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Strato and the Peripatetic Background of Alexander's *On Time*

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1 Introduction

The physics of Strato of Lampsacus (c. 335–270 BCE) has drawn considerable attention in modern scholarship.[1] If one thing has become clear it is how much of our knowledge of his philosophy rests entirely on assorted fragments from much later authors who use Strato's observations for their own agenda. If, for the purposes of this paper, we limit ourselves to the fragments on time (Fr. 31–37 Sharples, in Desclos & Fortenbaugh (2011)) we see Sextus Empiricus collecting opposing arguments to generate suspension of judgment, and, most of all, Simplicius presenting Strato's observations as deviating from Aristotle so as to generate stepping-stones to Plotinus (*Enn.* III.7)—with whom he also disagrees—to finally confirm Damascius' theory of time.[2] Yet in all likelihood—as the participants in the Lyon conference agreed—Strato's remarks were meant not so much to oppose or criticise Aristotle, but rather to draw attention to reasonable questions that require further elucidation so as to understand and strengthen the Aristotelian position on time. In this paper I shall provide more support for this approach.

Simplicius rebuts some of Strato's suggestions by means of Aristotelian arguments which may well rely on Alexander's commentary on *Phys.* IV 10–14, if not on Aristotle himself to whom Strato remains close. In Alexander's *On Time* 95.16 ff. (henceforth *Temp.*) we find a discussion of some of the observations that Simplicius lists as Strato's. This raises the question that will occupy us in the second part of this paper: what role do Strato's remarks play in the development of Alexander's own theory of time, which is believed to be decisively different from Aristotle's? Does Alexander at least give his fellow Peripatetic the credit he deserves?

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1 Major contributions are those of Gatzemeier (1970), Furley (1985), Repici (1988), Berryman (1996), Desclos, and Fortenbaugh (2011).

2 I consider Jaulin (2011) most enlightening in this respect.

2 Strato on Time

Strato's observations recorded in Frs. 31–37 Sharples can be summarised as fol-
lows:[3]

1. Time is the number not only of *change*[4] but also of *rest* (Strato mentions
   sitting, sleeping and doing nothing as examples).[5]
2. Eternal things are not "in" time.[6]
3. Time is the quantitative aspect of actions (πράξεις), such as going abroad,
   sailing, going on a military campaign, or waging war; it also applies to
   actions that count as rest (sitting, sleeping, not doing anything).[7]
4. Aristotle said that time is the number of change. But there appears to be
   a mismatch between time and number in various ways:
   a. time and change are continuous quantities, but number is discrete
      quantity (cf. *Cat.* 6, 4b22), and the continuous is not countable. So
      how can time be *number*, i.e. the number of change?[8]
   b. if the continuous is countable because change has different parts
      which are ordered as earlier and later, all continuous magnitudes
      can be numbered, including time itself, so there will be time of time,
      and of all other quantities that come to be continuously.[9]
   c. Time continuously comes to be and passes away, whereas number
      does not (even if the things counted do).[10]

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3   In Fr. 31 Sharples = Simplicius' *Corollarium de tempore* item [4] comes first, followed by [1]
    to [3] in that order, as will be clear from the footnotes. I discuss item [4] last for reasons of
    my own exposition.

4   In principle I translate κίνησις with "change" to allow for all kinds of change, although in
    many cases locomotion is the type of change under discussion. I have retained "move-
    ment" and "motion" in the translations I have used.

5   Fr. 31, 27–29 = Simplicius, *In Phys.* 789.15–18, with the examples at 789.35–37. Fr. 33 Sharples
    = Stobaeus, *Eclogae* I 8 40b, 102.17–103.8 Wachsmuth (1884) lists only this piece of inform-
    ation to the name of Strato. On the doxographical tradition for which Stobaeus is a source,
    see now Mansfeld, and Runia (2020), volume V, part 1, 605–634 on Aëtius *Placita* sections
    21–22 concerning time, with translation of the reconstructed text of Aëtius ibid. part 4,
    2083–2084.

6   Fr. 31, 40–43 Sharples = Simplicius, *In Phys.* 789.25–28.

7   Fr. 31, 50–74 Sharples = Simplicius, *In Phys.* 789.33–790.15.

8   Fr. 31, 9–12 Sharples = Simplicius, *In Phys.* 789.2–4.

9   Fr. 31, 12–18 Sharples = Simplicius, *In Phys.* 789.4–9. It is not clear exactly why it would
    be problematic if time measures time: long stretches of time (months) can be measured
    by shorter times (days), as well as by movements. See further below for a discussion of
    counting and measuring in this context.

10 Fr. 31, 18–24 = Simplicius, *In Phys.* 789.9–11.

d. All parts of number have to exist simultaneously (without all three units present, three does not exist), whereas it is impossible for all parts of time to exist simultaneously. If they did, then (i) prior and posterior time would exist simultaneously, (ii) the now and the unit would be the same, and (iii) if time is number, time would consist of nows like number consists of units.[11]

If we consider these statements separately from the projects of the later sources that transmitted them to us, we can discern a clear effort to interpret Aristotle by means of Aristotle. Item [1] draws attention to the fact that despite the overwhelming concern in Aristotle to determine the precise relation between time and *change*, Aristotle also explains that the *rest* of things is equally in time—at least the temporary lack of change (ἀκινησία) of things that have the capacity to move.[12] Both change and rest are in time in the sense that the number, or quantity, that belongs to them is measured by means of time. This is how time measures the being of what it belongs to *per se*: these physical entities are either in motion or in rest.[13] This definition of rest excludes the lack of change of something that cannot move at all, and is thus in an eternal state of *akinēsia* (the first unmoved mover being the most obvious example).

The exclusion of eternal rest matches perfectly with mention of item [2], which reminds us that Aristotle states that eternal things are not "in" time in the sense that they cannot be numbered by time.[14] For Aristotle eternal motion and rest are not "in" time because the duration of eternal motion and rest cannot be measured exhaustively by any measure since there is always more of them. This is an application of Aristotle's general discussion of the infinite's inexhaustibility, or there being always more beyond what has been taken, which plays a crucial role in Aristotle's famous replies to Zeno's paradoxes of motion.[15] Hence, the restriction of being "in" time to the duration of finite changes and rests in the universe makes us aware that all finite beings in the physical universe, which are necessarily changing or resting, can all be measured by time.

