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Reconstructing Chrysippus' Cosmological Hypothesis.
On Plut. *Stoic. rep.* 1054 c–d*

Abstract: Two literal quotations from Chrysippus' *On Possibles* preserved in Plutarch's *On the Contradictions of the Stoics* seem to contradict the Stoic thesis of the isotropy of void. According to this thesis the void is an infinite undifferentiated expanse (a wide continuous area) whose center is marked by/coincides with the position of the world. Since there is nothing else outside the world, the cohesive force which pervades it is sufficient on its own to guarantee the quasi–indestructibility of the trans–cyclical διακόσμησις (i.e the fact that in the new cosmic cycle the διακόσμησις returns in a form identical to the one it had in the previous cosmic cycle) and the eternity of the οὐσία. Conversely these two quotations seem to imply the anisotropy of the void establishing the existence of a central διαφορά equipped with causal force and conflicting also with the other official Stoic thesis according to which the incorporeal is causally inert. In this paper it will be argued that there is in fact no contradiction, because, in those two quotations, Chrysippus consciously develops a cosmological hypothesis in order to face a difficulty concerning the role of fire during the universal conflagration. The solution to this difficulty belongs to the modal logic and consists for Chrysippus in distinguishing between the actual universe and possible universes.

Keywords: Chrysippus, Plutarch, void, world, fire, conflagration, isotropy, anisotropy, physical and logical possibility

1. Preamble

In this paper I shall examine two very controversial verbatim quotations from the fourth book of Chrysippus' *On Possibles* (hereafter *OP*), contained in Plutarch's *On the Contradictions of the Stoics* (hereafter *OCS*).¹ Both quotations occur in chapter 44 of Plutarch's work. The goal of this chapter is to highlight some contradictions intrinsic to the Stoic conception of the void. Plutarch observes that Chrysippus often claimed, in an anti–Epicurean spirit, both that infinite void (ἄπειρον κενόν) has no beginning, centre, or end (οὐτ' ἀρχὴν οὔτε μέσον οὔτε τελευτήν)² and that in such a void “there is no difference by which to distinguish one part as being up and the other as down (οὐκ οὔσης ἐν ἀπείρῳ διαφορᾶς, καθ' ἣν τὸ μὲν ἄνω τὸ δὲ κάτω νοεῖται γινόμενον)”.³ According to Plutarch, this thesis (which Algra⁴ calls the thesis of the isotropy of the void)⁵ was the canonical stance of Chrysippus and his school.⁶ Now, this thesis, always according Plutarch, runs against some statements made by Chrysippus himself in the fourth book of *OP*. These statements seem to contradict the official Stoic stance because they seem to imply the anisotropy of the void, which is to say the presence in the void of a real spatial difference (διαφορά): for they affirm that a central place exists (this would be the διαφορά), which it is occupied both by the world (κόσμος) and by substance (οὐσία); and that it is this central place which ensures both the indestructibility of the world (although this is a *sui generis* indestructibility, as we shall see) and the eternity of substance. But that's not all. These statements, at first glance establishing the existence of a central διαφορά

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¹ *Stoic rep.* 1054c–d.

² *Ibid.* 1054 b. What Plutarch probably has in mind here is Plato's description (*Parm.* 137d) of that which is devoid of parts as what which has neither beginning nor middle nor end.

³ *Ibid.*

⁴ Algra (1995) 283.

⁵ *Stoic rep.* 1054e: οὐ γὰρ ὑπάρχειν ἐν τῷ κενῷ διαφορὰν, ἧ τὰ σώματα δευρὶ μᾶλλον ἢ δευρὶ προσάγετα (in the void there exists no difference by which bodies are drawn in one direction rather than another).

⁶ DL VII 140; *SVF* II 424, 540, 551b, 552, 554, 557.

equipped with causal force (presumably an incorporeal entity), come into conflict with the other official Stoic thesis according to which the incorporeal is causally inert.⁷

This chapter has basically been interpreted in three ways: 1) by agreeing with Plutarch that Chrysippus contradicts himself;⁸ 2) by arguing that Plutarch has misconstrued Chrysippus' thought by either misunderstanding it⁹ or not realizing that Chrysippus was actually criticizing an antagonistic thesis (and so by attributing him something alien from a doctrinal point of view);¹⁰ 3) by stating that both philosophers, from different points of view, have the right to say what they say.¹¹

Despite the differences, all this scholarship accepts the idea that there is at least some discrepancy or incongruity between the official Stoic position and the content of the two quotations from the *OP*. The differences between scholars concern the significance or weight assigned to this discrepancy. According to scholars endorsing view 1) a true contradiction lies behind this discrepancy. The case of 2) is twofold: for most of the scholars belonging to this group, this discrepancy reflects only an apparent contradiction, mainly due to Plutarch's misunderstanding. For Hahm, instead, there is a real contradiction but, trivially, only because the two quotations report a rival or opposing thesis. In this respect, case 3) essentially coincides with Algra's position¹² (except it posits good philosophical reasons for Plutarch's misunderstanding).

Since even the present study only makes sense if at least such a literal contrast is assumed, it is necessary to examine the relevant texts in more detail.

The sources ascribe to the Stoics in general, and to Chrysippus in particular, the idea that the world, a finite body, is surrounded by infinite void.¹³ The word ἄπειρον must be understood here both in

⁷ *Stoic rep.* 1054d–e; *SVF* II 540–541.

⁸ Zeller (1880) 203 n. 5: “Chrysippus, in affirming that the world occupies the centre of space, was therefore contradicting himself”; Cherniss (1976) 581: “According to the latter (*scil.* Goldschmidt, see next note) Chrysippus meant that the position of the universe determines the centre of the void; but, if so, how could he have thought that the position occupied by the universe makes any difference to its imperishability?” Cherniss is inclined to disagree with Goldschmidt and therefore to believe that Chrysippus contradicts himself; Baldassarri (1976) 129 n. 111: “Indubbiamente compare qui in Crisippo una strana incoerenza”.

