitative or qualitative characterisations, since we are told that being in time would mean participating either in *isotêtos* or in *homoiotêtos* of time. Plato presents both, a quantitative and qualitative characterisation of time, without deciding between the two in the following. Thus he leaves it open that both may be adequate in discussions about temporal notions.
- III. Time has an intimate relationship to relative terms. “Being in time” is introduced with the help of relative terms: being older, younger, or of the same age. And Plato’s usage of these relative terms displays two peculiarities:
 - a) Plato seems to treat “becoming older” and “becoming younger” as on the same footing – something either becomes older or younger. This does not square well with the way we think about the arrow of time, where things can only become older, but not younger. By contrast, Plato only points out that there is a direction in time, but it seems that for him there can be opposite directions, becoming older or younger, he does not restrict himself to the one direction we usually take to be the only possible one. We find the same idea in the *Timaeus*, when Timaeus attempts to exclude all forms of temporal succession from our account of the model by claiming that it neither becomes older nor younger (38a).
 - b) Plato talks not only of being older or younger, but also of ‘becoming’ older or younger (in 141b). Thus he is tying the relative terms to becoming. Accordingly, with time we do not only find terms expressing positions and relations in the way we find them with space (with being taller, or smaller, or of the same size, for example). But, in addition, they are also connect with processes that some temporal terms themselves seem to express (in *Timaeus* 38a Plato explicitly claims that “was” and “will be” refer

to motion, *kinêsis*).²⁷ If we try to understand these notions with the help of the modern way of ordering events according to the A-series (events being future, present or past – a position that changes) and B-series (events being earlier than or later than others – a position that always stays the same), “older than”, “younger than” and “of the same age” seem to start out as notions we would associate with the B-series, since if x is older than y, x will always stay older. However, the fact that Plato connects these notions with becoming may already point towards the A-series, which we definitively see at work when Plato ties the puzzles about being in time to the usage of tenses, to which we now turn.

(2) Tenses

- 26 In 141c Plato connects the discussion of time with the different tenses: if the One does not participate in *chronos*, then neither has it come to be at some point in the past nor is it coming to be now nor will it come to be at some point in the future; more precisely:

Εἰ ἄρα τὸ ἐν μηδαμῇ μηδενὸς μετέχει χρόνου, οὔτε ποτὲ γέγονεν οὔτ' ἐγίγνετο οὔτ' ἦν ποτέ, οὔτε νῦν γέγονεν οὔτε γίγνεται οὔτε ἔστιν, οὔτ' ἔπειτα γενήσεται οὔτε γενηθήσεται οὔτε ἔσται.

If the one does not participate in time in any way, it never had become, or was becoming, or was at any time, or has now become or is becoming or is, or will become, or will have become, or will be (141e3-7).

- 27 It seems the possibilities named in the quotation are the only ways how the One can participate in Being (taking into account all the different tenses we find in ancient Greek), either having become at some point in the past, being in the process of becoming right now, or bound to become at some point in the future. But if none of these tenses can be rightly attributed to the One, then, so the inference in the first deduction, it cannot be. And if it is not, we cannot have a name for it, nor a *logos*, nor *epistêmê*, *aisthêsis*, or *doxa*.
- 28 We see that Plato ties being to temporal being here,²⁸ since it seems to be the case that whenever we express some form of Being, we use a form of the verb “to be” in one of the tenses available, and thus we have to express it as being tied to time. Similarly, in the second deduction, where we are told that the One participates in

²⁷ We may think that “becoming bigger” or “becoming smaller” are equivalents on the spatial side, but some of the temporal terms express in themselves processes in a way that spatial terms do not, as we will see in a moment when we deal with tenses. In any case, we will see that there is no equivalent in Plato's discussion of spatial notions, which focus more on positions than on relations.

²⁸ We will see in a moment that tying Being to time goes against Parmenides' assumption in his poem.

chronos and is and becomes younger and older than itself and the other, and simultaneously is also neither younger nor older (151e ff), Being (*einai*) is captured as tied to time:

Τὸ δὲ εἶναι ἄλλο τί ἐστὶν ἢ μέθεξις οὐσίας μετὰ χρόνου τοῦ παρόντος,
ὥσπερ τὸ ἦν μετὰ τοῦ παρεληλυθότος καὶ αὖ τὸ ἔσται μετὰ τοῦ
μέλλοντος οὐσίας ἐστὶ κοινωνία;

Is “to be” (*einai*) something else than participation in being (*ousia*) in the present time, just as “was” is participation in being in past time, and “will be” in future time? (151e7-152a2).

- 29 Here being is tied to being in time: since the One partakes of being, it partakes of time. The passage quoted also makes it clear that ‘was’, ‘is’, and ‘will be’ are treated as on the same footing. And we will see in the next section that also the now (*nun*) is treated as expressing the present tense on a par with ‘was’ and ‘will be’ in the first and in the second deduction.

(3) Now (*nun*) and its relationship to “was” and “will be”

- 30 In Parmenides’ poem, the *nun* has a special status vis-à-vis the other forms of time:

οὐδέ ποτ’ ἦν οὐδ’ ἔσται, ἐπεὶ νῦν ἔστιν ὁμοῦ πᾶν,
ἔν, συνεχές

neither was it nor will it be, since it is now all together, one,
continuous (fr. 8, 5-6a).

- 31 Being “now all together, one, continuous” is named as the reason why ‘was’ and ‘will be’ cannot be truly said of Parmenides’ Being. What was and will be seem to be the things belonging to what the mortals assume on their way of *doxa*, as well as what we deal with in our everyday world. These things are spread out temporally, they are extended in time: they were there in (some part of) the past and will be there in (some part of) the future. The temporal realm of the world of becoming is divided into was and will be. By contrast, what truly is, is not subject to these temporal differences, at least not in the same way. For it is “now all together”. *Eon* is *now* – this can be understood either as indicating atemporality, being beyond time;²⁹ or as indicating some present that we can never address as past or future.³⁰ In both cases, ‘now’ cannot be temporally extended if it is to be

²⁹ So G.L.E. Owen (1966); similarly Alexander Mourelatos (2008), pp.105-107. On this understanding it finds a famous echo in Plato’s *Timaeus*.

