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The Stoic Ontology of Geometrical Limits

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Abstract

Scholars have long recognised the interest of the Stoics' thought on geometrical limits, both as a specific topic in their physics and within the context of the school's ontological taxonomy. Unfortunately, insufficient textual evidence remains for us to reconstruct their discussion fully. The sources we do have on Stoic geometrical themes are highly polemical, tending to reveal a disagreement as to whether limit is to be understood as a mere concept, as a body or as an incorporeal. In my view, this disagreement held among the historical Stoics, rather than simply reflecting a doxographical divergence in transmission. This apparently Stoic disagreement has generated extensive debate, in which there is still no consensus as to a standard Stoic doctrine of limit. The evidence is thin, and little of it refers in detail to specific texts, especially from the school's founders. But in its overall features the evidence suggests that Posidonius and Cleomedes differed from their Stoic precursors on this topic. There are also grounds for believing that some degree of disagreement obtained between the early Stoics over the metaphysical status of shape. Assuming the Stoics did so disagree, the principal question in the scholarship on Stoic ontology is whether there were actually positions that might be called "standard" within Stoicism on the topic of limit. In attempting to answer this question, my discussion initially sets out to illuminate certain features of early Stoic thinking about limit, and then takes stock of the views offered by late Stoics, notably Posidonius and Cleomedes. Attention to Stoic arguments suggests that the school's founders developed two accounts of shape: on the one hand, as a thought-construct, and, on the other, as a body. In an attempt to resolve the crux bequeathed to them, the school's successors suggested that limits are incorporeal. While the authorship of this last notion cannot be securely identified on account of the absence of direct evidence, it may be traced back to Posidonius, and it went on to have subsequent influence on Stoic thinking, namely in Cleomedes' astronomy.

Keywords

Stoic ontology, limits, incorporeals, fictional constructs, Posidonius, Cleomedes

1. Early Stoic Thought on Limits

We can start by taking account of some features of scholarly debate on early Stoic thinking about limit. In their broader debate on the school's doctrine of "somethings", scholars have sought to locate the status of limit on the Stoic ontological stemma; "somethings" represent for the Stoics the first genus of the stemma, subdivided, for instance in the scheme of Long and Sedley, into three species, incorporeals, bodies, and somethings (τινά) which are neither corporeal nor incorporeal, contrasted with "not-somethings" that lie outside the stemma.¹ The suggestion is that it is at least certain, and consistent with all extant evidence, that in Stoic ontology limit is not a body.² This negation, however, remains compatible with three different possibilities for the status of limits: that limits are somethings but neither corporeal nor incorporeal;³ are not-somethings;⁴ and are incorporeal somethings. Hence, scholars tend to categorise limits as one or other of these, inferring that for the early Stoics limits are no more than purely mental constructs.

But this categorisation and inference remain controversial, because of the absence of direct sources, and, more importantly, also because they are put in doubt by a competing attestation from Simplicius. The Stoics,

¹ The scheme of the early Stoic ontological stemma was drawn up by A. A. Long and D. N. Sedley, *The Hellenistic Philosophers*, 2 vols (Cambridge, 1987), 1.163, and by J. Brunschwig, "The Stoic Theory of the Supreme Genus and Platonic Ontology", in J. Brunschwig, *Paper in Hellenistic Philosophy* (Cambridge, 1994), 92-157, at 96-7 and 103.

² For detailed discussion of this suggestion, see Brunschwig (1994), 97.

³ Long and Sedley (1987), 1.163-5. In Long and Sedley's scheme limits fall under a third, neutral species as somethings which are "neither corporeal nor incorporeal", located inside the stemma of "somethings". Long and Sedley's scheme attributes to limits the same status as fictional entities such as centaurs, speaking of them as "two prominent examples" of pure thought-constructs. This attribution presupposes that the Stoic dichotomy of body and incorporeals does not exhaust the first genus of somethings; and that the word "subsist" was used by the Stoics not just of the first two species but of that third species also. But recently D. N. Sedley, "Stoic Metaphysics at Rome", in R. Salles (ed.), *Metaphysics, Soul, and Ethics in Ancient thought* (Oxford, 2005), 117-42, at 124, n. 18 offers a suggestion which enables us slightly to modify the scheme in that edition (1.163), on the grounds that at least on the version of Stoic metaphysics presented at Sen. *Ep.* 58.15 (n. 20) "subsistence" is denied to fictional entities: "In saying this, I am modifying remarks on the same issue made in LS i. 164". I agree with Sedley; yet, despite his suggestion, the question whether on that version "subsistence" is also denied to limits remains unanswered.

⁴ Brunschwig (1994), 96-7 and 103.

according to this attestation, viewed shapes (σχήματα) as bodies (σώματα).⁵ Although I will give close consideration to this Stoic view, it appears difficult, in light of Simplicius' evidence, to infer that the attribution to limits of the status of mental constructs was a general Stoic dogma. Further, the remaining Stoic material treating limit as a non-body reveals a serious doxographical disagreement. These writings draw attention to the difficult problem of the ontological status of limit and, more specifically, of shape in Stoic thinking. Therefore, I will address the question of this disagreement first, before proceeding to treat early Stoic thought on limit.

Possibly it was common among ancient writers to identify shape (σχήμα) with surface (ἐπιφάνεια), that is, with the limit of a body, as Aëtius' doxography shows; at *Meno* 76a Plato also defines shape as the limit of a solid.⁶ Whether or not the Stoics were encouraged by this Platonic passage, such an identification also appears to have been a common practice in the Stoic school. According to Proclus, the Stoics advanced the claim that limits "subsist in mere thought" (κατ' ἐπίνοιαν ψιλὴν ὑφεστάναι), meaning by "limits" those of bodies.⁷ Posidonius on the other hand offered the following idiosyncratic description of surface as "both in thought and as subsistent" (καὶ κατ' ἐπίνοιαν καὶ καθ' ὑπόστασιν), at least according to Diogenes Laertius' doxography.⁸ In the lines following his statement that for the Stoics "the limit is not a body", Plutarch describes a limit as "incorporeal" (ἀσώματος) for the school.⁹ Cleomedes defines the "surface" of our bodies likewise as "incorporeal"; and although Sextus Empiricus cites a Stoic list of four types of incorporeals – sayables, void, place and time,¹⁰ elsewhere

⁵ Simp. *In Ar. Cat.* 271.20-2 (SVF 2.383) (see n. 29).