⁹ Pohlenz (1959) 77: “Plutarch behauptet, zur Erklärung habe Chrysipp vorausgesetzt, dass der Kosmos selbst sich in der mitte des leeren Raumes befinde. Aber das ist wohl nur Mißdeutung einer aus Zusammenhang gerissenen Stelle”; Sambursky (1959) 112: “However, Plutarch obviously misinterpreted Chrysippus' somewhat ambiguous formulation in one of the passages where he talks of the stability of the cosmos ‘secured by the spatial occupation in the centre which would be upset if it were located elsewhere’”; Goldschmidt (1969²) 29 n. 5: “Ce qu’il faut dire, c’est que Chrysippe affirme ‘l’impossibilité’ d’un centre du vide, contre la philosophie d’Epicure (où le vide, avec son haut et son bas, présente à la chute des atomes un cadre aux déterminations préexistantes) et admet un centre du vide, dans sa propre doctrine (où le corps du monde communique au vide une détermination dont celui-ci, par lui-même, est totalement dépourvu)”, 30: “[L]’expression raillée par Plutarque signifie, non pas que le monde se tient au centre du vide, mais que le centre du vide est là où se tient le monde”, 43: “De fait, c’est la place du monde, qui fixe le centre du vide”; Furley (1966) 20–21: “For the other half of the contradiction, namely that all matter tends towards the centre of space, Plutarch goes to a statement by Chrysippus that if matter were not arranged round the centre the cosmos would be destroyed. This would follow, says Plutarch, only if he were speaking of the centre of space. But Plutarch is wrong. What Chrysippus probably meant was that matter must be evenly distributed or balanced round its own centre”; Algra (1995) 282–307, esp. 305: “[I]t is Plutarch who distorts Chrysippus' original intention in order to be able to construct the required contradiction”; Casevitz–Babut (2004) 336–348 (Babut follows and extends Goldschmidt on this point); Meijer (2007) 229–233, esp. 233: “It Plutarch's misleading and malicious interpretation of space as void that saddled Chrysippus with the impossible centre of the void”.

¹⁰ Hahm (1977) 260–266: “[T]he words quoted by Plutarch to prove Chrysippus guilty of contradiction fail to substantiate the charge”.

¹¹ Boys–Stones (1997) 577–585, esp. 577: “[I]t seems to me that the most secure reconstruction of this debate (and *a fortiori* of Chrysippus' own position) will be one in which we can make sense *both* of Chrysippus' doctrine *and* of Plutarch's objection to it”. Upon a closer look, Boys–Stones (1997) could also fall also into the second class. For he also recognizes “that Plutarch might in some way have misrepresented Chrysippus” (579). However, his appreciation of the philosophical reasons for this misunderstanding require us to ascribe this reconstruction to a different class.

¹² *Ibid.* 579.

¹³ DL VII 140: ἔξωθεν δὲ αὐτοῦ (*scil.* τοῦ κόσμου) περικεχυμένον εἶναι τὸ κενὸν ἄπειρον, ὅπερ ἄσώματον εἶναι; *SVF* I 95–96; *SVF* II 524, 535b, 538, 552, 619.

the sense of ‘unlimited spatial extension’¹⁴ and in that of ‘absolute spatial indetermination’.¹⁵ Both meanings are important.

As regards the infinity or unlimitedness of the void, from Arius Didymus we learn that Chrysippus compared the void to nothingness because of its lack of any limit.¹⁶ In order for the void not to be infinite, there should be something that can limit it, so to speak, from the outside, as the world limits it from within. But it is simply impossible for there to be such a something outside the void. Therefore, the extra-cosmic void is infinite. Such infinity also seems to be required by the Stoic doctrine of universal conflagration.¹⁷ When, at the end of a cosmic cycle, the world goes up in flames, its mass expands and increases. Because it is not clear whether this expanding mass is of finite¹⁸ or infinite magnitude,¹⁹ the void would risk not being able to provide the spatial condition for the world’s changes of volume.

In turn, the absolute indetermination of the void is required by the Stoic conception of the incorporeal as something causally inactive and impassive. This indetermination allows the world to exercise its cohesive causal activity aimed both at its self-preservation and at its progressive expansion. This must take place in a space totally free of obstacles.

Leaving the two fragments in question aside for the moment, in the sources only an ‘isotropic’ conception of the void is attributed to the Stoics in general and to Chrysippus in particular.²⁰ For this reason, it can be considered the official position of the school and from this point of view Plutarch seems to be reliable.

As far as the world is concerned, the following considerations may suffice. According to the official Stoic doctrine, the cohesion of the world is not the effect of a causal principle that corresponds to a (presumed) ontologically independent central place; but it coincides, in a sense, with the central position. In other words, the *meson* is given by the permanence of the world (it is its logical result and not its ontological presupposition).²¹ In Stoic physics, cohesion is given by the *equilibrium* of the elements and by the tensive gradation. Moreover, the compactness of bodies, inside the natural world, is mainly dictated by the absence of intracosmic void.²² While we can speak of a cosmic center, the latter is not ontologically independent but rather depends on the *systasis* of the world itself, that is, on the tensive cohesion. The void, which by its nature is infinite and therefore undifferentiated, finds its center only thanks to the permanence of the world, a concept by which we must understand both the indestructibility of the οὐσία (fr. 2) and the quasi-indestructibility of the world as διακόσμησις (fr. 1).

Let us ask ourselves now: are these doctrines contradicted, at least according to the letter, by the two quotations from *OP*? It seems so. For now, I will highlight only the following facts. I ask the reader to be patient because all these points will soon be examined in detail. As for the first fragment, the most striking textual clue for the presence of a real and independent διαφορά in the void is Chrysippus’ statement according to which the world would face complete destruction if it

¹⁴ Stob. *Ecl.* I 161, 17–18, 20–21; SE *M IX* 332; *SVF* II 535b.

¹⁵ Stob. *Ecl.* I 161, 22–24; Cleomedes, *Heavens*, 1.150: τὸ κενὸν–ἀσώματον ὄν οὔτε ἔμπροσθεν οὔτε ὀπίσθεν, οὔτε ἐκ δεξιῶν οὔτε ἐξ ἐωνύμων, οὔτε μέσον (because the void is unlimited, as well as being incorporeal, it will not have an upwards or a downwards [direction], nor a front, back, right, left, or center); Alex. Aphrod. apud Simpl. *In Ar. Phys.* 671, 5 ff: τὸ ... κενὸν ἀδιάφορον καὶ ὁμοίως ὑπέικον πανταχῆ (the void is undifferentiated and equally yielding everywhere).

¹⁶ *Apud* Stob. *Ecl.* I 161, 22–23: “For as nothing is no limit, so there is no limit of nothing, as is the case with the void. (Ὡσπερ γὰρ τὸ μηδὲν οὐδὲν ἐστι πέρας, οὕτως οὐδὲ τοῦ μηδενός, οἷόν ἐστι τὸ κενόν)” (transl. Long–Sedley).