Nevertheless, the topic needs further clarification because it is immediately evident that sempiternal motion itself is not "in" time, in the sense of being

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11 Fr. 31, 24–26 = Simplicius, *In Phys.* 789.11–15. I take all of (i)–(iii) to be consequences from applying the characteristics of number to time. These consequences are not acceptable because they make no sense of time, and contradict Aristotle: *ad* (i) *Phys.* IV 10, 218a25–30; *ad* (ii) *Phys.* IV 11, 219b33–220a26; *ad* (iii) *Phys.* IV 10, 218a8, 18–19.

12 Cf. Aristotle, *Phys.* IV 12, 221b7–23 with *Phys.* III 2, 202a3–5.

13 Cf. Aristotle, *Phys.* IV 12, 221b25–28; IV 13, 222b16–17; cf. IV 14, 223a30–31.

14 Aristotle, *Phys.* IV 12, 221b3–7.

15 On the infinite see Aristotle, *Phys.* III 4–8, esp. III 6, 206a27–b24; on Zeno's paradoxes *Phys.* VI 9–10.

measured by time. It gives rise to the misconception already mentioned by Aristotle, viz. that the motion of the heavens as such would *be* the time everything else is "in".[16] There is a further difficulty because Aristotle also pointed out that the circular motion of the heavenly sphere is used as the unit of measurement for other movements and changes.[17] By allowing the statement that the sempiternal motion of the heavens is "swiftest", he allows a time-related term to be used of an eternal motion. We shall see below how Alexander interprets this source of misunderstanding.

As to item [3], we should observe that action (πρᾶξις) is mentioned in relation to time in the discussion of quantity in *Categories* 6,[18] where action seems to figure on a par with change. So by introducing action in his discussion of time, Strato is not providing a rival definition of time, nor innovating or criticizing as Simplicius suggests, but he is simply taking account of an example from an obvious parallel text in the Aristotelian corpus.[19]

Although *Categories* 4, 2a2 briefly mentions the category of "when" (ποτέ)—with "yesterday" (χθές) and "last year" (πέρυσι) as examples—a more elaborate discussion of this category has not been preserved in the text of the *Categories* as we have it, nor do the ancient commentators reflect any knowledge of such a discussion. A commentary on the category of "when" will therefore have to rely on references to time in *Cat.* 4,[20] and supplement everything else from *Phys.* IV 10–14 and other texts in the corpus. We have evidence that Andronicus proposed to establish "time" and "place" as categories proper, with "when" and "where" as subordinate designations of items in those categories.[21] It is unclear, though, what this would have meant for the treatment of time and place as *per se* quantities in *Cat.* 6. Andronicus' proposal was rejected by Boethus. We shall see that Alexander follows Boethus in this regard, but develops his own solutions to the discrepancies he notes between Aristotle's texts.

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16   Aristotle, *Phys.* IV 10, 218a33–b9.

17   See *Metaph.* X 1, 1053a10–12 (below T8 for further discussion). Contrast Boethus *In Cat.* Waitz (1844–1846), vol. 1, 21.8–20 = Sharples (2010), 172, text D: "time will be the number of the movement which is in a circle both as numbering it and as being numbered by it, but of the remaining movements only as numbering but not also as being numbered."

18   *Cat.* 6, 5b2–7.

19   For the importance of the *Categories* for philosophy in the early empire see Griffin (2015). In his commentary on the relevant passage Simplicius, *In Cat.* 6, 5a15–b10, 135.30–141.9 does not discuss πρᾶξις; elsewhere we find that each πρᾶξις is "in" time, cf. Simplicius, *In Cat.* 341.11–12, 348.10–12, 21–23.

20   *Cat.* 6, 4b24, 5a6–8, 5a26–30, 5b3–7, 6a22–23, 6a28–29.

21   For Andronicus and Boethus see Chiaradonna, and Rashed (2020), 227–234.

In *Cat.* 6 action is mentioned as an accidental quantity, whereas Aristotle designates time, along with number, speech, line, surface, body, and place, as quantities properly speaking.[22] Accidental quantities are designated by quantitative terms like "much" (πολύ) and "long" (μακρός) only by reference to one of the *per se* quantities. E.g., we say there is "much" white because the *surface* to which it belongs is large; in the same way, an action as well as a change are called "long" because they take a lot of *time*. As Aristotle explains, when we render the "size" (πόση τις) of an action we determine it by means of time as, e.g., "a year long". Clearly actions are measured by time just like changes.[23] In this context it is important that time is regarded as a *per se* quantity, because accidental quantities like action owe their quantitive attributes to it.

It is noteworthy that in terms of being a quantity, in *Cat.* 6 time is called a *per se* quantity, but action and change are quantities merely derivatively, or *per accidens*. This seems odd given the priority that change seems to have over time in *Phys.* IV 10–14. For in *Phys.* IV 10–14 our awareness of time passing, and the existence of time, rather depend on the existence of change (and rest), although from other perspectives they seem to have a reciprocal relationship.[24] For commentators there is every reason to specify exactly what type of relation holds between time and change since Aristotle calls time an affection (πάθος) or state (ἕξις) of change.[25]

In *Metaphysics* V 13 we find a related, but by no means identical classification. Here Aristotle distinguishes two types of *per se* quantity and two types of *per accidens* quantity, but now he assigns time to the *accidental* quantities. In 1020a14–32 we learn that

per se 1	line etc. are *per se* quantities because "quantity" is part of their definition,[26] and so are
per se 2	their *per se* properties and states (πάθη καὶ ἕξεις): much/little, long/short, broad/narrow, deep/shallow etc.[27] At 1020a26–32 Aristotle distinguishes two types of accidental quantities:

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22   *Cat.* 6, 5a38 κυρίως ποσά; cf. 5b8–9 κυρίως καὶ καθ᾽ αὑτὰ ποσά.

23   This is not surprising because in *EE* 1220b26–27 πρᾶξις is called a kind of change: ἡ μὲν γὰρ κίνησις συνεχές, ἡ δὲ πρᾶξις κίνησις. In ethics πρᾶξις refers to a specifically human action based on reasoning; Strato's examples are clearly all human actions in this sense. For an elaborate study on the significance of time in ethical praxis see Vigo (1996). In Aristotle's biology and *Parva naturalia* πρᾶξις is a more general term closely related to ἐνέργεια, see e.g. Corcilius (2019) and De Haas (Forthcoming).

24   Dependence of time on change: see e.g. *Phys.* IV 11, 219a9–14, 219b2–3; reciprocity: see e.g. *Phys.* III 1, 200b20–21; IV 11, 218b29–219b2; IV 12, 220b14–32 etc.