³⁰ So Eduard Zeller (1919), p. 690 and Coxon (1986) p. 196 who understands it as “total coexistence in the present”. And it needs to be a present that has neither come into being nor will pass away, since Parmenides argues against generation for the *alêtheia* path.

strictly distinguished from 'was' and 'will be', otherwise there will be a time when it would be right to say of it that it was or that it will be.³¹

- 32 Similarly, in Plato's *Timaeus* the present tense 'is' is reserved for true Being, the eternal model, that is not tied to time and completely separate from Becoming; so that whatever has come into being or will come into being is not rightly said 'to be' in the present tense.
- 33 In contrast to this special understanding of the present tense in the *Timaeus* and to the way Parmenides deals with the *nun* in his poem, in Plato's *Parmenides* the present time and the *nun* do not seem to have any special status or distinction with respect to the other forms of time, as we can see, for example, from passages like 141e.³² In spite of being on the same footing as 'was' and 'will be', however, the now also has a very special tie to Being, as is made clear in the second deduction of the *Parmenides*. For the second deduction points out that the One has to move from the before to the after through the now (152b ff.); and when it is in the now, it has to *stop becoming* (older or younger) and *is* (older or younger). Thus, the now also has a special status, since whenever the One is F, this happens in the now (before it was only becoming, now it is F, 152e). This understanding of the now, however, does not seem to be related so much to Parmenides' understanding of the now as what is beyond the flow of was and will be. Rather, it seems to be akin to an understanding of the now as we find it in Zeno's arrow paradox, where motion (like everything that happens) has to take place in the now.³³
- 34 A more radical transformation of a seemingly temporal notion in such a way that this notion is in fact separated from the temporal realm can be found in Plato's

³¹ Some scholars have also read *nun* in Parmenides' poem as indicating eternal temporal duration – Tarán (1965), p. 179 argues for this third possibility, similarly also Schofield (1970), Gallop (1984), p. 15, and Palmer (2009). These scholars read "neither was it nor will it be, since it is now" as a denial that Being ever was in the sense of having perished and that Being ever will be in the sense that it is yet to be born. However, such an understanding is hardly a natural reading of the Greek and requires a lot of background assumptions for which the reader is not at all prepared at this point in the poem: how should a reader ever get to the assumption that "neither was it" should be read as "it never was in the sense of having perished" from what has gone on in the poem so far? Moreover, endless duration would have been much more easily expressed as "it is, and always (*aei*) was, and always will be" than by excluding 'was' and 'will be' and seems to fit Melissus' account more than the one of Parmenides. For a more extensive discussion of this interpretation cf. Sattler (2019).

³² In 155d and 164b it is seen as part of a series with *pote* and *eipeita*, once and later. These two notions interestingly oscillate between what we would call the A-series and the B-series of time, and accordingly we find translations, such as Cornford's, understanding it as "past" and "future", and others, such as Schleiermacher's, taking it to mean "vorher" and "nachher".

³³ For a discussion of the arrow paradox and its understanding of the now cf. Sattler (forthcoming), chapter 3.

Parmenides if we now look at another notion, that is often grouped together with Plato's understanding of the now, namely at the notion of *exaiφhnês*.

3.2. *Exaiφhnês*

- 35 Perhaps the most prominent temporal notion discussed in the second part of Plato's *Parmenides* is the notion of *exaiφhnês*. What is often understood as the appendix to deduction 2 or to deduction 1 and 2,³⁴ namely 155e–157b, focuses on this notion. *Exaiφhnês* is usually translated as “instant” or “moment”, but importantly it also includes the connotation of suddenness, unexpectedness. Plato uses it here in order to sketch a central problem in natural philosophy – namely how we can think of the transition from motion or change to rest, or from being F to not being F, or from Being to Not-Being. I will concentrate on the case of motion and rest. It seems clear that if something is moving, it is not resting and if something is resting it is not moving, but yet when then is it changing from motion to rest? It cannot change from motion to rest when it is in motion, for then it has not yet changed, nor when it is at rest, for then it has already changed (156c-d). But if at any point in time it is either in motion or at rest, when can this change take place?
- 36 Arguably the most prominent version of this problem we encounter in Aristotle's *Physics*, in his discussion of the beginning and end of a continuous motion. Atomists can easily talk about a first and a last part of time, space, or motion. By contrast, if we understand time, space, and motion as continua, as Aristotle does, they are always further divisible and accordingly do not possess a first or last part. Of a motion, there is no last moment when something is still in motion nor a first point of something having moved. If we look at the transition from motion to rest, we find that whichever interval close to the finishing point we may choose, there will always be a smaller one closer to it. And similarly for the transition from rest to motion:³⁵

φανερὸν τοίνυν ὅτι οὐκ ἔστιν ἐν ᾧ πρῶτῳ μεταβέβληκεν. ἄπειροι γὰρ αἱ διαιρέσεις. οὐδὲ δὴ τοῦ μεταβεβληκότος ἔστιν τι πρῶτον ὃ μεταβέβληκεν. [...] ὅτι μὲν οὖν οὔτε τοῦ μεταβάλλοντος οὔτ' ἐν ᾧ μεταβάλλει χρόνῳ πρῶτον οὐθέν ἐστιν, φανερόν ἐκ τῶν εἰρημένων. [...] τρία γὰρ ἐστιν ἃ λέγεται κατὰ τὴν μεταβολήν, τό τε μεταβάλλον καὶ ἐν ᾧ καὶ εἰς ὃ μεταβάλλει, [...] ὅσον ἐν τοῖς μεγέθεσιν. ἔστω γὰρ τὸ ἐφ' ᾧ AB

³⁴ Cornford (1939) p. 194 and Coxen (1999) p. 153 consider it a part of deduction 2; Rickless (2016) as an appendix to 1 and 2, and the Neoplatonists have mainly seen it as a separate, third deduction (so that we get nine deductions overall; cf. Plotinus, *Enneads* V, 1, 8 and Proclus 1040, 1ff. and 1053, 17f.); cf. also Meinwald (1991), chapter 6.

³⁵ For a detailed discussion of the problems of transition see *Physics* book VI, chapter 5 and following. Cf. also Wieland (1962), p. 310-313, Strobach (1998), p. 55ff., Sorabji (1983), chapter 26, Kretzmann (1976), and Lear (1981), p. 103, n.10.