¹⁷ Aëtius Plac. II 9, 2. <Οἱ Στωϊκοὶ> εἶναι κενόν, εἰς ὃ κατὰ τὴν ἐκπύρωσιν ἀναλύεται ὁ κόσμος ἄπειρον ὄν. For the most relevant Stoic texts on conflagration, see sections 46 and 52 of Long–Sedley (1987–88) and the section entitled “Conflagration” of Boeri–Salles (2014) 424–438. On the Stoic doctrine of conflagration see Mansfeld (1979), Long (1985), Salles (2005) and Salles (2009).

¹⁸ *SVF* II 535b.

¹⁹ *SVF* II 619 where it is said that the expansion of the world is of infinite magnitude (ἄπειρομέγεθος).

²⁰ See n. 6.

²¹ Cic. *De nat. deor.* II 115; *SVF* II 554.

²² DL VII 140.

were placed not at the centre but elsewhere (ἐπεὶ, εἰ ἀλλαγῆ ἢ νοηθεῖ ὧν, καὶ παντελῶς ἂν αὐτῷ συνάπτοι ἢ φθορά). Now, if the void were undifferentiated, it would make no difference where the world is located. In this case, it would be the world itself to introduce a difference in the void by filling and limiting it. Therefore, if for the world being in a place other than the centre makes a difference, to the point that the new location would lead it to its complete destruction, it is clear that this central place is both ontologically independent of the world and causally active upon it.

The second fragment is less explicit than the first one from this point of view. This is due to the fact that what Chrysippus had to say had already been said in the first fragment. The expression οὕτω γάρ πως indicates that Chrysippus is on the verge of applying the same un-Stoic cosmological pattern to substance. Therefore the clear and literal reference to no less than two factors necessary to ensure eternity of οὐσία seems to be explained, again, in the light of the presence of a real διαφορά in the void (ὥστε καθ' ἕτερον τρόπον ἀλλὰ καὶ διὰ τὴν συντυχίαν (*scil.* κατάληψις τοῦ μέσου τόπου) μὴ ἐπιδέχεσθαι αὐτὴν φθοράν <καὶ> κατὰ τοῦτ' εἶναι αἰδίου). Again, this διαφορά seems to imply an anisotropic conception of void.

This brief review confirms that, at least according to the letter, there is a discrepancy between the official thesis of the school and the content of the two fragments from *OP*. My task, in the present study, shall be to understand what the most likely meaning of this discrepancy is.

It might seem that these two quotations represent a particular problem only for those who are not resigned to the idea that Chrysippus could have succumbed to such a blatant contradiction. Once this possibility is accepted, the content of the two fragments does not pose any insurmountable interpretative problems. The point, however, is that the contradiction highlighted or constructed by Plutarch is of no little importance. It affects the very foundations of Stoic physics, for the two Chrysippean quotations seem to introduce into the incorporeal void a spatial difference that carries causal force. This has decisive effects on the Stoic conception of the world – whose causality can no longer be conceived as being *only* cohesive²³ because now it is *also* characterized by the interaction with an external factor (the central place) – and of incorporeals – which can no longer be thought of as being *all* inactive (and impassive). Hence the need to exonerate Chrysippus from Plutarchus' charge in one way or another.

2. Hahm's and Algra's interpretations

The second category also encompasses the most influential and important hermeneutical challenges advanced in recent decades. I am referring to the proposals made by David Hahm and, especially, Keimpe Algra. Although marked by significant differences (Algra believes that Plutarch misrepresented Chrysippus' position, while Hahm is convinced that he erroneously attributed to Chrysippus a thesis that the latter was criticizing in his *OP*), both discuss the quotations in the light of Chrysippus' modal theory of possibility.²⁴ For Hahm, Chrysippus wants to argue that the world can be said to be destructible even though it will never perish. The applicability of the term 'destructible' (φθαρτός) in the first of the two quotations would be justified on the basis of Chrysippus' definition of the possible as "that which is capable of occurring, even if it never will occur".²⁵ Hahm writes: "Chrysippus could grant that the cosmos could never be destroyed and yet maintain that the term 'perishable' is applicable to the cosmos. All he had to prove was that the cosmos is capable (ἐπιδεκτικός) of being destroyed".²⁶ According to Hahm, the two quotations from *OP* contain a non-Stoic counterargument in favour of the impossibility of the destruction for the world. However, this counter-argument can at most demonstrate such impossibility only for the

²³ See Stob. *Ecl.* I 166,4–22 (*SVF* I 99). See also Ioppolo (2013) 26.

²⁴ See also Casevitz–Babut (2004) 338 n. 544.

²⁵ Plut. *Stoic. rep.* 1055d: οὐκ ἔστι δυνατὸν ὅπερ ἢ ἐστὶν ἀληθές ἢ ἔσται κατὰ Διόδωρον, ἀλλὰ πᾶν τὸ ἐπιδεκτικὸν τοῦ γενέσθαι, κἂν μὴ μέλλῃ γενήσεσθαι. See also Cic. *De fato* 13; Epict. *diss.* II 19, 1.

²⁶ Hahm (1977) 263.

substance or matter of the world, not for the world itself.²⁷ Hahm follows the Stoic distinction between two uses of the term κόσμος.²⁸ According to its first use, the word κόσμος “could refer to the whole mass of qualified matter (οὐσία) that constitutes our world. The cosmos, in the sense of cosmic material, is indeed imperishable and eternal”. The second use is that for which “the word could also refer to this particular world order and arrangement of elements (διακόσμησις). Since this world order is fated to perish at some time in the future, the cosmos, in the sense of world order, is perishable”. According to this line of thought, Hahm concludes that “the substance of the cosmos never perishes, but its form is constantly being altered and so perishing”.²⁹ I will only make the following observation: Hahm sets out from the assertion that the possibility implied by the word ‘destructible’ is of counterfactual sort. Nevertheless, he does not seem to fully develop the consequences of this modal reading. For his strong reference to the Stoic distinction between the two uses of the word ‘world’ seems to make the counterfactual sense of ‘φθαρτός’ completely unnecessary.