⁶ Aët. *DG* 312a 9-10, 312b 12-13: σχήμα ἐπιφάνεια καὶ περιγραφή καὶ πέρας σώματος. Pl. *Men.* 76a6-7: ὅπερ ἂν συλλαβὸν εἶποιμι στερεοῦ πέρας σχήμα εἶναι.

⁷ Procl. *In Eucl. def.* 1.1.89.15-21 (SVF 2.488, part): "[...] we should not hold that such limits, I mean those of bodies, subsist in bare thought, as the Stoics supposed (ὅτι δὲ οὐ δεῖ νομίζειν κατ' ἐπίνοιαν ψιλὴν ὑφεστάναι τὰ τοιαῦτα πέρατα, λέγω τῶν σωμάτων, ὡςπερ οἱ ἀπὸ τῆς Στοᾶς ὑπέλαβον) [...]" (tr. by LS 50D, modified).

⁸ D. L. 7.135 (Fr. 16 EK) (see n. 37).

⁹ Plut. *Comm. not.* 1080e (SVF 2.487): "How then do they themselves avoid this trap, seeing that they allow no last or first part? Why, because they say that bodies touch each other by means of a limit, not by means of parts. But the limit is not a body. So body will touch body with something incorporeal, and again will not touch, since something incorporeal is in between (τὸ δὲ πέρας σῶμα οὐκ ἔστιν. ἄψεται τοίνυν σῶμα σώματος ἀσωμάτω καὶ οὐχ ἄψεται πάλιν, ἀσωμάτου μεταξὺ ὄντος)" (tr. by LS 50C).

¹⁰ S. E. *M.* 10.218 (SVF 2.331).

in his treatise Cleomedes adduces an idiosyncratic list of incorporeals, where “surface” occurs alongside “time” and “sayable”.¹¹

This doxographical disagreement remains of substantive as well as academic interest, and it has given rise to extensive debate among scholars. Kidd thinks that the evidence of Proclus and Plutarch represents a line of general Stoic thought, contrasted with that of Diogenes.¹² Long and Sedley, however, give greater credence to Proclus’ evidence as endorsing Diogenes’ evidence, on the grounds that these two are more reliable than Plutarch’s evidence and that the context of Plutarch’s evidence is too polemical.¹³ I cannot agree with these scholars’ treatments of the reports. Leaving aside the fact that Proclus’ evidence is also polemical in context, it is unfair to discount Plutarch’s evidence on this specific issue, insofar as it preserves intact Stoic terminology for the idea of limit. Besides, as far as limit is concerned, Proclus and Diogenes are no more compatible than Proclus and Plutarch. Proclus describes limits as “subsisting in mere thought” for the school, while Diogenes preserves Posidonius’ description “both in thought and as subsistent”. However, the latter sense, as explained below, does not equate with the former. Further, Proclus’ words “in mere thought” cannot legitimately be associated with “subsisting”, because, as the evidence shows, for Stoicism things which are in mere thought such as concepts (ἐννοήματα) do not subsist (ἀνυπόστατα).¹⁴ The possibility therefore remains that Proclus’ description is at least partly non-Stoic. If we suppose that the Stoic source on which Proclus drew intended to say simply, for instance, “in thought only”, then this expression, whatever it meant for him, would differ significantly from Posidonius’ description.

There is further debate, in light of Proclus’ reference, over whether the Stoics adopted the term “subsist” to denote the mode of limits as mental constructs.¹⁵ In attempting to resolve this question, we need first to take

¹¹ Cleom. *De motu* I 1.139-44, p. 6 Todd (p. 16.2-5 Ziegler), I 1.113-20, p. 5 Todd (see nn. 31, 33).

¹² I. G. Kidd (ed.), *Posidonius: the Commentary*, 2 vols (Cambridge, 1988), 1.532, 1.126.

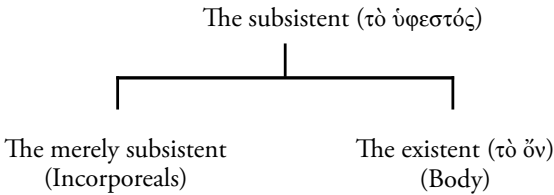
¹³ Long and Sedley (1987), 2.299 suggest that “Posidonius’ view” cited by D.L. 7.135 (n. 8) “is just the standard Stoic view cited” by Proclus (n. 7). It is difficult to accept Long and Sedley’s suggestion for reasons explained above.

¹⁴ S. E. M. 1.17 (*SVF* 2.330).

¹⁵ While Brunschwig (1994), 96-7 ascribes to limits the same status as that of concepts, alongside fictional individuals, as characterised by “no subsistence”, Long and Sedley (1987), 2.299 insist that in having “subsistence”, limits “differ from those other mental constructs, universals, which do not even subsist”.

account of certain features of the Stoic use of this term more generally. It is beyond doubt that the term and its cognates came to be applied by ancient writers to corporeal things such as the Epicurean “void”, a usage apparently shared by the Stoics.¹⁶ But normally the Stoics used the term broadly, while at the same time specifying it as designating the mode of reality proper to incorporeals. That is, rather than presuming two different senses of the term, it may be that Stoic ontology offers only one sense, conveying a type of reality sufficiently broad to include both incorporeals and body – namely “the subsistent” (τὸ ὑφεστός), taken here as equivalent to another Stoic term “what is real” (τὸ ὑπάρχον).¹⁷ Further, the Stoics seem to have employed a genus-species homonymy for the term, regarding it as the genus whose species are (a) the merely subsistent, namely incorporeals, and (b) that which is existent as well, namely body.

Scheme 1. “The subsistent” in Stoic ontology



¹⁶ Plut. *Adv. Col.* 1109a5-10 uses the expression ὑπόστασιν ἰδίαν ἔχοντας in describing the Epicurean “void”. Alex. *Mix.* 217.32-218.10 preserves the Stoic wording τὴν ψυχὴν ἰδίαν ὑπόστασιν ἔχουσιν, suggesting that Chrysippus’ “supporters” used the term ὑπόστασις for a corporeal soul. Simp. *In Ar. Cat.* 214.24-37 preserves the phrase ὅστε ἐπὶ τινα ὑπόστασιν ἐλθεῖν μιᾶς ἕξεως. D. L. 7.149: μαντικὴν ὑφεστάναι πᾶσάν and ὁ μὲν γὰρ Παναίτιος ἀνυπόστατον αὐτὴν is also another good attestation for the Stoic use of the term for the subsistence of divination. Cleomedes used the term likewise for “body” (namely “a thing”, “planets” and “animals”) at *De motu* II 1.336-8, 1.364, 1.402, pp. 55-6, 58 Todd (pp. 152-6 Ziegler), not just for “void” at *De motu* I 1.20-4; 1.64-7, p. 2-3 Todd (pp. 4, 8 Ziegler), 8.10-14 (*SVF* 2.541). For Posidonius’ use of the term for corporeal entities, see n. 43.