μέγεθος, κεινήσθω δ' ἐκ τοῦ Β εἰς τὸ Γ πρῶτον. οὐκοῦν εἰ μὲν ἀδιαίρετον ἔσται τὸ ΒΓ, ἀμερὲς ἀμεροῦς ἔσται ἐχόμενον· εἰ δὲ διαίρετόν, ἔσται τι τοῦ Γ πρότερον, εἰς δὲ μεταβέβληκεν, κάκεινον πάλιν ἄλλο, καὶ αἰεὶ οὕτως διὰ τὸ μηδέποτε ὑπολείπειν τὴν διαίρεσιν. ὥστ' οὐκ ἔσται πρῶτον εἰς δὲ μεταβέβληκεν.

It is evident, then that there isn't anything in which first something has changed,³⁶ for the divisions are infinite. So, too, of that which has changed there is no primary part that has changed. [...] It is evident, then, from what has been said, that neither of that which changes nor of the time in which it changes is there any primary part. [...] in a process of change we may distinguish three terms – that which changes, that in which it changes, and the actual subject of change [...] Take the case of magnitudes: let AB be a magnitude, and suppose that a motion has taken place from B to a primary 'where' G. Then if BG is taken to be indivisible, two things without parts will have to be contiguous (which is impossible): if on the other hand it is taken to be divisible, there will be something prior to G to which the thing moved has changed, and something else again prior to that, and so on to infinity, because the process of division may be continued without end. Thus there can be no primary 'where' to which a thing has changed (236a26–236b16, translation by Hardie and Gaye with modifications).

- 37 Since motion, time, spatial magnitude, and the thing moving are all continuous and thus infinitely divisible for Aristotle, there cannot be a first or last point of any of them.³⁷ The passage just quoted points out that there is no *primary* part of change. And we find the same difficulty with determining an end point of a change, the coming to a standstill of a locomotion and the beginning of rest taken up later in the *Physics* (238b36–239a22). If we look at a motion from A to B, we cannot determine a first instant of motion taking place after A – for whichever point after A we chose, there will be another point closer to A – nor a last instant of motion taking place just before B.
- 38 Plato's discussion of the *exaiφnês* in the *Parmenides* interestingly presents not only a discussion of the problem how to think of the transition from motion to rest, but also a particular solution how such a shift of motion to rest can be thought of. For Plato, nothing can change immediately from rest to motion, since

³⁶ We are here talking about the impossibility of a first part of movement in which something has already changed while still being in the process of movement. Hardie and Gaye probably added "with reference to the beginning of change" in the first sentence of their translation (which I have taken out here since it does not refer to anything in the Greek) in order to indicate this focus. For a detailed discussion of this passage cf. Sattler (forthcoming), chapter 7.

³⁷ Thus it is not possible to say at which point a motion comes to a standstill. However, Aristotle thinks there is a point when we can say that no motion or change is going on any longer.

motion and rest are contradictories,³⁸ and changes seem to be thought of as continuous processes, at least to some degree.³⁹ Accordingly, with the occurrence of motion, rest must have already ceased to be, since contradictories can in no way admit their opposite, i.e., they have to be strictly separate.⁴⁰ The transition from movement to rest, from one contradictory opposite to the other, therefore has to be conceived of in a way that preserves this separation. Plato's solution in the *Parmenides* is to have this transition happen at an instant (*exaiφhnés*) that neither belongs to rest nor motion, but rather is 'between' both. This means that an instant is not a part of time, since at any part in time things are either in motion or at rest. This idea we also find it in Aristotle's account of *nun* where the now is seen as a limit of time, in contrast to a part. But with Plato, the *exaiφhnés* it is also outside of time and not in time at all: it is μηδ' ἐν ἐνὶ χρόνῳ (156c3) and ἐν οὐδενὶ χρόνῳ (156e6), and ἐν χρόνῳ οὐδενὶ οὐσα in 156e1.⁴¹ For Plato, motion and rest are thus clearly separated with the help of something that is in between movement and rest and is neither the one nor the other.

- 39 The *exaiφhnés* seems to be indivisible and without extension – a notion that will be important for the way in which Aristotle thinks about a limit. It is in between motion and rest, and the only point that does not separate motion from motion or rest from rest.
- 40 But does this discussion of *exaiφhnés* relate to the Eleatics? We do not have a Zenonian paradox that deals with the transition from motion to rest, but it seems like a rather natural extension, a very Zeno like topic that could be worked into a paradox, perhaps following along the lines of 156c-d: if something moves and then rests, it needs to change between motion and rest. But when does it do so? Neither can it change from motion to rest while it is moving, since then it is still moving, nor can it change from motion to rest while it is already resting, since then it is already resting. Thus what changes from motion to rest cannot change from motion to rest.
- 41 What is more, Plato can actually use the way Parmenides treats the now as a conceptual basis for the *exaiφhnés* and develop it further in a way that ultimately

³⁸ For Aristotle some things are neither in motion nor at rest, as for example, the unmoved mover – since he does not have the potential for motion, he also cannot be at rest. By contrast, for Plato everything seems to be either in motion or at rest. At least the *Phaedo* (78b-79b) and the *Sophist* suggest that even the Forms are unchanging and at rest and that motion and rest exclude each other completely (*Sophist* 250a determines motion and rest as *enantiôtata*, and 252d makes it clear that they cannot associate in any form but completely exclude each other). Accordingly, we are dealing with exhaustive and exclusive opposites, and hence contradictory opposites.

³⁹ See Plato's *Parmenides* 156c and 153c.

⁴⁰ Cf., e.g., Plato's conception of contradictories in the *Phaedo*, 105d-105e.

⁴¹ Cf. also *Parmenides* 156d and Coxon 1999 p. 151.

also became fruitful for natural philosophy. In *Parmenides* we saw in fr. 8, 5-6a that the now is clearly marked as being not simply part of the series “was and will be”, but rather as something different, outside this series.⁴² We saw that in the *Parmenides* Plato uses ‘now’ (*nun*) as on a par with ‘was’ and ‘will be’, in contrast to *Parmenides*. But he seems to employ *Parmenides*’ idea that something usually related to time or to fulfilling a temporal function may also be used to show that something is beyond or outside of time with his notion of *exaiphnés*.

4. Space

⁴² With respect to spatial notions, we will look at two points discussed in the *Parmenides*,⁴³ at the problems that are raised by the notion of shape and the assumption of place.