25   Aristotle, *Phys.* IV 14, 223a18–19.

26   These are the *per se* quantities of *Cat.* 6, with the exclusion of time as we shall see.

27   For the distinction between kinds of belonging *per se* cf. *APo.* I 4: a property belongs *per*

per accidens 1   the musical and the white are accidental quantities because
that to which they (primarily) belong as accidents is a quant-
ity.[28] Their case is different from

per accidens 2   both change and time which are here called accidental quant-
ities, as well as accidental continua, because the things they
are properties of (πάθη) are divisible as continua.

In addition, in this context Aristotle makes clear that time and change are
not on a par: change is a continuous quantity because the distance covered
is a quantity; time is a continuous quantity because change is. This framework
more closely reflects *Phys.* IV 11, 219a10–30 where we find that change must be
continuous because the distance covered in locomotion is (locomotion being
considered as the primary species of change); in its turn, time must be con-
tinuous because it is an affection of change. But whereas in *Phys.* IV 11 Aristotle
derives the continuity of time and change from the distance covered, in *Metaph.*
V 13 he uses it to *explain* their status as accidental quantities—presumably
because the quantity and continuity of the distance covered has explanatory
priority to both, although in different ways. This leaves us with a discrepancy
between *Cat.* 6 and *Metaph.* V 13 with respect to time: is it a (continuous) quant-
ity *per se* or *per accidens*, and in what sense?

The classification of time is a larger issue which starts with the distinction
that is basic to both *Cat.* 6 and *Metaph.* V 13, viz. that between discrete and
continuous quantity. This is the issue addressed in Strato's arguments under
item [4]. As we have seen, Strato notices that Aristotle's repeated stipulation
that time is the *number* of change might suggest that time is a discrete quant-
ity, from which a series of unwelcome consequences would follow. At the same
time Aristotle makes abundantly clear that time and change are to be regarded
as continuous quantities, and they are both assumed to be continuous quant-
ities in *Cat.* 6 and *Metaph.* V 13—despite the discrepancy discussed above.

Again, in *Metaph.* X 1, 1152b20–27 Aristotle claims that a measure (μέτρον) is
that by which quantity *qua* quantity is known. The indivisible unit of number

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se either when the property is part of the definition of what it belongs to, or when that to
which the property belongs is part of the property's definition. This seems to match the
distinction between *per se* 1 and *per se* 2 quantities in *Metaph.* V 13.

28   White as a colour exists in body, cf. *Cat.* 1a2, or rather in a surface, *Cat.* 5b2–3, *Metaph.*
1022a16–17, 1070b20, which are both *per se* quantities. Musical is commonly said to belong
to human being (e.g. *GC* 319b24–32 and *passim*), or to an individual human being like
Socrates (e.g. *Metaph.* 1007b14 and *passim*), which could both count as bodies. However,
it should be noted that a change from musical to non-musical is regarded as a change in
the soul (which is not a quantity), *APo.* 70b9, *GC* 334a11–12, given that μουσική is a kind of
ἐπιστήμη.

(the 1) which is used to count numbers (regarded as sets of ones) constitutes the basic notion of "one". Measures for continuous quantities (the examples are length, breadth, depth, weight and speed) derive their unity from this primary "one", i.e. they are regarded as one and indivisible (see further below T7–8 with discussion). In this context "measure" occurs as the more general term covering both the unit of counting discrete quantities, and the unit of measuring continuous quantities.[29]

To make matters worse, in *Metaph.* V 13, 1020a8–9 Aristotle clearly stipulates that "a quantity is a plurality (πλῆθος) if it is countable (ἀριθμητόν), and a magnitude (μέγεθος) if it is measurable (μετρητόν)". However, judging from the fluid vocabulary of counting and measuring in relation to time in the whole of *Phys.* IV 10–14 it seems we would have to conclude that time is both a plurality and a magnitude. Strato's [4a] and [4b] show that he is well aware of the counting/measuring issue, although the remaining fragments do not reveal how he proposed to deal with them.

Aristotle himself had already tried to clarify his use of "number" in "time is the number of change" by stipulating that time is not numberable or numbered number by means of which we count (ἀριθμὸς ἀριθμητόν ᾧ ἀριθμοῦμεν)—which would be the familiar discrete number of *Cat.* 6—but the numbered number (ἀριθμὸς ἀριθμούμενον), or "the way in which change has number" (ᾗ ἀριθμὸν ἔχει ἡ κίνησις).[30] However, both ancient and modern commentators provide different interpretations of this distinction. All this goes to show that interpreters have to deal with at least two major classification issues regarding time, viz. is time continuous or discrete, and is it a *per se* or *per accidens* quantity? These problems will become more apparent as commentators are trying to combine all relevant texts from the Aristotelian corpus, after Strato's example.[31]

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29   For the intricacies of the argument in *Metaph.* X 1–2 and related texts, see Castelli (2018), 20–24 with the ensuing detailed commentary. Like Aristotle, Alexander wishes to steer clear from any suggestion that the number one, or any measure, has the status of a metaphysical principle of the Pythagorean or Platonic kind.

30   *Phys.* IV 11, 219b2–9.

31   Alexander, *In Metaph.* V 13 notices two more discrepancies between this chapter and *Cat.* 6. *In Metaph.* 396.6–8 Alexander asks whether number consists of parts that have no position (like the accidental quantities time [!], speech, and change in *Cat.* 6) or parts that have position after all (in V 13); Alexander, *In Metaph.* 397.31–34 concerns the question whether "large" and "small" (as opposed to "larger" and "smaller") are relatives (in *Cat.* 6) or exist in themselves (in V 13). There is no need to pursue these issues here.

3   Alexander and Strato's Observations on Time

Here we shall be concerned only with Alexander's response to Strato's observations, and to the problems of classification indicated above. For this purpose I shall take my cue from Alexander's treatise *On Time*, which discusses three of the four observations that Simplicius ascribes to Strato (95.16–40), although Alexander does not mention Strato by name.[32] In addition I shall use what remains of Alexander's commentary on *Phys.* IV 10–14,[33] along with his commentary on *Metaph.* V 13 to see how he dealt with the issues of classification we encountered above.

Alexander *On Time* is a short work best compared with the short treatises on assorted topics we are familiar with from the *Mantissa* and *Quaestiones*.[34] It has a clear structure:[35] Alexander first frames the issue of time along the lines of existing views of time some of which had already been discussed by Aristotle (92.31–93.35).[36] He then presents Aristotle's theory of time as he understands it (93.35–95.15), followed by a discussion of questions and specifications some of which echo Strato's concerns (95.16–97.5).

In order to be able to investigate whether and how Alexander's discussion of Strato's observations and the classification problems help him to formulate

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32   In his remaining work Alexander only refers twice to Strato by name: *In Top.* 340.3, *In Sens.* 126.20.