¹⁷ For the Stoic terminology of τὸ ὑπάρχον and τὸ ὑφεστός, see D. L. 7.46, 7.50; Gal. *Meth. med.* 10.155.1-8 (*SVF* 2.322); V. Goldschmit, “ὑπάρχειν et ὑφεστάναι dans la philosophie stoïcienne”, *Revue des Etudes Grecques* 85 (1972), 331-44, at 331-4; A. A. Long (ed.), *Problems in Stoicism* (London, 1971, 1996²), 75-113, at 88-90.

There is little reason to doubt that late Stoics used the term “subsistent” with this double meaning, since we see the employment of such genus-species homonyms for terms as a common practice within the school.¹⁸

This classification of the Stoic “subsistent” permitted the Stoics to apply the term to a body, although, if pressed, they would probably have been willing to say that a body is strictly speaking “existent”. The Stoics were, however, the first to use the term “subsistent” in a technical sense to refer to incorporeal “somethings”. Sextus may be accurate in citing the Stoics as normally providing only “four types” of incorporeals, as stated above. In this specific use of the term the Stoics intended to designate the ontological status of incorporeals in the school’s stemma, holding the view that those incorporeals, such as sayables, while they are not bodies, are an ineliminable part of the world’s objective structure.¹⁹

Taking this classification of the Stoic “subsistent” into account, it is reasonable to suppose that the Stoics avoided using the term for mental constructs. Seneca, at *Ep.* 58.15, provides evidence for this Stoic denial in the context of a discussion of fictional entities.

Some Stoics think that the first genus is something (*quid*), and I shall explain why they think so. In the world’s nature, they say, some things are (*quaedam sunt*), some are not (*quaedam non sunt*). Yet even these things which are not are included in the world’s nature (*et haec autem quae non sunt rerum natura complectitur*) – things which strike the mind, such as centaurs, giants, and whatever else, formed by false thinking, begins to have some image although it has no subsistence (*quamvis non habeat substantiam*).²⁰

Any residual uncertainty as to its context notwithstanding, in this letter Seneca, without a word of commentary or criticism, presents a version of

¹⁸ B. Inwood, *Ethics and Human Action in Early Stoicism* (Oxford, 1985), 225, 322, n. 3, basing himself on D.L. 7.78, cites this Stoic practice in the cases of “impulse” (Stob. *Ecl.* 2.86.17-87.6) and “impression”, and Long and Sedley (1987), 1.376 in the case of the ethical term “*hexeis*” with regard to “virtues” (Stob. *Ecl.* 2.70.21-71.6, 2.73.1-13). There are many other examples for this Stoic practice, such as “conceptions” (Aët. *Plac.* 4.11.1-4), “*hexis*” in a physical context (S. E. *M.* 9.81-5), “nature” (D.L. 7.148) and “soul” (S. E. *M.* 7.234).

¹⁹ Cf. D. N. Sedley, “Hellenistic Physics and Metaphysics”, in K. A. Algra, J. Barnes, J. Mansfeld, M. Schofield (eds.), *The Cambridge History of Hellenistic Philosophy* (Cambridge, 1999), 355-411, at 400-2.

²⁰ Sen. *Ep.* 58.15 (*SVF* 2.332, part) (tr. by Sedley (2005), 124).

Stoic metaphysics. The letter begins with the usual Stoic identification of “something” as the first genus of the school’s ontological stemma, and proceeds to cite a classification of its species, which gives rise to three main implications.

First, on the version of Stoic metaphysics referred to by Seneca the two species of something, however vaguely expressed in Seneca’s Latin, correspond, in my view, to the subsistent and the non-subsistent (not the existent and the non-existent, as more commonly supposed).²¹ That is, in this classification Seneca’s words *quaedam sunt* capture the Stoic Greek *τινά ὑπάρχει*, whose species are body and incorporeals. Seneca’s expression *quaedam non sunt* seems therefore naturally to refer to “what is not subsistent” for the Stoics; only this designation explains why, when it comes to illustrating *quaedam non sunt*, the authors of this Stoic classification refer not to incorporeals but to fictional constructs such as “centaurs”. Second, in context Seneca’s expression *quaedam non sunt* also corresponds to the description *quamvis non habeat substantiam*; the word *substantia* may be taken to translate the Stoic Greek *ὑπόστασις* in the broad sense explained above.²² The implication here is that in this Stoic categorisation “subsistence”, while attributed correctly to incorporeals like space and time, as Sedley writes, “is denied to merely fictional entities, which not only are not bodies but do not so much as subsist”.²³ Third, the authors of this classification impose no bar on fictional entities being an instance of somethings, while denying their subsistence; had they thought them to be not-somethings, they would not have described them as things which “are included in the world’s nature”, especially since in the lines previous to this description Seneca refers by “nature” explicitly to “something”.

This classification, attributed by Seneca to “some Stoics”, might not have followed general Stoic ontology in every detail. Leaving aside the question of Seneca’s Stoic source, the question arises in what aspects, if any, they took non-standard positions within Stoic theory.²⁴ In fact, Seneca’s letter

²¹ My reading of Sen. *Ep.* 58.15 on this point disagrees with Brunschwig (1994), 110-15.

²² On my reading of the word *substantia* at Sen. *Ep.* 58.15, Seneca is “not following the restricted Stoic use of *ὑπόστασις*” as Long and Sedley (1987), 2.167 also point out; but he appears to adopt the broad sense of the Stoic term as explained above.

²³ Sedley (2005), 124, n. 18.

²⁴ The Stoic position presented in Sen. *Ep.* 58.15 is more complex than I indicate, though this does not affect the points I have made above. For two studies of Seneca’s letter, see Brunschwig (1994), 110-15; Sedley (2005), 117-42.