4.1. Troubles with Shape

⁴³ The most powerful spatial image in *Parmenides*’ poem is the image of the homogenous, limited sphere. *Parmenides* very clearly introduces it as an analogy, and specifically as an analogy that shows the homogeneity and completeness of Being: *like* (*enalgkion*) the bulk of a well-rounded sphere, Being is everywhere complete and homogeneous (fr. 8, line 43). Plato, however, takes this image literally in his discussion of *Parmenides* in the *Sophist*. And also here in the *Parmenides*, a literal understanding of this image seems to be in the background, when Plato puts forth the challenge to explain how something that has no parts can still be limited.

⁴⁴ In the first deduction, 137d ff. we are told that if the one does not have parts, it cannot have a beginning, middle and end, since these would be parts. From this claim about the necessary lack of such spatial parts, it is inferred that the One (a) is unlimited and (b) can have no shape: since beginning and end are the limits of something, if something cannot have a beginning or end, it needs to be *apeiron*, unlimited. Nor can it have any shape, since the basic shapes (or the components of all shapes), the round and the straight, both presuppose some form of limit or part – round is that “whose limits are equidistant in every direction from the middle” (137e), while straight is defined as “that whose middle stands before the two limits”.

⁴⁵ Parts are understood here in a spatial sense. But apart from this specification, we see that we face a rather loose notion of parts, which seems to include everything spatial that is dependent on or belongs to a whole, without just being the whole,

⁴² For the scholarly debate on this point see footnotes 28-30.

⁴³ I have to leave out here discussions that are related to other spatial notions, such as the discussion of touching in 148e ff.

thus also limits.⁴⁴ By contrast, Aristotle in his *Physics* will draw a clear distinction between parts and limits.⁴⁵

- 46 Parmenides' idea that the One is limited (fr. 8, lines 26 and 42), seems to have been given up by Melissus in fragment 6, where Melissus claims that the One has to be unlimited, for otherwise it would be limited by something, another Being or void.⁴⁶ And since there is only one Being, and no void, the One cannot be limited by something else and thus has to be unlimited.⁴⁷ Plato seems to reinforce this move by Melissus, by putting pressure on the conceptualisation of a finite whole from a different angle – by questioning whether a limited One can really be thought without the assumption of any parts. Given that a clear distinction between limits and parts is not to be found before Aristotle, this seems a pertinent question.⁴⁸
- 47 In the second deduction, where the One is assumed to be a whole that has parts (144e ff.), the One can be understood as being limited.⁴⁹ And as limited, it has beginning, middle, and end (otherwise it would not be a whole) as well as shape, either straight or round. One problem that this understanding of the One raises is how we can think of its place; and problems with place are what we now turn to.

4.2. Problems with place

- 48 While Plato presents us with a detailed discussion of the problem of location, of *being in something* in a spatial sense, Plato does not talk about *topos*, but only

⁴⁴ Thus, it is inferred from the fact that the One is without parts, that it has to be without limits (as parts are the limits of each thing), and if without limits, then it is unlimited and cannot have shape (*schéma*). Cf. also Cornford (1939) p. 116: “The term ‘part’ [...] covers any and every diversity of aspect or character”.

⁴⁵ In contrast to limits, parts can measure out the whole for Aristotle, cf. *Physics* book IV, chapter 10 where he introduces this distinction for temporal parts and limits; from his discussion in book VI it becomes clear that the same distinction also holds for spatial parts.

⁴⁶ Melissus seems to take up Parmenides' notion of a whole *qua* intact in fragment 9 when he argues against parts. Understanding Being as having to be without any limits, however, proposes a different notion of a whole in the sense that there is nothing, neither Being nor void, outside it – a whole *qua* being all there is.

⁴⁷ Cornford (1939) p. 118 thinks we have to distinguish between Melissus' claim that the One Being is unlimited in extent, from Plato's merely negative claim here that the One cannot have any limit (without this allowing for unlimited extent, since “any sort of extent implies distinguishable parts”).

⁴⁸ Both Plato and Melissus seem to understand the one Being as physical here and the limits discussed hence as physical limits. By contrast, Parmenides' One has often been interpreted as something merely intelligible (cf. Sattler (2011) for a defence of such a reading). Accordingly, the limit discussed in his poem would not be a physical limit, but rather indicate that Being is determined or, as Owen (1960) p. 65 has suggested, “the mark of invariance”, of constancy.

⁴⁹ It has *perata* and *eschata* – the two terms also Aristotle uses in his *Physics* in the discussion of the wholes that are continua.

about being in (*en*) something, about somewhere (*pou*) and nowhere (*oudamou*). In the first deduction, 138a-b, we are told that the One cannot be in something else nor in itself:

Καὶ μὴν τοιοῦτόν γε ὄν οὐδαμοῦ ἂν εἴη· οὔτε γὰρ ἐν ἄλλῳ οὔτε ἐν ἑαυτῷ εἴη. — Πῶς δὴ; — Ἐν ἄλλῳ μὲν ὄν κύκλῳ που ἂν περιέχοιτο ὕπ' ἐκείνου ἐν ᾧ ἐνείη, καὶ πολλαχοῦ ἂν αὐτοῦ ἄπτοιτο πολλοῖς· τοῦ δὲ ἐνός τε καὶ ἀμεροῦς καὶ κύκλου μὴ μετέχοντος ἀδύνατον πολλαχῆ κύκλῳ ἄπτεσθαι. — Ἀδύνατον. — Ἀλλὰ μὴν αὐτό γε ἐν ἑαυτῷ ὄν κἂν ἑαυτῷ εἴη περιέχον οὐκ ἄλλο ἢ αὐτό, εἴπερ καὶ ἐν ἑαυτῷ εἴη· ἐν τῷ γὰρ τι εἶναι μὴ περιέχοντι ἀδύνατον. — Ἀδύνατον γάρ. — Οὐκοῦν ἕτερον μὲν ἂν τι εἴη αὐτὸ τὸ περιέχον, ἕτερον δὲ τὸ περιεχόμενον· οὐ γὰρ ὅλον γε ἀμφω ταῦτόν ἅμα πείσεται καὶ ποιήσει· καὶ οὕτω τὸ ἐν οὐκ ἂν εἴη ἔτι ἐν ἄλλῳ δύο. — Οὐ γὰρ οὖν. — Οὐκ ἄρα ἐστὶν που τὸ ἐν, μήτε ἐν αὐτῷ μήτε ἐν ἄλλῳ ἐνόν. — Οὐκ ἔστιν.