33   See Rashed (2011), 56–81 (discussion); 252–293 (fragments). Within the confines of this paper I cannot do justice to his reconstruction of the wider aims of Alexander's concept of time. The Greek fragments are preserved in the later Greek commentaries on *Phys.* IV 10–14 by Themistius (2003), Philoponus (2011), and most of all Simplicius (1992), not least in his *Corollarium de tempore*, translated in Simplicius (1992). This state of transmission renders it impossible to verify Alexander's claim at the start of *On Time* (93.3–4) that perhaps (*forsitan*) he may have written something in the short treatise he did not mention in his commentaries.

34   Alexander, *On Time* (or as one manuscript has it: *On Motion and Time*) was first translated in English by Sharples (1982), which is the translation I shall use here, with modifications. The Greek original is lost. References are to the Latin translation by Gerard of Cremona (1114–1187), published in Théry (1926) 92–97. Gerard of Cremona translated a later Arabic version of the same text, edited by Badawi (1971) 19–24. Sharples cooperated with Fritz Zimmerman for a comparison of the Arabic and Latin texts; where indicated I follow the Arabic text as interpreted by Zimmerman. I also note my debt to Alessio Santoro's insightful comments on the basis of the Arabic text for which I am grateful.

35   From a distance, the structure roughly resembles that of Aristotle's discussion of time: discussion of untenable rival views (IV 10), development of his own view (IV 11–13), reply to residual questions (IV 14). But Alexander reshuffles arguments from all of Aristotle's chapters into an order of his own.

36   Aristotle, *Phys.* IV 10, 217b32–218a30.

his view of time, let us first outline Alexander's view of time as it emerges from *On Time*. Interestingly, he sets up his topic as "a difficulty to dissolve in what is said by those who think [that time] is neither" (i) the heavenly sphere, nor (ii) its movement, nor (iii) movement as such, nor (iv) the number of the movement of the heavenly sphere. Aristotle had already objected to (i) to (iii), but we shall see that Alexander will eventually support the fourth option once it has been properly specified. Hence a difficulty arises if the fourth option is denied, too. The fourth option itself is immediately pitted against a further claim about time:

> T1 Some however think that time is not any of these things, nor yet the number of the movement of the heavenly sphere; they think it is a single thing that encounters things. For they say that if we were to think of the sphere standing still, its standing still would be in time; and since its standing still would be in time, its movement would be in time.[37] But what they say is not true; for if we were to think of the sphere standing still, time would be done away with. (Alexander, *Temp.* 93.22–28, transl. Sharples modified)[38]

Themistius ascribes a similar view to Galen, viz. that time is defined by itself, separately from change, which is a view that may well have been inspired by Plato's *Timaeus* in which time figures as the image of eternity, without any intrinsic relation to change.[39] Alexander, on the other hand, wishes to preserve some kind of relation between time and change, esp. the movement of the heavenly sphere.[40] It is interesting to see that the concept that standing

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37   At this point Sharples adds: ⟨and if its movement is in time, the attendant number of its movement is in time too⟩. But the argument is not about time being in time, but about time being unrelated to motion because rest, too, is in time.

38   Alexander, *Temp.* 93,22–28: *Quidam autem putant quod tempus non est omnia illa, neque numerus motus orbis; estimant quod ipsum est unum occurrens rebus. Dicunt enim quod si estimaremus orbem stantem, esset stacio ejus in tempore, et cum stacio ejus esset in tempore, tunc motus esset in tempore. Verum quod ipsi dicunt non est verum; quoniam si estimaremus orbem stantem, destrueretur tempus.*

39   Themistius, *In Phys.* 149.4–20; cf. 144.23–145.2: Galen is supposed to have claimed that change rather makes us think of unchanging things, such as the poles of the cosmos and the centre of the earth. This association is explicitly rejected in Alexander, *Temp.* 96.17–20.—On Galen's view of time, and on the possibility (raised by Zimmerman) that *On Time* was originally part of a polemical treatise by Alexander against Galen *On Motion and Time* referred to in Arabic sources, see Chiaradonna (2009).

40   Alexander, *Temp.* 93.28–32 also tries to undermine the argument by suggesting that thought experiments have no relevance to gaining knowledge of the actual nature of time.

still is also in time (Strato item [1]) was apparently used to separate time from change altogether, against Aristotle. This in itself should be sufficient reason for Alexander to be interested in the topic Strato drew attention to.[41]

Needless to say, Alexander's bold claim in T1 that time would be done away with if the sphere were to stand still, requires more elucidation, which he provides in his second section devoted to the Aristotelian notion of time. A series of texts in *On Time* paints the following picture of time:

> T2 Time is number which is numbered by something else, namely by movement. [...] and time is number only because of the first and last which are determined in the movement; for it is by number that one speaks of first and last, since the unit is what is first in number, and the last is what exists after the first. [...] So, since movement exists, time exists through its quantity [*sc.* of movement]; so that time is the number of movement in this way. (Alexander, *Temp.* 94.3–4; 9–11; 15–16, transl. Sharples modified)[42]

> T3 Although time is a single connected continuum, I say that it is number only because it is many in thought. For times only exist in potentiality and thought, not by being in actuality. [...] Time therefore is one in actuality, although it is divided potentially. (Alexander, *Temp.* 94.22–25; 41–42)[43]

> T4 And movements differ as individuals and in form; but time is single and undivided.[44] (Alexander, *Temp.* 95.29–31)[45]

According to Alexander time is an undivided continuum that is one in actuality; time as such is the quantitative aspect of movement as such. Time is only numbered number in so far as it marks the first and last which exist in move-

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41   Perhaps similar opposition to Aristotle already prompted Strato's remarks.
42   Alexander, *Temp.* 94.3–4; 9–11; 15–16: *Tempus autem est quod numeratur per aliud, scilicet per motum* [...] *non sit tempus numerus, nisi propter primum et postremum determinata in motu, quoniam numero dicit primum et postremum. Unum enim est primum in numero, postremum existens post primum* [...] *Cum ergo est motus, est tempus per quantitatem ejus, quia est numerus ejus in hoc modo.*
43   Alexander, *Temp.* 94,22–25.41–42: *Et non dico quod tempus est numerus quamvis sit unum conjunctum continuum nisi quoniam estimacione est multa; non sunt enim tempora nisi potencia et estimacione* [...] *tempus igitur est unum actu, quamvis dividatur potencia.*
44   Arab. "not different", "undifferentiated" (Santoro).
45   Alexander, *Temp.* 95.29–31: *Et dico quod motus diversi fiunt per individua et formam; sed tempus est unum non divisum.*

ments, and in that respect time can be numbered, by movement. The numbers used to do the numbering exist in rational souls; they are, as we shall see, the units of measurement, different as such from time as numbered number. Since individual movements are different, so are the corresponding individual finite times of movements (and rests). But marking the first and last in movements, and therefore in time, is an act of thought that does not affect the single continuum that is time. Against views of the Galenic type, Alexander maintains that ultimately this single continuum does not exist in its own right, but as the quantitative aspect of the eternal movement of the outer sphere, which is the principle of all other movements in the universe. After all, Aristotle did claim that time is "something" (219a9), or "an affection or state" of movement (223a21–22), in a sense that Alexander will try to define more clearly.