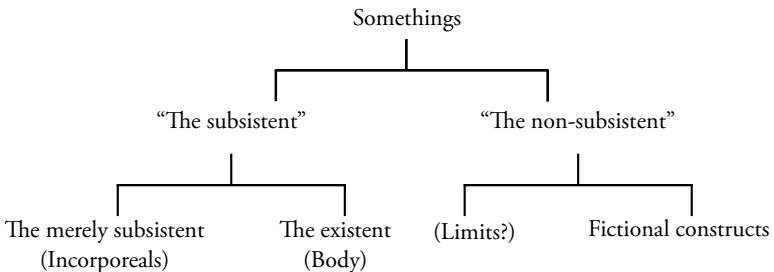
provides good reason to believe that at least on this version of Stoic metaphysics the division of somethings into body and incorporeals is not exhaustive, instead including the third species fictional entities, which do not subsist but remain some sort of somethings. Lack of evidence prevents us from determining conclusively whether this inclusion characterises the thinking of the early Stoics.²⁵ But the Stoic categorisation suggested in Seneca's letter, I think, incorporates a probably early Stoic classification of the subsistent (as drawn out in scheme 1 above); its refusal to extend "subsist" to fictional constructs also appears to accord with Stoic thinking.²⁶

In view of the above evidence, it would not be difficult to infer that the Stoics, normally, likewise avoided using "subsist" of limits, insofar as they classified limits as mental constructs, alongside fictional entities. The evidence remains too meagre for us to work out the details, but from such evidence as exists we can highlight at least a few aspects of their debate. Chrysippus associated "surface, line, place, void and time" under the common title of "things comparable to bodies" (τὰ τοῖς σώμασι προσεικτότα).²⁷ This title may imply that for Chrysippus all five items are not bodies but abstractions from bodies, dependent on bodies as well as on thought (he might even have called them literally, for example, "things which are body-less"). But it would be difficult to infer that Chrysippus assigned to limits the same ontological status as to incorporeals. Instead, recalling Stoic reac-

²⁵ Plausible grounds for this inclusion seem to lie in the idea that, for instance, a centaur deserves to be taken to name something, because a centaur as a figment of soul is non-subsistent, while the expression "a centaur" is significant, unlike, for instance, the expression "blituri", which is in no sense significant, as reported by D. L. 7.57.

²⁶ Thus, the following scheme plausibly summarises the Stoics' concepts suggested at Sen. *Ep.* 58.15.

Scheme 2. The Stoic ontological stemma at Sen. *Ep.* 58.15



²⁷ Stob. *Ecl.* 1.142.2 (*SVF* 2.482).

tion to the Zenonian “dichotomy” motion paradox, as reported by Sextus, the suggestion that the early Stoics viewed limits – such as the series of half-way points on a journey – as being only thought-constructs seems more plausible.²⁸

Taking these aspects into account, the solution to the doxographical disagreement discussed above is, I suggest, to view Plutarch’s evidence as broadly congruent with Cleomedes on incorporeal limit, as I shall explain below, while deciding that the conception of limit reported by Proclus belongs, more loosely, to the early Stoics. In this sense Proclus’ expression “in mere thought” can be taken to reflect a standard Stoic language of limit, while his word “subsist”, linked with this expression, is a non-Stoic insertion by Proclus’ own hand.

The discussion above leaves unanswered, however, the question of the Stoic orthodoxy on the idea of shape referred to by Simplicius, as mentioned earlier. In a passage of his commentary, drawing a comparison of various views on the metaphysical status of shape, Simplicius states:

Nor, on the other hand, does the doctrine of the Stoics agree with Aristotle’s doctrine about shapes, when they say that shapes too, like other qualified things, are bodies.²⁹

This is a very important piece of evidence for the Stoic thesis, largely neglected by scholars, that shape is a body. The source on which Simplicius drew is unknown. There are, however, grounds for believing that the idea in question was a standard one. This is, in the first instance, because Simplicius, when he compares Stoic doctrines with those of other schools, normally cites the mainstream Stoic position. Also, Simplicius typically refers to a Stoic by name (or at least says “certain Stoics”), when he cites a non-standard account.³⁰

²⁸ S. E. M. 10.121-6, 10.139-42. Long and Sedley (1987), 1.303-4 and Sedley (1999), 390-5 suppose that the early Stoic idea of limits as pure thought-constructs was probably their favoured answer to the Zenonian “dichotomy” motion paradox, a suggestion I tend to follow.

²⁹ Simp. *In Ar. Cat.* 271.20-2 (*SVF* 2.383): ἀλλ’ οὐδὲ ἡ τῶν Στωικῶν δόξα λεγόντων σώματα εἶναι καὶ τὰ σχήματα, ὡσπερ καὶ τὰ ἄλλα ποιὰ, συμφωνεῖ τῇ Ἀριστοτέλους δόξει περὶ σχημάτων.

³⁰ For Simplicius’ reports of general Stoic accounts, see esp. *SVF* 2.378, 389, 391, 393, 395, 403, 535, 627 and LS 37K; of a specific, or a non-standard, Stoic account, *SVF* 2.390, 2.510, and F18, F93a, T73, T100 EK.

Simplicius' reference, then, probably alludes to a regular Stoic thesis. In placing limit the early Stoics presumably faced a choice between (a) treating shape as a mere thought-construct and (b) equating it with the body whose shape it was; option (a), however, would have had bizarre consequences, for instance, in making the spherical shape of the world a mere thought-construct, which would therefore be non-subsistent. They seem therefore, intelligibly, to have chosen option (b), while leaving the crux unsettled for their successors.

2. Posidonius and Cleomedes on Limits

The next stage of my exposition relates the views of limit offered by late Stoics, notably Posidonius and Cleomedes, to the line of Stoic thought they probably inherited regarding limit, in which the early Stoics purportedly developed two differing accounts of shape, on the one hand, as a thought-construct, and, on the other, as a body.