“And being like this [i.e. not having any parts], it would be nowhere, for it can neither be in another nor in itself.” – “How so?” – If it were in another, it would be contained all around by the thing in which it is and would be touched by it in many places and in many parts. But since it is one and without parts, and does not participate in roundness, it is impossible that it will be touched in many places all around.” – Impossible.” – “But if it were in itself and contained by itself, it would yet be no other than itself, if it is in itself. For a thing cannot be in something which does not contain it.” – “That’s impossible.” “So one thing is the thing that contains, another the thing that is contained, since the same thing will not as a whole do both at the same time, suffering and doing something. And so the one would no longer be one but two.” – “Surely.” – “So the one is not somewhere if it is neither in itself nor in something else.” – “It isn’t” (138a2-b6).

- 49 The one cannot be in something else, since then it would be touched by this something else *all* around, that is, in many spots.⁵⁰ This is, however, impossible for then the One would have many parts – all the spots at which it is touched. But according to the first deduction, the One cannot have parts if it is not to be many. And, as we just saw above, it cannot be round, since roundness presupposes limits and thus parts (137e). Hence, it cannot be touched all *around*.
- 50 Nor can the One be in itself, since then it would be (1) the encompassing thing and (2) what is encompassed, and thus two things, and not one. This would be even more devastating to the indivisible One.
- 51 This discussion of something being in something else can be best understood, to

⁵⁰ But could the One be thought as a geometrical point that is indivisible and has a position in space without contact at several points, as Cornford (1939) p. 120 suggests? Cornford thinks that this possibility is ignored, since we have reached the notion of an extended body by that stage.

my mind, if we understand Zeno's *topos* paradox as being in the background. The earliest explicit formulation of this paradox we find in Aristotle's *Physics*, which is testimonium DK A24.⁵¹

ἡ γὰρ Ζήνωνος ἀπορία ζητεῖ τινὰ λόγον· εἰ γὰρ πᾶν τὸ ἐν ἐν τόπῳ, δῆλον
ὅτι καὶ τοῦ τόπου τόπος ἔσται, καὶ τοῦτο εἰς ἄπειρον.

For Zeno's difficulty demands some explanation: for if everything that exists has a place, it is obvious that also place will have a place, and this will go on *ad infinitum* (Aristotle, *Physics* 209a 23-25).

52 And we find a second formulation of the paradox three Stephanus pages further on:

ὅτι μὲν οὖν ἀδύνατον ἐν αὐτῷ τι εἶναι πρῶτως, δῆλον· ὁ δὲ Ζήνων ἠπόρει,
ὅτι εἰ ὁ τόπος ἐστὶ τι, ἐν τινὶ ἔσται, λύειν οὐ χαλεπὸν.

Thus it is obvious that it is impossible for anything to be in itself primarily. But Zeno's puzzle that if place is something it will be in something, is not hard to solve (Aristotle, *Physics* 210b 21-24).

53 This paradox of *topos* claims that if everything that exists is in a place and place itself exists, then place will be in a place, *ad infinitum*. There are some problems with the exact reconstruction of the paradox,⁵² but for our purposes we can leave them to the side and understand this paradox as follows:

1. Whatever exists is in something.
2. Whatever is in something is in a place.
3. If place is something that exists, it has to be in something and thus in a place.
4. But then place would be in a place, which again would have to be in a place *ad infinitum*.

54 And the implicit conclusion to be drawn from this is that place does not exist,⁵³ for if there were an infinite series, we would not be able to give a genuine answer to where something is.

⁵¹ For a more detailed discussion of this argument cf. my book manuscript *Spatial notions in early Greek thought*, chapter 2.

⁵² Cf. Sedley (2017) and my reply to him in my book manuscript *Spatial notions in early Greek thought*, chapter 2, where I also argue for understanding the paradox in the form given in the main text.

⁵³ For filling in yet more details, like that nothing is in itself and that there are no circular chains of places, cf. Hussey (1993), p. 110 and Morison (2002), who devotes his chapter 3 to this paradox.

- 55 In the *Timaeus*, Plato blocks this paradox by challenging the first premise – that whatever exists is “in” something.⁵⁴ Here, however, he seems to endorse the premise for the sake of the current argument and presents the following variation of Zeno’s paradox, using the partless *to hen* as subject (138a2-b7):⁵⁵
1. [What exists, exists in something;]
 2. The partless one either is in itself or in something else.
 3. It cannot be in something else since it is partless (and we saw above that if it is in something else, it would be touched by this something else all-around, in many spots).
 4. It cannot be in itself for then it would be two rather than one, that which is in something and that in which it is;
 5. So the one cannot be anywhere.
- 56 I have bracketed the first premise, since it is not explicitly in the text. But it seems a natural assumption, for it would explain why the interlocutors here do at all think that the One should either be in itself or in something else; and also Zeno’s paradox seems to suggest as much.
- 57 The conclusion of Plato’s argument here is that the One cannot be anywhere. And the implicit inference suggested by the argument is that the One then does not exist.⁵⁶ However, Plato does not explicitly draw the conclusion that it cannot exist (nor does Zeno in his paradox). And it may seem that Plato should not draw this explicit inference here, since the first deduction starts from the premise that the One is, which, given the way the paradoxical argument works, seems to include at least that it exists. So it may just be left to the reader to unfold gradually where this deduction finally does end up, namely that the One, conceived as completely partless,⁵⁷ is not and in no way, 141e. In the second deduction this connection between ‘being somewhere’ and ‘existence’ is explicitly drawn.⁵⁸ And when

⁵⁴ Cf. my *Spatial notions in early Greek thought*, chapter 4.

⁵⁵ However, Plato changes the topic in some respect, as his paradox is no longer about the ontological status of *topos*, but about conditions for something to be spatial or in space.

⁵⁶ An alternative would be to understand the One here as being the whole of reality, and the claim that the One cannot be anywhere similar to Aristotle’s claim that the universe does not have a *topos*, so Sedley 2017 p. 24; cf. especially Brisson for understanding the One as the cosmos. Such an understanding of the One, however, makes it hard to see how it can be completely partless while yet constituting the whole of reality.

⁵⁷ Given that we get into trouble because we cannot conceive of it as being in time and space, it seems to be presupposed that this partless one is also a sensible thing (for otherwise, if it were merely intelligible, we would not require it to be in space and time).