This concept of time, as we shall see, is built upon a series of passages in Aristotle that are all related to Strato's observations directly or indirectly. Hence, I propose, working through Strato's (and other commentators') observations is constitutive of Alexander's interpretation of Aristotle's theory of time.[46]

Strato's observations occur in *On Time* in the following way:

(i)   the difference in genus between time and movement (95.16–21 = Strato [4]);

(ii)   how time numbers change, and change numbers time (96.26–38 = Strato [4a–b]).

(iii) the fact that time is also the number of rest (95.21–26; 96.10–20 = Strato [1]);

(iv)   the fact that eternal things are not in time (96.4–10 = Strato [3]).[47]

Alexander's response to (i) the perceived difference in genus between time as number (discrete) and movement (continuous) reads as follows:

> T5 But if some, considering these things, have felt doubt, asking how time numbers movement, since it is not in the same genus as it, we say that ⟨time numbers movement even though movement is not in the same genus⟩, just as the cubit numbers the wood, even though the wood is not in the same genus. In this way time numbers every movement, of growth

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46   From my arguments here it will be clear that I believe that Alexander is closer to Aristotle's intentions than e.g. Sharples (1982), 68–72, Coope (2005), 170–171, and Rashed (2011) seem to think. However, within the confines of this paper I cannot do justice to this complex issue.

47   He does not mention the fact that human action is measured by time (Strato [2]). The fragments of Alexander, *In Phys.* IV 10–14 do not discuss this point either.

and of ageing and of change; for time itself numbers all these movements, but not qua growth and ageing and change. (Alexander, *Temp.* 95.16–21)[48]

Alexander takes the doubt which people have felt to be an issue concerning numbering, as if a number should be of the same kind as each thing it numbers. Alexander addresses the problem by pointing out, first, that a unit of numbering (e.g. the cubit) need not be in the same genus as what it measures (e.g. the piece of wood).[49] This reply turns on the same fluidity of the unit/measure vocabulary that caused the problem in the first place: a cubit taken as an indivisible unit of measuring can be regarded as a discrete quantity, a "one", whereas the piece of wood is a continuous quantity. This is compatible with the fact that the cubit is itself a particular length (made of wood or any other material) used to measure the length of the piece of wood: in that sense unit/measure and what is counted/measured are of the same kind.

At the same time Alexander alludes to Aristotle's discussion of the problem which kind of movement it is that time measures.[50] Aristotle explained that one and the same time numbers different kinds of movement *qua* movement, not *qua* the particular kind of movement each happens to be, e.g. growth or ageing or change. In that context Aristotle emphasises that one and the same time is the number of movement as such (ἁπλῶς), regardless of whether one is dealing with a particular kind of movement like generation, corruption, growth or alteration, or of movements that are simultaneous and equal, or not.

> **T6** For a time that is both equal and simultaneous is one and the same time, and even those that are not simultaneous are one in kind; for if there were dogs, and horses, and seven of each, it would be the same number. So, too, movements that have simultaneous limits have the same time, yet the one may in fact be fast and the other not, and one may be locomotion and the other alteration; still the time of the two changes is the same if it is both equal and simultaneous; and for this reason, while the movements are different and separate, the time is everywhere the same, because the *number* of equal and simultaneous movements is

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48 Alexander, *Temp.* 95.16–21: *Quod si accidit ambiguitas aliquibus speculatoribus et dixerunt quomodo numerat tempus motum, cum non sit de genere ejus, dicemus sicut numerat cubitus lignum quamvis non sit lignum de genere ejus; sic dico quod tempus numerat omnem motum augmenti et vetustatis et mutacionis; ipsum enim illos motus omnes numerat, non per hoc quod ipsi sunt augmentum et vetustas et mutacio.*

49 Arab. *ḫašba* denotes "a piece of wood", "an object made out of wood" rather than the material in general (Santoro).

50 Cf. Aristotle, *Phys.* IV 14, 223a29–b12.

> everywhere one and the same. (Aristotle, *Phys.* IV 14, 223b3–12, transl. Hardie/Gaye in Barnes *RevOT*)

As the number 7 is the same, regardless of the kind of things it is used to count, dogs or horses, so the time is the same in all cases.[51] This text provides Alexander with a model for his own notion of a single, continuous and sempiternal time that only becomes differentiated by the different movements we are numbering by means of our rational soul (see T2–4 above).[52]

Two further texts from Aristotle may serve to explain the required concepts of numbering and measurement in more detail, and to shed light on the second of Strato's observations (ii). In *Metaph.* XIV Aristotle explains how "one" means "a measure", and how in each case of measuring the measure has a distinct nature of its own adapted to the purpose:

> T7 In every case it is some underlying thing with a distinct nature of its own (τι ἕτερον), e.g. in the scale a quarter-tone, in magnitude a finger or a foot or something of the sort, in rhythms a beat or a syllable; and similarly in weight, it is a definite weight; and in the same way in all cases, in qualities a quality, in quantities a quantity (and the measure is indivisible, in the former case in kind, and in the latter to the sense); which implies that the one is not, in any instance, in itself a substance. [...] The measure must always be something predicable of all alike, e.g. if the things are horses, the measure is horse, and if they are men, man. If they are a man, a horse, and a god, the measure is perhaps living being, and the number of them will be a number of living beings. (*Metaph.* XIV 1, 1087b34–1088a4; a8–11; transl. Ross in Barnes *RevOT*).

Because the measure must always be predicable of all things measured by it, the measures differ in each case, while the number that counts how often the measure is applied remains the same. In *Metaph.* X Aristotle clarifies how the measure is to be conceived as indivisible, even if it is itself something divisible.