For Algra the world which is spoken about in the first quotation is not the world as διακόσμησις (by definition, a ‘destructible’ world), but the world as eternal substance or ‘God’. The world understood in this latter sense can be said to be ‘destructible’ according to a pure logical possibility.³⁰ It cannot be destroyed either by external or internal factors. Hence, it is physically indestructible. Still, its destruction, which is physically impossible, is logically or virtually conceivable, since the world is a corporeal entity. Algra, in particular, reconstructs the content of the two quotations in the following way: in the former quotation the world as eternal substance admits the possibility of its destruction just as a mere logical possibility. It is therefore possible to imagine “a situation of a counterfactual *cosmos*”³¹ in which the world’s physical indestructibility becomes only a virtual indestructibility due to a new external causal factor that is represented by the central place equipped with an attractive force.³² In the latter quotation, we find the real world being described as concomitant with the counterfactual one. The real world is eternal and physically indestructible. The place it occupies is at the centre, due to the simple fact that it is the world itself that forms it in the finite χώρα, which Algra conceives as “a larger but finite space encompassing the cosmos but being able to contain ‘more of it’”.³³

As one can see, Algra, unlike Hahm, pushes the modal reading of φθαρτός to its utmost limit. For he does not need to appeal to the Stoic distinction between the two uses of the term ‘world’. For Algra, φθαρτός is counterfactually predicated of the world understood as an eternal and physically indestructible substance. There is no need to call into question the second use of the term ‘world’, by which a reference is made to this particular world order that is fated to perish.

²⁷ *Ibid.* See also *ibid.* 264: “The counterargument based on the alleged position of the cosmos in the middle of the void proves, at best, that the cosmos in one sense (i.e., οὐσία) is imperishable”; and 265: “For his opponent’s argument demonstrates only what Chrysippus himself also believes, namely, that the matter of the cosmos is incorruptible”.

²⁸ DL VII 137; Stob. *Ecl.* I 184, 8.

²⁹ Hahm (1977) 264. See also *ibid.* 265: “Chrysippus may now go on to prove that the particular arrangement of this matter that we call our cosmos is capable of changing and therefore qualifies for the description ‘perishable’”.

³⁰ Algra (1995) resorts to an important distinction, which is not explicitly formulated in the Stoic sources but inferable from their use of modal concepts: the distinction between physical possibility and logical possibility. A physical possibility is a possibility which by virtue of the cooperation of internal and external factors cannot fail to be realized. Indeed, it is in a sense destined to be realized. From this point of view, the possible coincides with the necessary (292–293). A logical possibility (293–295) is a possibility which is not destined to be realized, while remaining a possibility (Cic. *De fato* 13). According to Algra, it is introduced by the Stoics to preserve moral responsibility in the field of human action (Cic. *De fato* 42–43). Algra (302) writes in this regard that “similarly to what is the case in the sphere of human ethics, also God’s responsibility for the indestructibility of the cosmos could only be claimed if it were shown that the destruction of the cosmos was still in a sense possible”.

³¹ *Ibid.* 300.

³² Algra (300), like Plutarch (*Stoic. rep.* 1054 d–e), thinks that the causality of the central place must be conceived of in terms of an attractive force.

³³ *Ibid.* 305.

It is evident that both interpretations owe their *raison d'être* to Chrysippus' work from which the two quotations were taken: viz. *OP*.³⁴ This work is listed among Chrysippus' logical treatises in Diogenes Laertius's catalogue.³⁵ It is almost certain, then, that in this work Chrysippus examined the modal concept of possibility in detail. Now, the only linguistic element in the two quotations which conveys the idea of possibility is the verbal adjective φθαρτός. According to Hahm and Algra, there are good chances that this possibility is of a counterfactual kind.

3. A new interpretation

In this paper I will argue that Plutarch has neither misunderstood Chrysippus' thought nor attributed to him a thesis that the latter was refuting. I will argue instead that these quotations contain a cosmological hypothesis, formulated by Chrysippus with full awareness of its incompatibility with the thesis of the isotropy of the void. This hypothesis stems from a doubt pertaining the role of fire during the conflagration. From a purely mechanistic point of view, because of its centrifugal tendency fire alone seems unable to keep the expanding cosmic substance within the right physical limits. Hence the anisotropic hypothesis that introduces into the universe a second causal factor, the central place, in order to compensate for such a tendency. Only in this way does it seem possible to preserve the quasi-indestructibility³⁶ of the world as διακόσμησις (fr. 1) and the eternity of the world as οὐσία (fr. 2). Chrysippus would thus be consciously questioning the doctrine of void isotropy, in order to identify a second causal factor mostly supporting the world during that delicate phase of expansion. The causality exerted by the central place would be of an auxiliary kind (it would not be the *causa principalis*). In the light of these considerations, I believe that these two fragments should be associated, as Arnim maintained,³⁷ with evidence regarding the unity and coherence of the world.³⁸

Plutarch probably realized that Chrysippus was consciously developing something like a conceptual fiction but, for reasons we shall soon be examining, this fact was not enough for him to debunk the seriousness of the contradiction imputed to Chrysippus.

I also think that one should try to provide an explanation of why Chrysippus puts forward physical considerations in a work on modal logic. In my opinion Chrysippus develops in this particular context three modal observations. At the core of these observations there lies the distinction between physical possibility and logical possibility. I shall hypothesize that the first and the third were laid out respectively in the previous section of the text and in the subsequent one, which are now lost. The first two observations, put forward in fr. 1, connect this distinction to the question of the world's destruction.

The first observation concerns φθαρτός and the notion of physical possibility. In place of the counterfactual possibility of the destruction of the world conceived of as an eternal substance (οὐσία), apparently implied by the ending τος (logical possibility), Chrysippus was asserting the

³⁴ Cf. *De def. orac.* 425d–e; *Epict. Diss.* II 1–5, 9.

³⁵ VII 191. See also *Cic. De fato* 1.

³⁶ In the first quotation the strange expression ἡ ὡσπερ ἀφθαρσία occurs. Literally, this expression indicates a sort of indestructibility, something akin to indestructibility. Now, there are some testimonies which explicitly establish a connection between the destructibility of the world (as διακόσμησις) and its *sui generis* eternity, which consists in the fact that the world as διακόσμησις returns *in perpetuum* to live in a form identical to its previous ones (*SVF* II 576, 597, 620, 623, 624). As we shall see, these passages seem to provide the conceptual elements required in order to understand Chrysippus' use of a strange expression like ἡ ὡσπερ ἀφθαρσία.

³⁷ See *SVF* II 539, 550, 551.