Cleomedes, to take him as a starting-point, is well-known for defining limit, especially surface, as incorporeal, when he states: "Everything that is limited has its limit in something different in kind, different, that is, from the thing that is limited. For instance [...] our bodies too similarly border onto something different in kind, their surface, which is incorporeal (ἀσώματος)".³¹ Cleomedes may have known the Stoic list of the four types of incorporeals presented above, which can be plausibly attributed to mainstream Stoics.³² In another passage of his treatise however, as noted earlier, arguing for the subsistence of the extra-cosmic void Cleomedes adduces an idiosyncratic list of incorporeals, including "surface": "Thus, if the extra-cosmic void is limited, and at all events enclosed by the agency of something, yet not enclosed by the agency of body, it will be enclosed by the agency of an incorporeal something (ὑπὸ ἀσώματου). So what will this be? Time? Surface? A sayable? Something else like them?"³³ Cleomedes' list remains open-ended, adding the words "something else like them". It is possible that by these words he meant place, which he leaves unmentioned,

³¹ Cleom. *De motu* I 1.113-20, p. 5 Todd (p. 14.2 Ziegler) (tr. by Bowen and Todd, modified).

³² See n. 10.

³³ Cleom. *De motu* I 1.139-44, p. 6 Todd (p. 16.2-5 Ziegler) (tr. by Bowen and Todd, modified).

or limits other than surface, or he may have had all these things in mind at once.³⁴ We can thus draw up two Stoic lists of incorporeals from the above material.

Scheme 3. Two Stoic lists of incorporeals

S. E. M. 10.218: “sayable”, “void”, “place”, “time”

Cleom. *De motu* I 1.139-44: “surface”, “time”, “sayable”, etc.

Cleomedes’ list above suggests that in Stoicism at least one alternative list of incorporeals existed, in which geometrical limit also figured.

It is reasonable on this basis to suppose that in the statement to the effect that limit is for the Stoics not a body but an incorporeal, Plutarch presents a line of Stoic thought similar to that of Cleomedes, rather than providing non-Stoic material.³⁵ But Cleomedes was not the Stoic source on which Plutarch drew (on the assumption of his predating Cleomedes). However, despite our uncertainty regarding Plutarch’s Stoic source, it is reasonable to suppose that the idea of limit’s incorporeality mentioned by Plutarch had been suggested by the Stoics before Cleomedes’ use of it. Leaving aside the difficulty of finding a good candidate for the idea’s authorship, we are at a loss to flesh out this Stoic theory with any substantial textual evidence. This lack of direct evidence prevents us from fully recovering the terms of the debate inherited by Cleomedes regarding surface, and even from determining whether such a debate existed at all.

In outlining a plausible theory by which Cleomedes argued for the incorporeality of surface, it seems helpful, however, to illuminate Posidonius’ treatment of limit, as the extant evidence presented below bears out Posidonius’ preoccupations with a theory of shape and, more generally, of all geometrical limits.³⁶ Any detailed consideration of Posidonius’ treatment

³⁴ Brunschwig (1994), 96. R. Goulet, *Cléomède, théorie élémentaire* (Paris, 1980), 186, n. 52 suggests that “surface” would in that case be subordinated, for instance to place, or might even be identified with it. I do not agree with this line of argument; for, as Gal. *Qual. inc.* 19.464.10-14 (*SVF* 2.502) reports, for the Stoics “place”, like “void” and “body”, represents a three-dimensional entity.

³⁵ Cf. n. 9; Sedley (1999), 401.

³⁶ For Posidonius’ discussion of mathematical beings, see D. L. 7.135 (Fr. 16 EK) (n. 37); Procl. *In Eucl. El.* 143.5-144.5 (Friedlein) (Fr. 196 EK) (n. 44); Gerard of Cremona, *In Eucl. Opera* (Curtze), p. 3.23 (Fr. 199a EK); Plut. *De an. procr.* 1023b-c (Fr. 141 EK); Theo Sm. *Exposito Rerum Math.* 103.16-104.1 Hiller (Fr. 291 EK).

of limit should begin with an examination of the report of a text by Diogenes Laertius.

A surface is the limit of a body, or that which has only length and breadth without depth. This Posidonius in his *On Celestial Phenomena* book 5 retains both in thought and as subsistent (καὶ κατ' ἐπίνοιαν καὶ καθ' ὑπόστασιν). A line is the limit of a surface, or length without breadth, or that which has length alone. A point is the limit of a line – the smallest marker.³⁷

This evidence attests that in defining surface as the limit of a body Posidonius gave the description “both in thought and as subsistent”,³⁸ presumably as an ontological qualification. Bearing in mind that early Stoic ontology gave no such description for limit, an immediate response might be to suggest that in the location of limit on the school’s ontological stemma some degree of disagreement obtained between Posidonius and earlier Stoics.³⁹

But even if we entertain a hypothesis of disagreement, Mansfeld’s suggestion that the disagreement involved Posidonius’ conceiving surface as a body seems unwarranted, as his suggestion was grounded on a more probably Epicurean attestation from ps.-Galen.⁴⁰ Kidd alleges likewise that Posidonius held to a conception of limit as corporeal, by reference to the reports of texts by Proclus and Plutarch, as well as that of Diogenes above.⁴¹

³⁷ D. L. 7.135 (Fr. 16 EK) (tr. by LS 50E).

³⁸ A serviceable translation of Posidonius’ words καθ' ὑπόστασιν is “as subsistent”, though the term could also mean “in reality”. Cf. Long and Sedley (1987), 1.299 (“as subsistent”); A. C. Bowen and R. B. Todd, *Cleomedes’ Lectures on Astronomy: A Translation of The Heavens* (California, 2004), 23, 25 (“in subsistence”); S. White, “Posidonius and Stoic Physics”, in R. Sorabji and R. W. Sharples (eds.), *Bulletin of the Institute for Classical Studies*, Suppl. vol. 94: *Greek and Roman Philosophy 100 BC to 200 AD* (2007), 35-76 at 52 (“in subsistence”).

³⁹ The evidence from D. L. 7.135 above, in my view, does not necessarily suggest that in analysing mathematical objects “Posidonius maintains the Stoic alliance with Aristotle against Plato” as White (2007), 52 supposes, for reasons explained above.

⁴⁰ Mansfeld, “Zeno of Citium: Critical Observations on a Recent Study”, *Mnemosyne* 31 (1978), 134-78, at 160-2 and 166. Mansfeld suggests Posidonius’ thesis as the highly unorthodox one that a surface is a body, and links it with the doctrine that limits are bodies, reported without specific attribution by ps.-Gal. *Hist. phil.* 23 (DG. p. 613.1-2). Long and Sedley (1987), 2.299 already denied this suggestion on the basis that “the ps.-Galen reference could be to the Epicureans”.