> T8 Now where it is thought impossible to take away or to add, there the measure is exact. Hence that of number is most exact; for we posit the unit as absolutely indivisible; and in all other cases we imitate this sort of measure. For in the case of a furlong or a talent or of anything large any

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51   Cf. Aristotle, *Phys.* IV 12, 220b10–14; IV 14, 224a2–15 emphasizing both the sameness of number and (accordingly) time, over and against the variety of things counted.

52   See also *Phys.* IV 10, 218b13.

addition or subtraction might more easily escape our notice than in the case of something smaller; so that the first thing from which, as far as our perception goes, nothing can be subtracted, all men make the measure, whether of liquids or of solids, whether of weight or of size; and they think they know the quantity when they know it by means of this measure.

And they know movement too by the simple movement and the quickest; for this occupies least time. And therefore in astronomy a "one" of this sort is the starting-point and measure (for they assume the movement of the heavens to be uniform and the quickest, and judge the others by reference to it), and in music the quarter-tone (because it is the least interval) and in speech the letter. (*Metaph.* x 1, 1052b32–1053a13; transl. Ross in Barnes *RevOT*)

These passages illustrate that the confusion about the categorisation of time may well have its roots in the realm of measurement. If measures are supposed to be predicable of everything measured, they seem to belong to the same genus. The measure which is used in measuring or counting different types of entities has to be adapted to the purpose: quantities are measured by some definite quantity, a group of horses counted by the unit horse. In this sense the measure "has a distinct nature of its own" in each case. What is needed for the solution is the insight that measure and measured are in the same genus in all of these cases: a cubit is a definite length used as a unit of measurement for the length of the wood, which is the quantitative aspect of the wood. It is predicable of the wood as a length of a length, or a quantity of a quantity. In the same way a definite length of time can serve as the unit of measurement of the quantitative aspect of change. For the same reason movement can measure time, while each has a nature of its own.

Moreover, in so far as quantities or substances are used as a unit of measurement, they are considered to be as indivisible as the absolute unit of numbering, the number one. Hence the use of the term "number" for time in general is apt, even though time as such is a continuum. A cubit itself is a continuum, but as a unit of measurement it is considered indivisible. In this sense time is the number for counting movements in general, whereas in counting particular types of motion a suitable measure of time has to be chosen as the unit of measuring. Aristotle suggested that for this reason astronomers use the circular movement of the heavens (the length of a day), which they consider uniform and quickest, as a the unit measure for the movements of the heavenly bodies.[53]

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53   Cf. Aristotle, *Phys.* IV 14, 223b12–23.

Alexander starts his report on Aristotle's theory of time with a reference to this passage in which, he says, Aristotle "maintains that [time] is said dialectically to be the number of the sphere that moves from east to west".[54]

Alexander all too readily adopts this measure as the natural unit for measuring time in the universe:

> **T9** Aristotle believed that time numbers movement qua movement, not as having any particular property; time does not number the movement of growth qua growth, or change qua change, but rather qua movement. So it numbers every one of the species of movement just as it numbers movement itself with reference to its intervals; for it numbers them with reference to that which they have in common, and not with reference to what is specific to each movement.
>
> Conversely, movement numbers time,[55] since a day is nothing but the number of the movement of the heavenly sphere for twenty-four hours; then, by means of those hours reduplicated, it measures other longer periods of time too. (Alexander, *Temp*. 96.27–38)[56]

These texts show why the definitions of time (i) to (iii) which Alexander listed in the first section of his treatise all fail. Time is not identical with the heavenly sphere itself, nor with its movement, nor with movement in general, and not even with (iv) the number of the movement of the heavenly sphere, at least not without further specification. To believe otherwise is to misunderstand not only the nature of time, but also the nature of number and the unit of measurement.

Nevertheless, Alexander believes that if we were to think of the heavenly sphere standing still, time would be done away with (T1). Without the primary

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54   Alexander, *Temp*. 93.36–38: *Estimatur autem quod dicitur sermone dyalectico, numerus motus orbis orientalis.* Cf. Aristotle, *Phys*. IV 14, 223b22–224a2. Aristotle here refers to the common association of time and moving in a circle (223b21–22.29 δοκεῖ, 24 τὸ εἰωθὸς λέγε-σθαι). On Alexander's broad conception of Aristotelian dialectic see De Haas (2021).

55   Cf. Alexander, *Temp*. 95.5–6. Cf. Aristotle, *Phys*. IV 12, 220b14–32.

56   Alexander, *Temp*. 96.27–38: *et Philosophus quidem estimavit quod tempus numerat motum per hoc quod ipse est motus, et non numerat ipsum propter hoc aliquid quod ei approprietur, cum tempus numeret motum augmenti, non per hoc quod ipsum sit augmentum, et numeret mutacionem non per hoc quod est mutacio, immo per hoc quod est motus. Ipsum igitur numerat omnem motum cum intencione, quia numerat omnem speciem ex speciebus motus, sicut ipsum numerat ex spaciis; ipsum enim enumerat eas ex re communi que est eis non per rem qua motus approprietur. Et dico iterum quod motus numerat tempus, quoniam dies non est nisi numerus motus orbis viginti quatuor horarum; deinde numerat per istas horas secundum duplicitatem et reliquum tempus multum.*

movement in Alexander's universe, which is the movement of the heavenly sphere, from which all movement in the universe is transmitted to the lower regions of the universe, time will not exist.[57] Alexander builds on Aristotle when he develops the view that the unwavering rational desire of the outer sphere towards the First Cause is the cause of its eternal motion. It is in this remarkable sense that Alexander can embrace the notion that if there were no soul, viz. the soul of the outer sphere, time would not exist.

The famous problem raised by Aristotle, whether time would exist if there were no soul to count time, thus changes its usual appearance. It should be noted that Aristotle does not *claim* that time does not exist if there is no soul to do the counting (although this is by far the most widespread interpretation of his doctrine of time). For he adds: "*except that* (my italics) there might be that thing (whatever it is) by being which time is [what it is]—for example, if it is possible for movement to exist without soul".[58] On this interpretation Aristotle most clearly invites Alexander's answer: no, movement cannot exist without the soul of the outer sphere, so time cannot exist if this soul does not exist.

What about the soul that does the numbering? Alexander is clear that the number that numbers something else is in the soul, whereas time is number which is numbered by something else, namely by movement (T2). This formulation neatly separates the nature and existence of time as such from the nature and existence of mathematical number in souls. Time can very well exist if there is no soul that wields units of measurement and numbers.[59]

Despite the fact that Alexander's Peripatetic account of time does not mention rest, and opponents used the duration of rest to raise difficulties for Aristotle, he does not spend much time on the issue that time is also the number of rest (iii): we use the same adjectives like "by day" and "by night" for rest and for change, so this should be obvious.[60] Like Aristotle, he needs both change and rest in order to support the claim that time measures the *being* of all things in the physical universe, which are all either in motion or rest, hence "in" time.