³⁸ Plutarch does not hesitate to assign their content to the field of physics. This belief is partly due to the fact that, in all likelihood, the treatises from which he obtained the official thesis of the isotropic and causally inert character of the infinite void were all works on physics. I am referring to *On Movement* (Περὶ κινήσεως; *Stoic. rep.* 1054e) and the other treatises mentioned in *De defectu oraculorum* (435 e). For Babut (2003^b) 255 n. 320, we can identify the latter with either Chrysippus' work on the void (DL VII 140) or his *Physikai technai*. See also Goulet 1994, 340. Not only, at the beginning of chapter 45 (*Stoic. rep.* 1055d), referring to the immediately previous one, Plutarch says that Chrysippus' 'physical theory (τὸν φυσικὸν λόγον) is involved in serious contradictions by these statements (καὶ ταῦτα μὲν ἔχει μεγάλας ὑπεναντιώσεις πρὸς τὸν φυσικὸν λόγον)'.

inevitability of such an outcome for the world conceived of as διακόσμησις (physical possibility).³⁹ It is important to underline the fact that destruction and permanence concern respectively two different subjects: the διακόσμησις that is born and dies periodically and the rational structure of nature itself, which is not altered in any way by the cyclic vicissitude (i.e. the eternal substance, οὐσία), because, precisely insofar as it is a rational and intelligible structure, it remains identical to itself and when it is not immanent to matter, it remains established in the divine mind. Once the διακόσμησις disappears, the rationality intrinsic to it withdraws⁴⁰ into the divine mind, and waits, so to speak, to re-expand and permeate a physical nature, condensed and contracted into elements with different weights.

The second observation concerns the logical possibility. Chrysippus here confines the possibility of the destruction of the world to the domain of counterfactuality (εἰ ἀλλαγῆ νοηθείη ὄν, καὶ παντελῶς ἄν αὐτῷ συνάπτοι ἢ φθορά). In other words, the world, transformed into pure fire during the conflagration (according to the hypothesis advanced here), would meet complete destruction, if it were not restrained in its expansion by the central place with its centripetal force. This would of course compromise the quasi-indestructibility of διακόσμησις.

The third modal observation has to do with the solution of the aforementioned difficulty proposed by Chrysippus. This solution consists in referring the distinction between physical possibility and logical possibility to the notion of universe (τὸ πᾶν: the world plus the void) and in distinguishing between the actual and isotropic universe and possible universes (one of which is considered in the heterodox anisotropic hypothesis). In the actual and isotropic universe, chosen by the divine mind as the best of all possible universes, the fire in which the world is resolved during the conflagration is not a mere mechanical agent but the highest expression of providence. It is therefore impossible for it to lack cohesive force.

One last question: did Plutarch have either direct or indirect knowledge of the fourth book of Chrysippus' treatise on possibles and derive these two controversial quotations from it? Algra, following Babut, thinks that 'in this particular case Plutarch had recourse to Chrysippus' original text'.⁴¹ I think this is questionable and will later explain why. If, however, one believes that Plutarch did not know Chrysippus' original text, then it must be concluded that the textual basis upon which he constructs his charge is incomplete. And such incompleteness has relevant repercussions also on the interpretative level, for it suggests that supplementary information for integrating and understanding the two fragments has been lost. I suspect it is precisely in this lost part of the text that Chrysippus introduced his own solution of the aforementioned difficulty.

4. *Plutarch*

The first thing to do is to say something about *OSC*. In general, this appears to be a strange and complex work. It is hard to find traces of a well-ordered thematic project in it: relatively orderly passages follow ones characterized by the chaotic accumulation of disparate criticisms. The ambition expressed by the title, and expressly confirmed by Plutarch⁴² – to detect only the contradictions into which the Stoics have fallen without criticizing their theories – does not fit very well with the content of the treatise: sometimes, instead of exposing or establishing contradictions, Plutarch merely criticizes the Stoics. Regarding the contradictions, Sandbach writes that "some of these are little more than conflicting *obiter dicta*, but for the most part an attempt is made to find inconsistencies with or in the more important Stoic doctrines".⁴³

Taking only these more serious contradictions into account (be they real or presumed ones), we should distinguish two types of contradiction: the contradiction between two genuinely Stoic

³⁹ There are many passages in which the world, conceived as this particular and periodical world-order (διακόσμησις), is described as φθαρτός, destructible (*SVF* II 576, 585, 589, 594).

⁴⁰ Plutarch. *Comm. not.* 1077d–e = *SVF* II 1064.

⁴¹ Algra (1995) 282 n.59.

⁴² *Stoic. rep.* 1042f.

⁴³ Sandbach (1940) 20.

theses⁴⁴ and that between a genuinely Stoic pronouncement and a non-Stoic one. Chapter 44 of *OSC* seems to contain the second type of contradiction. Roughly speaking, one could say that this is the contradiction between an isotropic conception of the void (which is genuinely Stoic) and anisotropic one (which is non-Stoic). From this contradiction a second one follows: that between the genuinely Stoic thesis that the cohesive causality of the world is sufficient to ensure its integrity, and the (non-Stoic) thesis of the insufficiency or inadequacy of such a causality. I will observe, *en passant*, that, while Chrysippus might possibly have missed the first type of inconsistency (by accepting both horns of the contradiction), it is unlikely the second inconsistency went unnoticed. For these reasons, it will be important to understand whether we can trust Plutarch when in the chapter 44 he quotes, paraphrases, interprets and criticizes Chrysippus. We can make a decision about it only by reading carefully chapter 44.

I have stated that Plutarch was probably aware that Chrysippus was only proposing a hypothesis and that, despite this, he felt authorized to treat it as a thesis supported in the first person and contradictorily by Chrysippus himself. What justifies this claim?