⁴¹ I outline Kidd’s account suggested in his *Commentary*: “Although orthodox Stoicism held that limits exist in thought only (κατ' ἐπίνοιαν, Proclus, *In Euc. Def.* I, p. 89F = *SVF* II.488), Posidonius believed that they existed in reality too (καθ' ὑπόστασιν, see F16 [D. L. 135])” (1.531-2). Elsewhere Kidd adds: “But the Stoics also thought that mathematical

Without citing Kidd's account in full, we may note that it advances two major suggestions. First, in Kidd's view, while for the early Stoics limit is merely a concept, for Posidonius it is corporeal as well as conceptual, given that Posidonius employs for surface the term ὑπόστασις in a familiar sense conveying existence in broad terms. Further, according to Kidd, this Posidonian conception of surface is closely connected with his view of shape as a "corporeal containing limit". Kidd concludes that this Posidonian conception of limit, so understood, was heretical, and appears to have had no subsequent influence on the school.⁴² However, Kidd's suggestions demand further discussion in light of a doxographical disagreement explained below.

In clarifying the meaning of the description "both in thought and as subsistent" for Posidonius, we should particularly remember that, for him as for the early Stoics, "subsist" itself does not necessarily entail incorporeality, as the term conveys a type of reality sufficiently broad to include both incorporeals and body, as noted earlier. Posidonius seems to have taken no significant exception to such a formulation.⁴³ Taking due regard of this

limits (surface, line, point) were not corporeal (σώματα), but merely concepts (κατ' ἐπίνοιαν φιλήν). This is clear from Plutarch (*Comm. Not.* 1080E [...]), Proclus, *In Eucl.* (SVF II.488; II.365), and from the doxographies (Stobaeus, SVF II.482; cf. also Cleomedes, *De Motu* I.1.7, p. 14.2 Ziegler) [...]. Posidonius' move to regard plane surface as existing in reality as well as being conceptual is therefore heretical, and appears to have had no subsequent influence on the School. [...]t appears to be closely connected with Posidonius' views on σχῆμα (shape or form), as the corporeal containing limit, which is the cause of the definiteness, limitation and inclusion of that which is contained or limited (F196 [Procl. *In Eucl. El.* 143.5-144.5])" (1.126). See also Kidd (1988), 1.125-7, 1.343, 1.531-2, 2.706-7, 2.982; (1999), 16.

⁴² See also H. Cherniss (ed.), *Plutarch's Moralia XIII*, 2 vols (Harvard: MA, 1976), 2.219; W. Theiler (ed.), *Poseidonios, Die Fragments*, 2 vols (Berlin, 1982), 1.200-1; G. Reydams-Schils, "Posidonius and the *Timaeus*: Off to Rhodes and Back to Plato?", *CQ* 47.2 (1997), 466-8; F. Ferrari and L. Baldi (eds.), *La generazione dell' anima nel Timeo* (Napoli, 2002), 278. *Contra*, see A. E. Ju (2006), "Posidonius on Incorporeal Limits", *The Journal of Greco-Roman Studies* 25 (2006), 329-58; White (2007), n. 53.

⁴³ Ar. Did. *Epitome* Fr. 20 (Stob. *Ecl.* 1.2.5c = *DG* p. 458) (Fr. 92 EK): διαφέρειν δὲ τὴν οὐσίαν τῆς ὕλης, τὴν οὖσαν κατὰ τὴν ὑπόστασιν, ἐπινοία μόνον; *Epitome* Fr. 27 (Stob. *Ecl.* 1.20.7 = *DG* p. 462) (Fr. 96 EK): ἐπὶ δὲ τῶν ἰδίως ποιῶν φησι δύο εἶναι τὰ δεκτικὰ μόρια, τὸ μὲν τι κατὰ τὴν τῆς οὐσίας ὑπόστασιν, τὸ δὲ τι κατὰ τὴν τοῦ ποιοῦ. For two recent studies of this material, see White (2007), 44-7; F. Alesse, "La dottrina della sostanza in Posidonio di Apamea", in A. M. Ioppolo and D. N. Sedley (eds.), *Pyrrhonists, Patricians and Platonists* (Naples, 2007). The evidence is difficult to interpret and I attempt no direct treatment of it here. But it is sufficient to note that in Arius' reports the term ὑπόστασις

Stoic usage, then, it would seem conceivable that by the expression “as subsistent” Posidonius did not intend to exclude limit’s corporeality. This assumption is supported by the evidence from Proclus.

Posidonius defines shape (σχῆμα) as enclosing limit (πέρας συγκλείων), separating the definition of shape from quantity and making it cause of determination, limitation and containing. For that which encloses is different from what is enclosed, and limit from what is limited.⁴⁴

In this evidence the term “shape” as well as “enclosing limit” seems largely to have the same reference as the Posidonian term “surface” suggested in Diogenes’ doxography above. On the basis of Proclus’ expression “cause” (in the phrase “cause of determination, limitation and containing”), the attribution to Posidonius of a conception of corporeal limit would make some sense in that, for him as for early Stoics, every cause is “existent and a body”.⁴⁵ Kidd, in his commentary, makes a similar point to this regarding Proclus’ testimony, which makes it all the harder to understand how and why Kidd restricts his characterisation to Posidonius’ concept of “plane surface only”.⁴⁶

Still, the characterisation offered by Kidd seems contentious, since we see that Posidonius was also capable of adopting the more narrow sense of the Stoic term “subsist” just now explained. Bearing in mind that by this term used in its narrow sense the Stoics referred to the ontological status of incorporeals, the assumption that Posidonius used the term of surfaces in this narrow sense allows us to conjecture that he did not dissent significantly from the view of limits, too, as subsistent incorporeals. This

seems to refer to “subsistence” in the broad terms explained above, which Posidonius used of two, typically Stoic, corporeal items “substance” and “qualified individuals”.

⁴⁴ Procl. *In Euc. El.* 143.5-144.5 (Friedlein) (Fr. 196 EK, part) (tr. by Kidd): ὁ δὲ Ποσειδώνιος πέρας συγκλείων ἀφορίζεται τὸ σχῆμα τὸν λόγον τοῦ σχήματος χωρίζων τῆς ποσότητος καὶ αἴτιον αὐτὸν εἶναι τιθέμενος τοῦ ὀρίσθαι καὶ πεπεράσθαι καὶ τῆς περιοχῆς. τὸ γὰρ κλείων ἕτερον ἐστὶ τοῦ συγκλειομένου καὶ τὸ πέρας τοῦ πεπερασμένου.