⁵⁸ And several other passages suggest a close relationship between existence and being somewhere.

discussing the One as being in time in the first deduction, Plato also draws such an inference explicitly – if the One is not in *chronos*, it has no being (141e 4-9).

- 58 The discussion whether the One can be in something also has consequences for motion and rest: In the first deduction, in 139b, we are told that since the One is nowhere, it thus is not stationary (*estēken*) and cannot rest anywhere, since for that it would have to be somewhere. But equally, for the same reason, it cannot move anywhere. While the One is *akinēton*, as Parmenides' One is, it is, however, not at rest. For in order to be at rest it would have to be *in* something, either in itself or in something else. In this way the discussion of 'being in something' brings to the fore a clear distinction between being *akinēton* and being at rest even if it seems to be presented as paradoxical here. This distinction will be important for Aristotle's *Physics*, but cannot be found in the Eleatics: Parmenides in his poem equates *akinēton* (in fragment 8, line 26) with resting (*keitai*, see lines 29-30); as does Zeno in his arrow paradox, when he infers from a premise including 'being at rest' that the flying arrow is unmoved.⁵⁹
- 59 In the second deduction, where the One is understood as having parts, we hear that the One is both, in itself and in another, 145b-e:

Ἄρ' οὖν οὕτως ἔχον οὐκ αὐτό τε ἐν ἑαυτῷ ἔσται καὶ ἐν ἄλλῳ; — Πῶς; —
 Τῶν μερῶν που ἕκαστον ἐν τῷ ὅλῳ ἐστὶ καὶ οὐδὲν ἐκτὸς τοῦ ὅλου. —
 Οὕτω. — Πάντα δὲ τὰ μέρη ὑπὸ τοῦ ὅλου περιέχεται; — Ναί. — Καὶ
 μὴν τά γε πάντα μέρη τὰ αὐτοῦ τὸ ἐν ἐστὶ, καὶ οὔτε τι πλεον οὔτε ἔλαττον
 ἢ πάντα. — Οὐ γάρ. — Οὐκοῦν καὶ τὸ ὅλον τὸ ἐν ἐστὶν; — Πῶς δ' οὐ;
 — Εἰ ἄρα πάντα τὰ μέρη ἐν ὅλῳ τυγχάνει ὄντα, ἔστι δὲ τὰ τε πάντα τὸ ἐν
 καὶ αὐτὸ τὸ ὅλον, περιέχεται δὲ ὑπὸ τοῦ ὅλου τὰ πάντα, ὑπὸ τοῦ ἐνὸς ἂν
 περιέχοιτο τὸ ἐν, καὶ οὕτως ἂν ἦδη τὸ ἐν αὐτὸ ἐν ἑαυτῷ εἶη. — Φαίνεται.
 — Ἀλλὰ μέντοι τό γε ὅλον αὖ οὐκ ἐν τοῖς μέρεσιν ἐστὶν, οὔτε ἐν πᾶσιν
 οὔτε ἐν τινί. εἰ γὰρ ἐν πᾶσιν, ἀνάγκη καὶ ἐν ἐνί· ἐν τινὶ γὰρ ἐνὶ μὴ ὄν οὐκ
 ἂν ἔτι που δύναίτο ἐν γε ἅπασιν εἶναι· εἰ δὲ τοῦτο μὲν τὸ ἐν τῶν ἀπάντων
 ἐστὶ, τὸ δὲ ὅλον ἐν τούτῳ μὴ ἔνι, πῶς ἔτι ἐν γε τοῖς πᾶσιν ἐνέσται; —
 Οὐδαμῶς. — Οὐδὲ μὴν ἐν τισὶ τῶν μερῶν· εἰ γὰρ ἐν τισὶ τὸ ὅλον εἶη, τὸ
 πλεον ἂν ἐν τῷ ἐλάττονι εἶη, ὃ ἐστὶν ἀδύνατον. — Ἀδύνατον γάρ. — Μὴ
 ὄν δ' ἐν πλεοσιν μὴδ' ἐν ἐνί μὴδ' ἐν ἅπασιν τοῖς μέρεσιν τὸ ὅλον οὐκ ἀνάγκη
 ἐν ἐτέρῳ τινὶ εἶναι ἢ μηδαμοῦ ἔτι εἶναι; — Ἀνάγκη. — Οὐκοῦν μηδαμοῦ
 μὲν ὄν οὐδὲν ἂν εἶη, ὅλον δὲ ὄν, ἐπειδὴ οὐκ ἐν αὐτῷ ἐστὶν, ἀνάγκη ἐν ἄλλῳ
 εἶναι; — Πάνυ γε. — Ἦι μὲν ἄρα τὸ ἐν ὅλον, ἐν ἄλλῳ ἐστὶν· ἢ δὲ τὰ πάντα
 μέρη ὄντα τυγχάνει, αὐτὸ ἐν ἑαυτῷ· καὶ οὕτω τὸ ἐν ἀνάγκη αὐτό τε ἐν
 ἑαυτῷ εἶναι καὶ ἐν ἐτέρῳ. — Ἀνάγκη.

“Since it is so, won't it be both in itself and in another?” “How so?”
 “Each of the parts is surely in the whole, and none outside the
 whole.” “Just so.” “And are all the parts contained by the whole?”
 “Yes.” “Furthermore, the one is all the parts of itself, and not any
 more or less than all.” “No it isn't.” “The one is also the whole, is it

⁵⁹ For a reconstruction of this paradox cf. Sattler (forthcoming), chapter 3.

not?" "Doubtless." "So if all the parts are actually in a whole, and the one is both all the parts and the whole itself, and all the parts are contained by the whole, the one would be contained by the one, and thus the one itself would, then, be in itself." "Apparently." "Yet, on the other hand, the whole is not in the parts, either in all or in some one. For if it were in all, it would also have to be in one, because if it were not in some one, it certainly could not be in all. And if this one is among them all, but the whole is not in it, how will the whole still be in all?" "In no way." "Nor is it in some of the parts; for if the whole were in some, the greater would be in the less, which is impossible." "Yes, impossible." "But if the whole is not in some or one or all the parts, must it not be in something different or be nowhere at all?" "Necessarily." "If it were nowhere, it would be nothing; but since it is a whole, and is not in itself, it must be in another. Isn't that so?" "Certainly." "So the one, insofar as it is a whole, is in another; but insofar as it is all the parts, it is in itself. And thus the one must be both in itself and in a different thing." "Necessarily" (145b6-e6, translation by Mary Louise Gill and Paul Ryan).