In chapter 44 Plutarch provides three quotations⁴⁵ from Chrysippus' *On Movement* (hereafter *OM*). Plutarch uses the first two in particular by setting them in contrast with the content of the two extracts from the fourth book of *OP*. In these two passages Chrysippus says: 1) that the world is a perfect body; 2) that the parts of the world are not perfect because they do not exist independently of the whole of which they are parts; 3) that the world is moving through all its parts in view of its self-preservation and of its own cohesion; 4) that all bodies move towards the center of the world: the world towards itself and the parts of world toward the center of world. According Plutarch, a world thus conceived does not need to occupy an independent central place in order to remain intact: with its centripetal motion, it will form the center of the void wherever it finds itself.⁴⁶

But the most interesting quotation is the third one, especially for the use that Plutarch makes of it. It concerns the centripetal movement of the parts of the world. Chrysippus argues that each part of the world would continue to move in a centripetal way, even if we were to imagine *per absurdum* (καὶ εἰ λόγου χάριν νοήσαιμεν αὐτὸ καὶ ὑποθούμεθα εἶναι ἐν κενῷ τινι τοῦ κόσμου τούτου)⁴⁷ that it were suddenly surrounded by empty space within the world:

It is reasonable that the way in which each of the parts moves when cohering with the rest is also the way in which it moves by itself, even if for the sake of argument we should in imagination suppose it to be in a void within this world, for as it would be moving to the middle when cohibited from all sides so will it continue in this motion even if for the sake of argument all about it suddenly comes to be void. (tr. Cherniss)

Ἐν τῷ τρόπῳ δὲ κινεῖται ἕκαστον τῶν μορίων, συμφυεῖς ὄν τῷ λοιπῷ, εὐλογον οὕτως καὶ καθ' αὐτὸ κινεῖσθαι, καὶ εἰ λόγου χάριν νοήσαιμεν αὐτὸ καὶ ὑποθούμεθα εἶναι ἐν κενῷ τινι τοῦ κόσμου τούτου· ὡς γὰρ ἂν συνεχόμενον πάντοθεν ἐκινεῖτο ἐπὶ τὸ μέσον, μένει ἐν τῇ κινήσει ταύτῃ, κἂν λόγου χάριν ἐξαίφνης περὶ αὐτὸ γένηται κενόν.

The use Plutarch makes of this passage is the key to understanding his attitude toward the two quotations from *OP*. Plutarch introduces it by saying: “Yet to the aforesaid (i.e. to the other two quotations from *OM*) you subjoin the following like a man eager to refute himself (καίτοι τοῖς προειρημένοις ταυτὶ συνάπτεις, ὥσπερ αὐτὸς σεαυτὸν ἐξελέγξει φιλοτιμούμενος).”⁴⁸

Although in this passage, as we have already seen, there are sufficient elements to be absolutely certain that Chrysippus was proposing a hypothesis, Plutarch does not hesitate to speak of him as one eager to contradict.⁴⁹ I believe that the same should be said about the content of the two quotations from *OP*. In other words, also in this case Plutarch knew he was dealing with a hypothesis,⁵⁰ but this did not prevent him from launching an attack against Chrysippus. Yet there is

⁴⁴ See, for example, chapters VI, VII, IX, X, XIII, XIV, XVII, XIX, XX, XXIII, XXV, XLI, XLVII.

⁴⁵ *Stoic. rep.* 1054e–f, 1054f–1055a, 1055b–c.

⁴⁶ 1055a.

⁴⁷ 1055b–c.

⁴⁸ 1055c.

⁴⁹ Casevitz–Babut (2004) 347 n. 567.

⁵⁰ 1054c.

one difference. Whereas, with regard to the hypothesis from *OP*, Plutarch says that Chrysippus contradicts himself, concerning that from *OM* he only says that Chrysippus is eager to contradict himself.⁵¹ This difference is probably explained by what Plutarch states at the end of the chapter.⁵² Here Plutarch seems to reproach Chrysippus for not behaving in *OP* as he does in *OM*, where he does not give up on the idea of the centripetal movement of the parts, despite the presence of the void. Similarly, Chrysippus should not concede that, away from the alleged central place, the world disperses itself and disintegrates. Plutarch writes:

Then in that case, while no part whatever, though encompassed by void, loses the inclination that draws it to the middle of the world, yet the world itself, unless accident provide it with the midmost space,⁵³ will lose its cohibiting tension with the various parts of its substance all moving in different directions.

εἶτα μέρος μὲν ὀτιοῦν ὑπὸ κενοῦ περιληφθὲν οὐκ ἀποβάλλει τὴν ἐπὶ τὸ τοῦ κόσμου μέσον ἄγουσαν ῥοπὴν, αὐτὸς δ' ὁ κόσμος, ἂν μὴ τὴν μέσην παρασκευάσῃ χώραν αὐτῷ τὸ αὐτόματον, ἀπολεῖ τὸν συνεκτικὸν τόνον, ἄλλοις ἀλλαχόσε τῆς οὐσίας αὐτοῦ μέρεσι φερομένοις.

This conclusion is decisive: it first jointly presents the quotations from *OP* and the third quotation from *OM*. Then it shows that they have totally antithetical outcomes. What they have in common is probably the fact of being hypotheses. What separates them is that in the third quotation from *OM* the Stoic element (the centripetal movement of the parts, i.e., the cohesive causality of the world) prevails over the non-Stoic one (the presence of the void within the world), whereas in the quotations from *OP* the non-Stoic element (a spatial difference in the infinite void) prevails over the Stoic element (again the centripetal movement of the parts, i.e., the cohesive causality of the world). This conclusion clearly suggests that if the non-Stoic element had prevailed over the Stoic one *also* in the hypothesis from *OM*, such an overturning would unavoidably have been made the target, on Plutarch's part, of a critique comparable to that addressed to the quotations from *OP*. This is because, with the abolition of the centripetal movement of parts, such a hypothesis would have resulted equally incompatible with the Stoic official stand. But this can only indicate the total indifference of Plutarch towards the hypothetical status of all the passages in question. If Plutarch had taken account of this status, he would not have been shocked if Chrysippus had argued, for example, that due the presence of the void within the world the movement of a single part, separated from the rest, ceases to be centripetal.

After all this, we can return to the question of whether we can trust Plutarch when in this chapter he quotes, paraphrases and criticizes Chrysippus. Plutarch can afford to be faithful to Chrysippus' letter because he is totally indifferent to the hypothetical character of this alternative and anisotropic cosmological scenario. The mere omission of this decisive feature has the immediate and desired consequence of making Chrysippus' statements dogmatic without the need to manipulate their form or their meaning. The contrast with the preceding statements evoked by μᾶλλον (fr. 1) – as well as the adherence to what follows implicated by ἐμοὶ φαίνεται (ibid.) – has perhaps, in the eyes of Plutarch, minimized the hypothetical status of Chrysippus' statement and maximized its dogmatic potential. But precisely for this reason, Plutarch's criticism is entirely superficial. It lacks scrupulousness towards a fair and honest doctrinal assessment. It ignores the fact that what is entirely admissible and allowable in a hypothesis (the anisotropy of the void), is not within a dogmatic statement. To easily get the better of Chrysippus, Plutarch does not consider this fundamental distinction.⁵⁴

⁵¹ Chrysippus' tendency to contradict himself broadly results in the two following contradictions, which are not made explicit by Plutarch. The first is the contradiction between the thesis that the parts do not exist independently of the whole of which they are parts (μὴ καθ' αὐτὰ εἶναι: 1054f) and the thesis that each part moves towards the center of the world independently of the whole of which it is a part (καθ' αὐτὸ κινεῖσθαι: 1055c). The second contradiction is perhaps that between the thesis that the world is an integral plenum and the thesis that there is void within the world.