The fact that eternal movement is not in time (iv) is only touched upon briefly:

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57   For the importance of the circular movement of the outer sphere and the divine power of movement which it imparts on the lower realm of the universe see e.g. Alexander, *On the universe*, and *Quaest*. II 13, with Genequand (2001), Fazzo (2002), Fazzo (2008a), Bodnár (2014).

58   Cf. Aristotle, Phys. IV 14, 223a21–29. A full discussion of this complicated issue is beyond the scope of this paper.

59   Cf. Aristotle, *Phys*. IV 14, 223b33–224a2.

60   When Aristotle *Phys*. IV 12, 221b7–8 makes this point he says "time is the *measure* of rest", whereas Alexander sticks to "number".

T10 I say that all things are in time because they move and rest, and time is the number of movement and of rest, and what neither moves nor rests is not in time. Moreover, the sempiternal things do not apply to any thing as a result of time, since they do not grow old as a result of time, as they are not in it or subject to it, and it is only the things which fall under time that grow old. (Alexander, *Temp.* 96.4–10)[61]

By way of argument Alexander merely repeats Aristotle's indication (*sēmeion*) for this fact: sempiternal things are not in time or subject to it, because they do not grow old because of time.[62] But the issue requires more of our attention when we compare two further statements of Alexander's:

T11 I say that time is the number of the movement of the heavenly sphere, apart from other movements, only because there is no movement swifter than this, and a thing is only numbered and measured and reckoned by what is less than itself. For a plurality of things is numbered by the unit, and long intervals are measured by the cubit, and measures of capacity are reckoned by the twelve-bushel unit or by what is less than the thing measured itself. And I say that movement neither is nor will be done away with. (Alexander, *Temp.* 94.16–22, transl. Sharples modified)[63]

T12 I say that the movements of the other spheres differ in speed, but the movement of the sphere that moves from east to west, without doubt, is the swiftest of them, and is in accordance with order. Therefore the number of this, without the number of the other movements of the rest of the spheres, is time; since a thing is only measured by what is less than it, as we said previously. (Alexander, *Temp.* 95.6–11)[64]

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61   Alexander, *Temp.* 96.4–10: *Et dico quod res omnes sunt in tempore quoniam moventur et quiescunt et tempus est numerus motus et quietis et quod non movetur neque quiescit, non est in tempore. Et dico cum illo quod res sempiterne non occurrunt ex tempore alicui rei, quoniam ipse non veterascunt ex tempore, quia non sunt in eo neque manentes sub eo, et non veterascunt nisi res cadentes sub tempore.*

62   Cf. Aristotle, *Phys.* IV 12, 220a30–221b7; Aristotle associates time as the measure of change with decay and forgetfulness, rather than learning, rejuvenation and beauty. This passage immediately precedes Aristotle's claim that time is also the measure of rest discussed above p. 155.

63   Alexander, *Temp.* 94.16–22: *Et dico quod tempus non fit numerus motus orbis absque aliis motuum, nisi quoniam non est motus velocior eo, et non numeratur aliquid et cubitatur aliquid et mensuratur aliquid, nisi cum eo quod est minus illo. Numerantur ergo res multe cum uno et meciuntur spacia longinqua cum cubito et mensurantur mensure cum caficio aut cum eo quod est minus ipso, et dico quod motus non tollitur vel cessat, neque tolletur.*

64   Alexander, *Temp.* 95.6–11: *Et dico quod motus reliquorum orbium sunt diversi in velocitate,*

It would seem that according to Alexander time *does* measure eternal move-
ment "but only because that movement is the swiftest",[65] and everything is
measured by something smaller than itself. This seems to suggest that Alex-
ander is willing to entertain the idea that eternal motion can be measured by
a limited measure after all. Does this mean that time is *identified* as the num-
ber of the movement of the outer sphere? I believe not. In line with Aristotle,
Alexander points out that astronomers (and ordinary people) use one rotation
of the outer sphere as a measure of time. On the other hand, the term "swiftest"
as such refers to time as part of a comparison between the speeds of single rota-
tions of the different heavenly spheres, and is itself applied to the movement
of the outer sphere.[66] One rotation of the outer sphere is 24 hours long, and
therefore this movement (which is a part of the sempiternal movement of the
outer sphere) is a limited movement which can serve as the measure of longer
times (see T9). This is the point of the limiting clause "but only because that
movement is the swiftest". After Aristotle, Alexander allows the comparison
between limited single rotations which fits the general theory of measurement
(time measures movements, and movements measure time). The *sempiternal*
movement of the outer sphere is still not "in" time because the total number
of its rotations cannot be counted in this way: they are infinite in number. So
when Alexander states "Time is the number of the movement of the heavenly
sphere, only because there is no movement swifter than this" (T11), and "the
number of this [movement of the outer sphere] is time" (T12) this should still
not be taken to mean that the single time Alexander believes to exist is *defined*
as the number of the movement of the heavenly sphere—which cannot be
exhaustively numbered. It is merely the preferred unit of time as measure of
all movement in the universe, for which the movement of the outer sphere is
the principle.[67]

Last but not least we have to see how Alexander deals with the classific-
ation issues of time. The first classification problem (is time continuous or
discrete?) has been solved with reference to the theory of counting and meas-
uring which Aristotle also referred to in *Phys.* IV 10–14. Time is a continuous
quantity because change is, but chosen durations of time can be counted when

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    *sed motus orbis orientalis, absque dubio, est velocior eis et est secundum ordinem. Numerus
    ergo ejus sine numero aliorum motuum reliquorum orbium est tempus, cum res non men-
    suretur, nisi per id quod est minus sicut diximus ante hoc.*

65   Alexander repeats this point several times: *Temp.* 93.16–22, 94.16–18 (T11), 95.7–8 (T12),
      95.26–29.
66   Cf. Aristotle, *Phys.* IV 10, 218b13 ff.
67   Cf. Alexander, *In Metaph.* V 13, 396.14–18.

regarded as indivisible measures of change.[68] The second classification problem (is time a *per se* or *per accidens* quantity?) is a thornier issue for Alexander. For he has to stay clear from associating time with a *per se* quantity in the sense of Galen, and he has to find room for the dependence of the continuity of time on change, and that of change on the distance moved, all within in the framework of distinctions we found in *Metaph.* v 13.