⁴⁵ Ar. Did. *Epitome* Fr. 18 (Stob. *Ecl.* 1.13.1c = *DG.* p. 457) (Fr. 95 EK): “Posidonius put it this way: cause is defined as cause of something; or as the first activator; or as the originator of action. And cause is existent and a body (καὶ τὸ μὲν αἴτιον ὄν καὶ σῶμα)” (tr. by Kidd, modified).

⁴⁶ Kidd (1988), 1.127 argues on the basis of the word ταύτην at D. L. 135 that the evidence explicitly “connects Posidonius’ theory of mathematical reality with plane surface only, and not with all mathematical πέρατα or limits’, a suggestion I do not follow.

conjecture is grounded on the inference that Posidonius would not have adopted for surface the description “both in thought and as subsistent”, had he taken it to be corporeal, for the following two reasons.

First, Posidonius would have preferred the words “as existent”, for example, to the words “as subsistent”, since the former term specifically indicates corporeality, whereas the latter in itself does not. Further, though he might thereby have better argued for a limit’s corporeality, the reason why, in that case, he conceived existents as two-dimensional would have remained unclear, since in Stoic terms a “body” corresponds to a three-dimensional existent. Second, and more importantly, Posidonius would have had little reason to adopt the words “(being) in thought” as an ontological qualification with regard to surface; in Stoic terms a “body” receives no such qualification, since the expression “(being) in thought”, in Stoic usage, insofar as it designates a thing’s ontological qualification, conveys a mode of reality without bodily existence; nor would limit require the same qualification, were it a body.

Attention to the meaning of the Posidonian description “both in thought and as subsistent” suggests that, holding to a view that limits are incorporeal (not corporeal, as more commonly supposed), Posidonius may have adopted the description to locate limits on the Stoic ontological stemma as a fifth independent instance of incorporeals. That is, what Posidonius may have intended in this combined terminology was to claim that limits not only are in thought but also subsist objectively. If this is right, this Posidonian conception of incorporeal limit would seem to have been highly influential in determining the basis for Cleomedes’ astronomy, which based itself in general on Posidonius’ astronomical theory.⁴⁷ We are further warranted in positing this affiliation on the strength of the occurrence in the Cleomedes passage above of a Posidonian distinction between what limits and what is limited. Cleomedes moreover was probably following Posidonius when he used “subsist” in particular of “arctic circles that enclose stars”.⁴⁸ It is possible that, for both Cleomedes and Posidonius,

⁴⁷ For Posidonius’ legacy in Cleomedes’ astronomical treatise, see Cleom. *De motu* II 7.126 (T57 EK): “Enough has been said about these matters for the present. These lectures do not comprise the opinions of the author himself, but have been gathered from works both ancient and more modern. The greater part of what has been said has been taken from works of Posidonius” (tr. by Kidd). See also Cleom. *De motu* I 6.31-3 (Fr. 210 EK); Bowen and Todd (2004), 5-18, 23, 25, 29; White (2007), n. 52.

⁴⁸ Cleom. *De motu* I 3.34-5, p. 15 Todd: καὶ οἱ ταῦτα [ἄστρον] περιέχοντες ἄρκτικοί

these circles are geometrical abstractions from the stars' cyclical circular motion, not merely fictional constructs, but rather real and objective parameters of celestial phenomena, based on variation with the observer's latitude.

Consideration of this plausible theory by which Cleomedes and Posidonius might have held to the idea of limit's incorporeality suggests that the word "cause" used of shape in the Proclus passage above may not have derived from Posidonius. In fact, as in the Plutarch passage where he suggests that a limit as an incorporeal is "in between" bodies,⁴⁹ in the Cleomedes passage above there is no sign that Cleomedes himself takes surface as a cause (or, by implication, a body). Instead, Cleomedes describes limit simply as "something different in kind" by which a thing is limited or on which it "borders"; although in another passage noted above he uses the word ὑπό in the phrase "by the agency of an incorporeal something" (ὑπὸ ἀσώματου),⁵⁰ this word hardly conveys a cause in Stoic usage. If the terms of the debate inherited by Cleomedes did rest on a Posidonian conception of limit, it is more likely that, in attributing to shape determination, limitation and containing, Posidonius himself did not intend to take it as a cause or a body in the Stoic sense. Weighing these considerations, the best solution for our doxographical disagreement is that Proclus' word "cause" is likely to be a misleading interpolation, in addition to his errors in misreporting the other Stoic conceptions of limit and time.⁵¹

I conclude with a remark on a Posidonian conception of limit suggested at Plutarch, *De an. procr.* 1023b-c. Plutarch's evidence provides material for Posidonius' interpretation of Platonic "divisible being" at *Timaeus* 35a. Posidonius and his followers, according to Plutarch, took this to be for Plato "the being of the limits around bodies" (τὴν τῶν περάτων οὐσίαν περὶ τὰ σώματα), a formulation Plutarch criticises for not withdrawing far from matter.⁵² This is a very important piece of evidence for Stoic and especially

ὑφίσταντ' ἂν ἀναγκαίως κατὰ τὴν προκοπὴν τῆς πορείας μετεγκλινόμενοι. For Posidonius' exposition of arctic circles, see Strabo, 2.2.1-3.8 (Fr 49: 2.2.37-40 EK), 2.5.43 (Fr 208 EK), for variation of "arctic circle" with the observer's latitude, Cleom. *De motu* I 1.193-201; see also Bowen and Todd (2004), 45-6, 169.

⁴⁹ See n. 9.

⁵⁰ See n. 33.

⁵¹ It is worth citing Procl. *In Pl. Tim.* 271d (SVF 2.521), where he misreports the Stoic "incorporeal" time as "subsisting in mere thought", a fact which for Brunschwig (1994), 96 renders it difficult to make any use of Proclus' evidence on limit either.

⁵² Plut. *De an. procr.* 1023b-c (Fr. 141 EK).

Posidonian thinking. But the evidence is also very difficult to interpret and has given rise to extensive debate.⁵³ I attempt no direct treatment of it here except to question the views offered by Kidd and Tieleman.