- 60 We see that the One that has parts is in itself. For all parts are in the whole and thus encompassed (*periechetai*) by the whole, so that the One is in itself. We may wonder whether the *en* we are talking about here is really meant in a spatial sense ("the whole being in the parts" is one of the senses of *en* Aristotle mentions in *Physics* IV, 3 that is not the locative one). But the investigation continues from here on in a way that suggests location: while the parts are in the whole, the whole is not in the parts, for if it were in all of them it would also be in one, which is absurd. The argument here seems to be that the whole needs to be in every single part in order to be in all; but then the whole would be in a single part, which is impossible. And we get a similar absurdity, now explicitly spelt out, if the whole were in some part – then the greater (the whole) would be in the smaller (some parts), which is impossible.⁶⁰ If the whole is, however, not in one or some parts, it also cannot be in all parts.
- 61 If the whole thus cannot be in itself, the consequence of this is either that it has to be nowhere or that it has to be in something else; both alternatives are problematic. If the whole is nowhere, then, so the inference of the Platonic *Parmenides*, it would be nothing (145e1). Thus, the consequence insinuated by Zeno's *topos* paradox is taken up here: whatever exists, is somewhere, and if something is nowhere then it does not exist (in the way that Aristotle in his *Physics* suggests mythological creatures are nowhere). Given that the deduction started out with the assumption of the existence of the One, this seems to be a dead end.
- 62 What then about the alternative, that the whole has to be in something else? The uncomfortable consequence of this alternative is, of course, that the One itself then requires the assumption of something else, besides the One, in which the

⁶⁰ We can see this as a variation of the sail example in the first part of the dialogue.

whole can be located. And we end up with the familiar move of the second deduction that the One is F as well as non-F, it is in itself in so far as it is all its parts, which are in the whole, and it is not in itself, but in something else, in so far as it is a whole.

- 63 We see Plato here also prepares a distinction between different senses of “*en*” that will be important for natural philosophers later on, without, however, announcing them as different senses. And again this understanding of *being in something* has some consequences for motion and rest: The One that as a whole is in something else and qua parts is in itself, rests and is in motion: it rests qua being always in itself (*en heauto estin*, 146a) and thus always in the same – very much like Parmenides claims in his poem, fr. 8, line 29: as the same and remaining in the same Being rests in itself. On the other hand, the One of Plato’s second deduction is in motion qua always being in another.⁶¹ Thus the One always has to be both, in motion and at rest.⁶²

5. Conclusion

- 64 The second part of Plato’s *Parmenides* is often taken to have an aporetic character that shows all possible avenues explored to be impossible.⁶³ Understood like this, the second part may seem like a systematised version of Zeno’s paradoxes. When Plato shows the One or the others to be F and non-F, we may see this as a classical Zenonian move: Zeno demonstrates in the plurality paradoxes the ones of the natural philosophers to be both one and many, indeed infinitely many, and thus to be paradoxical. And Zeno, like Plato, also takes up central notions of Parmenides’ poem for his arguments: Zeno prominently employs being *oulon* (being a whole), *adiaireton* (indivisible/undivided), *suneches* (continuous), *hen* (one) as well as *homoion* (homogenous) and shows the paradoxical consequences we get into, if we do not assume the One to show these features (for example, if

⁶¹ Cornford (1939) p. 146 objects that motion does not follow from the fact that something is in another, i.e. in a place; all that follows is that there is no reason why it should not move. Plato connects ‘being in something else’ with the temporal indicator ‘always’ here (146a4), which allows for two different readings: either something is always in some specific other x, in which case it could be at rest there, or it is always in something else in the sense of being in x now, and in y then, and in z after that, which would only be possible if it moved. So we seem to be switching from the One being “always in something that is different from it” (in which it may as well be resting), to it being “always in something different”. Coxon, 1999 p. 141 offers an alternative reading of this passage by understanding what is different from the One as being devoid of any unity, so that what the One is in cannot be an identical place, and hence the One must be in motion.

⁶² Coxon p. 141 thinks this is appropriate for the celestial sphere which in its revolution is like a spinning top, both resting and in motion.

⁶³ Cf., for example, Schofield (1977), or Allen (1997).

we assume the One to be *diaireton*, we get into the problem that all possibilities of how to think of its parts lead to inconsistencies).⁶⁴

65 Zeno's book of paradoxes was allegedly stolen from him, as we are told at the very beginning of Plato's *Parmenides*, so that Zeno did not have control over it being published, and presumably also not over it being used by later philosophers, like Plato. The deductions of the second part of Plato's *Parmenides* are, however, not simply a re-run of Zeno. While they take up important methodological lessons from Zeno's paradoxes, they are also expanding and transforming them in important respects:

1) While Zeno's paradoxes shows the assumption of plurality, *topos*, and motion to be problematic from within a pluralist position, Plato seems to do the same with Parmenides' One in the first deduction – showing it to be problematic on its own terms (as long as it is seen as a sensible thing). At least in the first deduction, Plato is not, like Zeno, challenging a notion of a one that only the natural philosophers would assume – a one that is the basis for multiplicity and can itself be divided. Rather, with the first deduction Plato is also challenging a one without any parts, and thus a one that shows important similarities to the One that the historic Parmenides assumed.

2) Accordingly, Plato shows that also a strictly metaphysical deduction, as Parmenides seems to give in his poem, can lead to inconsistencies, if the basic concepts, as, for example, the notion of a whole, are not sufficiently clarified.

3) Plato's deductions not only show the One or the others to be F and non-F, but also the One or others to be neither F nor non-F. Is this just an unremarkable and unproblematic addition? Or is it taking up a variation of Zeno's paradoxical method that we can find with *Georgias*? In *On what is Not* Gorgias argues that if anything is, it must either be ungenerated or have come into being, but it can neither be ungenerated nor have come into being, hence it is not.⁶⁵ Note that Gorgias' argument seems to have the form "If x is, it has to be either F or non-F, but it cannot be F or non-F". By contrast, in Plato's *Parmenides* we find the form that "x is F and non-F, as well as neither F nor non-F".⁶⁶

Gorgias seems to reinforce the paradoxical structure that we find in Zeno, by claiming not only that x has to be F and non-F, but also that it cannot be either.