⁵² 1055b.

⁵³ Casevitz–Babut (2004) 347 n. 567.

⁵⁴ For all these reasons, the interpretation that I defend in this paper should perhaps be included in the second hermeneutical category.

As for the problem of whether Plutarch was familiar with the context of the two quotations or not, my impression is that the answer must be negative. While he seems to make his way through the treatise on movement with a certain nonchalance, nothing in chapter 44 seems to refer to what precedes our two quotations. For Plutarch seems to know what lies between them, but does not the content of the passages immediately preceding and following the one quoted by him. Yet, if it is true – as we shall soon see – that the first quotation contains both the conclusion of Chrysippus’ reasoning and an alternative cosmological hypothesis that seems to contrast with what was stated immediately before, then in the preceding passage Chrysippus must have supported the official Stoic position regarding the indestructibility and quasi-indestructibility of world. For such a position presupposes the thesis of the isotropy of the void. Now, it is hard to believe that Plutarch was aware of this portion of text (now lost), yet missed the chance to use its official Stoic pronouncements against Chrysippus.

The time has come to examine the content of both quotations, bearing in mind that while the *OM* hypothesis is clearly harmless, as it is only designed to affirm in a paradoxical form the centripetal movement of the parts of the world, the rationale of the *OP* hypothesis seems to conceal something more serious.

5. *The first fragment*

When Plutarch sets out to quote the first portion of text from Chrysippus’ *OP*, he sums up its content by stating that after hypothesizing (ὑποθέμενος) the existence of a central τόπος and a central χώρα, Chrysippus located the world (ἐνταῦθά φησιν ἰδρῦσθαι τὸν κόσμον) there.⁵⁵ In a similar passage from the *De defectu oraculorum* we read:

This is actually what he says in the fourth book of his work *Peri dunatōn*, where he both indulges in a day-dream of a central place in the infinite and still more preposterously hypothesizes that the cause of the permanence of the world lies in that non-existent centre.⁵⁶ (tr. Babbitt, slightly modified)

Ταυτὶ γὰρ ἐν τῷ τετάρτῳ περὶ Δυνατῶν λέγει, μέσον τε τοῦ ἀπείρου τόπον οὐκ ὀρθῶς ὄνειρώτων ἀτοπώτερον τε τῆς διαμονῆς τοῦ κόσμου τῷ ἀνυπάρκτῳ μέσῳ τὴν αἰτίαν ὑποτιθεῖς.

We have seen that there are good reasons to believe that the participles ὑποθέμενος, ὑποτιθείς and ὄνειρώτων represent Chrysippus’ words, not just Plutarch’s. They suggest that Chrysippus introduced the idea of a central τόπος and a central χώρα as a conceptual fiction, or even thought experiment. We should therefore be cautious in approaching the content of the first quotation and the immediately following one: for we should envisage the possibility that what this alleged anisotropic ‘hypothesis’ is presenting partly entails views which are not representative of the official Stoic position on the subject.

The text of the first Chrysippean quotation is very uncertain and possibly corrupt.⁵⁷ I here follow the text constituted by the last editor of the *OSC*, Michel Casevitz:

Consequently, even in the case of the world the question of whether it should be said to be destructible stands, I believe, in need of qualification. All the same, it seems to me that things are rather as follows: it is as though the occupation of the place *also* contributed much to its quasi-indestructibility, i.e. on account of the fact that it (*scil.* the world) lies at the centre; for if we were to imagine it situated elsewhere, what would also completely follow from this would be the destruction of the world.

διὸ καὶ ἐπὶ τοῦ κόσμου εἰ ῥητέον αὐτὸν φθαρτὸν εἶναι, λόγου οἶομαι δεῖσθαι. οὐ μὴν ἀλλὰ μᾶλλον ἐμοὶ φαίνεται οὕτως ἔχειν, οἷον εἰς τὴν ὥσπερ ἀφθαρσίαν πολὺ τι αὐτῷ συνεργεῖ καὶ ἡ τῆς χώρας κατάληψις, οἷον διὰ τὸ ἐν μέσῳ εἶναι (i.e. τὸν κόσμον)· ἐπεὶ, εἰ ἀλλαγῆ νηθηθεῖ ὧν, καὶ παντελῶς ἂν αὐτῷ συνάπτοι ἢ φθορά.

This fragment begins with a conclusion (διὸ) which contains both an indirect question introduced by εἰ and Chrysippus’ answer. The question is whether one should say that the world is destructible.

⁵⁵ *Ibid.* 1054c.

⁵⁶ 425e.

⁵⁷ See Casevitz–Babut (2004) 339 n. 545.

Chrysippus' answer is that the claim that the world is destructible stands in need of qualification or discussion (λόγου οἴομαι δεῖσθαι). Apparently, in the preceding portion of text, now lost, Chrysippus provided some observations to justify both question and answer. What observations? Perhaps something along the following lines. By 'κόσμος' we can understand both the qualified substance or God, which is eternal and indestructible by virtue of its only *hexis*, and the order in which the qualified substance is currently configured. This order immanent to the substance is generated and destructible.⁵⁸ In particular – and what we have here is the first modal observation – when it is affirmed that the world understood as διακόσμησις is destructible, the verbal adjective φθαρτός seems to express a mere sense of possibility which is inadequate to do justice to what the Stoics really meant by saying that the world is φθαρτός. For the Stoics this claim meant not only that the world can be destroyed but also that it *will* be destroyed at the end of the current cosmic cycle. In other words, we are dealing with a physical possibility designed by the divine mind to be unavoidably realized. Two passages make this point very clear.⁵⁹ It must be noted that these passages concern the gods and not the world. However, they may also apply to the world. For the gods and the world seem to entertain the same relationship with Zeus during their conflagration.⁶⁰ Indeed, Zeus' prerogative is the destruction of both via combustion.⁶¹ From both these passages it is clear that to say that the world is φθαρτός is equivalent to saying that the world is φθαρησόμενος ὑπὸ πυρός at the end of a cosmic cycle.