Leaving aside Posidonius' own view on limit, Tieleman thinks that "Posidonius, unlike Plutarch, assumed that matter was involved in the creation of soul", and that when Plutarch faults him for not withdrawing far from matter, "this can only mean that Posidonius took the soul as described by Plato to be corporeal".⁵⁴ Tieleman at this point seems to presume that Plutarch's evidence for all its polemicism provides material for a Stoicising comment by Posidonius on Plato's theory of soul in the *Timaeus*. But I do not agree with this line of argument for the reason that the extant evidence makes it unambiguously clear that while for Posidonius the soul is entirely corporeal, for Plato it is not. Unless we take it for granted that Posidonius neglected Plato's obvious meaning, the presumption that he took the soul as described by Plato as corporeal seems just implausible.⁵⁵ We can then legitimately suppose that in interpreting Plato's passage Posidonius himself had, at least, no motive for adopting Plato's dualistic distinction between indivisible and divisible, or between intelligible and perceptible, in analysing the constituents of the soul. Since this dualism is alien to Stoicism, it would have been extremely difficult for Posidonius to translate it into a Stoic form, insofar as he adhered to the core Stoic doctrine of a corporeal soul.

⁵³ For debate on the testimony, see L. Edelstein, "The Philosophical System of Posidonius", *AJPh* 57 (1936), 286-325, at 303; P. Thévenaz, *L'Âme du Monde, le devenir, et la matière chez Plutarque* (Paris, 1938), 63-7; P. Merlan, *From Platonism to Neoplatonism* (Hague, 1953²), 34-58; M. Laffranque, *Poseidonios d' Apamée* (Paris, 1964), 373-4, 379-80, 431-2; J.M. Rist, *Stoic Philosophy* (Cambridge, 1969), 204-6; R. Hoven, *Stoïcisme et Stoïciens face au problème l'au-delà* (Paris, 1971), 95-102; Cherniss (1976), 2.217-25; Theiler (1982), 1.200-1; Kidd (1988), 1.530-8; Reydamas-Schils (1997), 455-76; *Demiurge and Providence: Stoic and Platonist Reading of Plato's Timaeus* (Turnhout, 1999), 96-100; Ferrari and Baldi (2002), 277-86; T. L. Tieleman, *Chrysippus' On Affections: Reconstruction and Interpretation*, *PhA* 94 (Leiden, 2003), 210-13; J. Opsomer, "Plutarch's *De Animae procreatione in Timaeo*: Manipulation or Search for Consistency?", in P. Adamson, H. Baltussen and M. W. F. Stone (eds.), *Philosophy, Science and Exegesis in Greek, Arabic and Latin Commentaries*, 2 vols. *Bulletin of the Institute of Classical Studies*, Supplement 83.1 (2004), 137-62; C. Gill, *The Structured Self in Hellenistic and Roman Thought* (Oxford, 2006), 283-5.

⁵⁴ Tieleman (2003), 210-11.

⁵⁵ For one possible attestation for Posidonius' interpretation of the Platonic soul as incorporeal, see *S. E. M.* 7.119.

Kidd on the other hand, on the assumption that shape is for Posidonius a “corporeal containing limit”, takes the view that a reference in Plutarch to “the being of the limits” implies Posidonius’ treatment of limits as corporeal beings, and hence that Plutarch was accurate in judging “the limits” as “material” for Posidonius.⁵⁶ Yet the weight of Plutarch’s objections to Posidonius fails to coincide with Kidd’s emphasis. It seems, rather, probable that Posidonius in Plutarch’s eyes envisaged some sort of “matter”, in interpreting Plato’s words at *Timaeus* 35a: “the one that is divisible and comes into being in the case of bodies”. That is, as Plutarch might better have argued, Posidonius took Plato’s words *περὶ τὰ σώματα* or “in the case of bodies” to mean “around bodies” in a literal spatial sense, and linked this term, so understood, to “limits”. Posidonius therefore understood “divisible being” as plane surfaces, that is, as Plutarch also cites, “the limits of bodies”. It is crucial to understand that Plutarch’s objections to Posidonius were grounded on his super-dualist interpretation of the soul as expounded by Plato in the *Timaeus*.⁵⁷ That is, for Plutarch at least, not only should the soul have no corporeal components whatsoever, but “divisible being” too should be taken as something completely conceptual. Inasmuch as Posidonius, contrarily, included “the limits of bodies” as an instance of Platonic “divisible being”, alongside other mathematical limits, Plutarch interpreted Posidonius as being not very far from matter.

Supposing that Posidonius had an idea of incorporeal limit as argued above, the expression “the being of the limits” in Plutarch’s evidence represents Posidonius’ way of presenting a Platonic idea that Posidonius would himself describe, more precisely, as “the subsistence of incorporeal limits”. In this case, the imputation to Posidonius of an alleged Crantorian approach in construing “divisible being” as matter (and in turn as a corporeal constituent of the soul) seems unwarranted. Consideration of Posidonius’ likely motives for drawing on Plato’s passage suggests that he may have abandoned the earlier Stoic opinion about shape as a mere thought-construct. This opinion, as previously mentioned, would have led him to highly counter-intuitive conclusions, for instance, that even the spherical shape of the world corresponds to a fictitious construct and is therefore non-subsistent. If Posidonius abandoned this earlier Stoic account, he would have been liberated from that old dilemma, finding himself free to revert to the

⁵⁶ Kidd (1988), 1.531-2. See also n. 41.

⁵⁷ Gill (2006), 284, n. 361.

Platonic conception of limit,⁵⁸ without thereby depriving it of subsistence. In that case, for Posidonius the spherical shape of the world, like other sorts of limit, without being a body, still corresponds to a real and objective something, namely a subsistent incorporeal. However, this Posidonian conception of shape marks a partial innovation within Stoic theory, and one which had some subsequent influence on Stoic thinking, namely in Cleomedes' astronomy.⁵⁹

⁵⁸) S. E. *M.* 7.119 is a possibly Posidonian interpretation of Platonic numbers and limits as incorporeals. See W. Burkert, *Lore and Science in Ancient Pythagoreanism* (Cambridge: Mass. 1972), 56, n. 19.

⁵⁹) This article has benefited from discussion with Christopher Gill, Malcolm Schofield, David Sedley, Stephen White, Bernard Collette, and Chol-Ung Kang. I thank the editors and anonymous referees of *Phronesis* for suggestions and corrections. This work was supported by the Korea Research Foundation Grant funded by the Korean Government (KRF-2008-327-A00222).