⁶⁴ For a detailed discussion of the possible consequences cf. Sattler (forthcoming), chapter 3.

⁶⁵ For a discussion of this argument cf. my *Spatial notions in early Greek thought* chapter 2.

⁶⁶ Gorgias' claim that x has to be either F or non-F derives from the assumption that these are the only possibilities for x to be – either it is ungenerated, or it has come into being. By contrast, Plato derives his claim that x is F and non-F not from assumptions about what are the only possibilities there are, but rather from (seemingly) showing that x does in fact seem to have the property of being F and non-F.

Plato, however, is not simply taking up this move from Gorgias. Rather, his variant of Zeno's paradoxical structure expands the paradoxes on a meta-level that prevents any solution that an Eleatic paradox may still have allowed for: if we claim not only the One to be F and non-F, but also the One to be neither F nor non-F, then this contradiction is no longer dissolvable by simply pointing out respects. I tried to show elsewhere that Parmenides' notion of the principle of non-contradiction, in the way used in his poem, does not allow for respects.⁶⁷ By contrast, Plato does use the principle of non-contradiction in a way that includes respects – we find him explicitly working with it in his proof for the tripartition of the soul in the *Republic*.⁶⁸ Given such an understanding of non-contradiction as including respects, we may say: the One is F in one respect and non-F in another. So we may think that Zeno's paradoxes of plurality can be solved with the help of this extended understanding of the principle of non-contradiction in the way Socrates suggests in the first part of the *Parmenides* with the paradox that if there are many things they are both like and unlike or with himself being both one and many – he is one in so far as he is one human being, but he is also many in so far as he possesses many different parts, such as his right hand side and his left hand side. But such a solution does not work for the paradoxical structure we find in the second part of the *Parmenides* – we certainly cannot say something is F and non-F in one respect, and neither F nor non-F in another respect.⁶⁹

Thus Plato's deductions show that Parmenides left his One indeterminate to a degree that allows it to be seen not only as F and non-F but also as neither F and non-F and thus as truly paradoxical.

4) Finally, Plato shows not only that crucial metaphysical notions of Parmenides need to be further clarified, but also notions central for natural philosophy. Zeno and Plato seem to share their interest in problematic features of spatial and temporal notions. For Zeno, the outcome of these investigations is that plurality, time, space and motion are notions that lead to inconsistencies; accordingly, we should retreat to Parmenides' position. By contrast, the outcome suggested by Plato seems to be quite different, namely that showing problems with these notions may help to develop these notions further. For Plato shows in which respects certain spatial and temporal notions are problematic, and where more conceptual work needs still to be done. This we can see from the positive features of temporal and spatial notions we saw as the upshot of the discussions in

⁶⁷ Sattler (forthcoming), chapter 2.

⁶⁸ Cf. Sattler (forthcoming), chapters 2 and 5.

⁶⁹ The arguments of Gorgias are also not resolvable with the help of different respects, but they do not give us a paradoxical structure on a meta-level; rather they seem to request an investigation whether F and non-F are indeed exhaustive.

deduction 1 and 2⁷⁰ and from the fact that he gives us a theory of time and of the beginnings of space in his *Timaeus*.⁷¹

66 We already saw above in the first section on time that Plato does not just leave it to the reader to see whether some positive consequences can be drawn from this dialectical exercise, but shows that there are some general structural points concerning time that we can positively derive from Plato's *Parmenides*:

(I) Being in time is tied to at least some minimal form of change, like becoming older (or younger).

(II) *Chronos* seems to allow for quantitative or qualitative characterisations.

(III) Time has an intimate relationship to relative terms. We saw that Plato used these relative terms to establish a direction in time. But in contrast to our arrow of time, Plato investigates not only one direction in time, but two – things either become older or younger.

Furthermore, from the later sections on temporal notions discussed above we can derive the following:

(IV) While the now and the present tense can on the one hand be treated as being on the same footing as the past and future tense, there are also good reasons for giving them a special status, especially if we think of the end point of a process – an idea that will be taken up by Aristotle.

(V) The notion of *exaiphnês* as outside of time was sketched as a way how we can think of the change between motion and rest that keeps the two clearly apart.

67 Furthermore, there are some general features the discussion of 'being in something' in a spatial sense shows as essential for thinking about space or location:

(I) In order for something to be *in* something, it needs to be divisible into parts. Thus Plato shows that thinking of something as being in something in a locative sense requires what we can term "internal plurality" or complexity – it needs to be divisible into a plurality of parts.

(II) Parts can be in the whole (as in a place), but the whole cannot be in its parts in the same way. With this discussion Plato prepares a distinction of different senses of "en", which will be important for Aristotle's treatment of *Zeno's topos paradox*.⁷²

⁷⁰ While later thinkers could use *Zeno's paradoxes* as guidelines for places where more conceptual work is still necessary, *Zeno* himself does not give us any positive account.

⁷¹ Cf. Sattler (2012) for an understanding of the receptacle as the beginning of a theory of space.

⁷² Aristotle will claim both, that the part is in the whole and that the whole is in the parts (though he does not give an example for the last case).

(III) What something is in, needs to be different from the thing that is in it. Thus Plato shows that for thinking about location, we also need a minimum of what we can call external plurality.

- 68 With these points Plato prepares the grounds further for a natural philosophy that can live up to scientific standards. And he shows that not only conceptualisations central for natural philosophy may lead to problems if not sufficiently specified, but also core notions of metaphysics: if our basic metaphysical notions are not sufficiently clarified and determined, then we will get into inconsistencies, for example if we treat the One in a way appropriate only for sensible things that are in time and place, but not for an intelligible One. The One talked about in deduction 1 and 2 is treated like a sensible thing: in deduction 2 we are explicitly told that it is in time, and in itself and others, and in deduction 1, we are told that because it is not in time (not participating in *chronos*), it neither will be nor is.
- 69 One straightforward way to avoid these metaphysical problems seems to be to assume, after all, Forms, in spite of the problems the first part of the *Parmenides* has shown – which are not in time or space, but still have Being.⁷³

⁷³ I want to thank Arnaud Macé and Olivier Renaut for encouraging me to write this paper for the atelier "Cosmology in the *Parmenides*" in Paris; and to the audience at the conference and an anonymous referee for the journal for helpful feedback on the paper.

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