In his commentary on *Metaph.* v 13 Alexander addresses the discrepancy concerning the classifications of time in the *Categories* and the *Metaphysics*. Then he suggests different ways to understand the nature of Aristotle's subdivision of accidental quantities.

> **T13** It should also be pointed out that although in the *Categories* Aristotle said that time is a *per se* quantity, he says here that it is a quantity *per accidens*, and prior to it, of course, change, for time [is an accidental quantity] because of change.
>
>   We must ask too why he does not locate change and time among those *per se* quantities that he called "affections or states" of quantities [our *per se* 2], but puts them with those quantities that are such accidentally [our *per accidens* 2]; for if change is an affection of something continuous (for it cannot take place except in another), the affections too would belong with things that are quantities in this way. (Alexander, *In Metaph.* v 13, 398.27–34; transl. Dooley (1993) modified, my brackets)[69]

Although at first sight the suggestion to regard change and time as *per se* 2 affections of quantities makes the best sense, categorising change and time in this way would change but not resolve the discrepancy between *Cat.* 6 and *Metaph.* v 13—for in *Cat.* 6 time is a *per se* quantity, but change *per accidens*, whereas they are lumped together as *per accidens* quantities in *Metaph.* v 13. That is probably why Alexander tries to develop a reason why Aristotle made this division in *Metaph.* v 13 in this way, but the density of his text makes it hard to understand.[70] Unfortunately, after the next paragraph the commentary on *Metaph.* v 13 ends abruptly.

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68 Note that Damascius (Fr. 37 Sharples) transcends the discussion by claiming that time is *both* continuous *and* discrete.

69 Alexander, *In Metaph* 398.27–34: σημειωτέον δὲ καὶ τοῦτο, ὅτι τὸν χρόνον ἐν Κατηγορίαις καθ᾽ αὑτὸ ποσὸν εἰπὼν ἐνταῦθα καὶ αὐτὸν κατὰ συμβεβηκός φησιν εἶναι ποσόν, καὶ πρὸ αὐτοῦ γε τὴν κίνησιν· διὰ γὰρ ταύτην καὶ τὸν χρόνον. ζητητέον δὲ καὶ τοῦτο, διὰ τί τὴν κίνησιν καὶ τὸν χρόνον οὐκ ἐν τοῖς καθ᾽ αὑτὰ ποσοῖς ἔθηκεν, ἃ πάθη ἢ ἕξεις εἶπεν εἶναι τῶν ποσῶν, ἀλλ᾽ ἐν τοῖς κατὰ συμβεβηκός· εἰ γὰρ πάθος ἐστὶν ἡ κίνησις συνεχοῦς τινος (οὐ γὰρ οἷόν τε ἄλλως ἢ ἐπ᾽ ἄλλου κίνησιν γίνεσθαι), εἴη ἂν ἐν τοῖς οὕτω ποσοῖς καὶ τὰ πάθη.

70 See Dooley (1992), notes 311–314 for a slightly different reading.

T14 Well, he might be calling affections which are quantities in themselves [i.e. change and time] accidental quantities, but surely not in the same way as those accidents that are not affections of quantities, nor affections of quantities while being themselves quantities.

Well, perhaps those [other affections] are quantities in themselves because they, as well as the [magnitudes] of which they are affections, are permanent, but neither of these affections, [change or time], is permanent; and also because the former affections are in the nature of [their subjects] and, if their subjects exist, they follow them everywhere, whereas change is no part of magnitude, but takes place in a magnitude. (Alexander, *In Metaph.* v 13, 398.34–39; transl. Dooley (1993) modified, my brackets)[71]

First he asks why Aristotle might have categorised time and change which are in fact *per se* 2 quantities as *per accidens* quantities. Well, Alexander suggests, Aristotle saw that they are not affections of their subjects in the same way as other *per accidens* quantities. What is their specific difference? The usual *per se* 2 properties are permanent, and the magnitudes they belong to also exist permanently, viz. they exist as wholes. Both change and time do not exist as wholes, but are different at any given moment. In that case the classification of change and time as a special type of accidental quantity highlights their peculiar fleeting nature. A further explanation focuses on the fact that the other *per accidens* quantities belong in the nature of their subjects, with the result that they exist whenever their subjects do. Change, on the other hand, is not part of what it is to be the magnitude it belongs to (the distance covered), but merely *supervenes on* such magnitude, if movement happens to occur at all. We have already seen that time only numbers change when a particular change has been defined by marking off an earlier and later that belong to change. From this perspective, time and change constitute a separate class of accidental quantities because their relation to their respective subjects is different from that of the other *per se* 2 quantities. The loosening of the bond between time and change which results from this discussion can be regarded as support for Alexander's view of time as a single undivided continuum in actuality whose pairings with the befores and afters in change are the result of incidental activities of an external mind applying its numbers.

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71   Alexander, *in Metaph* 398.34–39: ἢ ἃ καθ᾽ αὑτὰ μέν εἰσι ποσά, κατὰ συμβεβηκὸς λέγει, οὐ μὴν ὁμοίως τοῖς ἃ μή ἐστιν ὡς ποσῶν καὶ καθὸ ποσὰ πάθη. ἢ ἐκεῖνα μὲν ποσὰ καθ᾽ αὑτά, ὅτι ὑπομένει ὡς καὶ τὰ ὧν ἐστι πάθη, τούτων δὲ οὐδέτερον ὑπομένει. καὶ ὅτι τὰ μὲν ἐν τῇ φύσει ἐστὶν αὐτῶν, καὶ ὄντων ἕπεται καὶ αὐτὰ πάντως, ἡ δὲ κίνησις οὐ τοῦ μεγέθους τί ἐστιν, ἀλλ᾽ ἐπὶ μεγέθους γίνεται.

4   Conclusion

I have discussed Strato's remarks on time as independently as possible from the late sources that use him for their own agenda. It turns out that each of them can be interpreted as pointing the attentive reader of Aristotle to issues that need further clarification if Aristotle's treatment of time across different works (*Categories, Physics*, and *Metaphysics*) has to be shown coherent. We have seen that Alexander incorporates most of Strato's remarks in his short treatise *On Time* (albeit without mentioning Strato by name). I have argued that a precise formulation of Alexander's own theory of time requires clear decisions and/or further development of most of Strato's points in the light of the earlier Peripatetic and anti-Peripatetic traditions. We do not know whether Alexander knew he was relying on points Strato made, or was merely building on the specifications the Peripatetic tradition required of him. I hope to have shown that Alexander saw how important these demands for clarification were for the correct understanding of the notion of time in a Peripatetic framework.[72]