While the διακόσμησις is destroyed, the substance is altered, i.e. involved in a process of transformation in which the seeds for the rebirth of the διακόσμησις are sown. This is clearly stated in the following text, an Arius Dydimus fragment contained in Eusebius' *Evangelical Preparation*:

On the world's periodic destruction into fire at very long intervals 'destruction' is not used in an unqualified sense by those who hold that the whole world is dissolved into fire, which they call the conflagration. They use the term destruction in place of natural change. (Transl. Long–Sedley)

οὐ γὰρ ἐπὶ τῆς τοῦ κόσμου κατὰ περιόδους τὰς μεγίστας γινομένης φθορᾶς κυρίως παραλαμβάνουσι τὴν φθορὰν οἱ τὴν εἰς πῦρ ἀνάλυσιν τῶν ὄλων δογματίζοντες, ἦν δὴ καλοῦσιν ἐκπύρωσιν· ἀλλ' ἀντὶ τῆς κατὰ φύσιν μεταβολῆς χρῶνται τῇ προσηγορίᾳ τῆς φθορᾶς.⁶²

Arius reports that the Stoics (but a few lines above in the text he had mentioned Chrysippus), with reference to the world (conceived of as an eternal substance), did not use the word (προσηγορία) 'destruction' (φθορά) in the proper sense (κυρίως), namely as loss or death, but in the sense of natural change (ἀντὶ τῆς κατὰ φύσιν μεταβολῆς). The change in question consists in the

⁵⁸ As we have seen, the Stoics employed the word κόσμος in two different ways. According to DL VII 137, we have: 1) κόσμος in the sense of θεός, which is the active principle fully informing and determining matter (the text describes it as the ἰδίως ποιός which can be drawn ἐκ τῆς ἀπάσης οὐσίας). More specifically, the sources attest to the identification of the eternal world with Zeus (*SVF* II 528; Plutarch. *Stoic. rep.* 1052b–c). 2) κόσμος in the sense of διακόσμησις. Here διακόσμησις is used not in the sense of activity (*nomen actionis*) but in the sense of the result of an activity (*nomen rei actae*). See *SVF* II 527: Λέγεται δ' ἑτέρως κόσμος ὁ θεός, καθ' ὃν ἡ διακόσμησις γίνεται καὶ τελειοῦται. This is established by Diogenes Laertius by saying that God (θεός), the indestructible and non-generated ἰδίως ποιός, is the *artificer* (δημιουργός) of the world order (διακόσμησις). Διακόσμησις is the periodic and orderly state of the substance for which God is responsible. Based on the first usage, the κόσμος is indestructible and non-generated; by contrast, according to the second usage, it is generated and, hence, destructible. There is also a third use of κόσμος recorded by Diogenes: 3) κόσμος in a sense which derives from a combination of both 1 and 2. In whatever way we might wish to interpret the third notion of κόσμος, it is clear that this adds nothing to what the first two usages imply. Unsurprisingly, Arnim entitled the section which includes these passages *Duae notiones vocabuli κόσμος*. In my view, the purpose of this third notion of κόσμος is to reconnect what the first two uses separate, so as to prevent the active principle from being erroneously interpreted as something separate or transcendent.

⁵⁹ Plutarch. *Comm. not.* 1075c; *Stoic. rep.* 1052a.

⁶⁰ See Sen. *Ep.* 9, 16: "It (*scil.* the life of the wise man) will be like the life of Zeus, at the time when the world is dissolved and the gods have been blended together into one (*qualis est Iovis, cum resoluto mundo et dis in unum confusis*)".

⁶¹ *Comm. not.* 1075b.

⁶² Arius Didymus apud Euseb. *Pr. ev.* 15.18.2.

decompressive transformation of the world into the fire from which, as if it were a seed,⁶³ a διακόσμησις identical⁶⁴ to the former will be reconstituted in the next cosmogony, this time by compression.

Now, since the destroyed διακόσμησις returns in the next cosmogony in a form identical to the previous one, it seems to be in some way indestructible (in technical terms quasi-indestructible). That the διακόσμησις is in its own way indestructible is confirmed by the presence of the expression ἢ ὥσπερ ἀφθαρσία. The abrupt way such an expression makes its appearance in the first fragment suggests that the present one is not its only occurrence in this context. For this reason I consider it probable that in the immediately preceding portion of text, Chrysippus had spoken of the *sui generis* indestructibility of the world as διακόσμησις. In the homologous passage of *De defectu oraculorum*, Plutarch uses οἰονεὶ ἀφθαρσία. Assuming that both Plutarch passages are referring to the same fragment of Chrysippus, the choice of ὥσπερ instead of οἰονεὶ by Chrysippus probably reflects an attempt to avoid the repetition of the latter word. ὥσπερ here has the meaning of ‘as if were, so to speak’.⁶⁵ It is used to limit or modify an assertion or expression.⁶⁶ In a Stoic context, with οἰονεὶ and ὡσανεὶ, it belongs to the ‘as if’ jargon.⁶⁷ Inserted between the article and the noun, ὥσπερ here has the meaning of ‘quasi’.⁶⁸ By the expression ἢ ὥσπερ ἀφθαρσία Chrysippus sought to indicate the fact that the world as διακόσμησις is quasi-indestructible, i.e., that it is neither destructible nor indestructible in the proper sense. It is not destructible in the proper sense because instead of disappearing it rises again. It is not indestructible in the proper sense because within it destruction and rebirth eternally alternate. Chrysippus was perhaps thinking here about the conceptual connection between destructibility and eternity with regard to the world understood as διακόσμησις. With regard to a such connection, Simplicius⁶⁹ states:

Those who say there is always a world – not always the same one, but another one always coming into being according at periodic intervals of time – make the one world generated and destructible, as in the case of Anaximenes, Heraclitus, Diogenes, and later the Stoics.

γενητὸν δὲ καὶ φθαρτὸν τὸν ἕνα κόσμον ποιοῦσιν ὅσοι αἰεὶ μὲν φασι εἶναι κόσμον, οὐ μὴν τὸν αὐτὸν αἰεὶ ἀλλὰ ἄλλοτε ἄλλον γινόμενον κατὰ τινας χρόνων περιόδους, ὡς Ἀναξίμενης τε καὶ Ἡράκλειτος καὶ Διογένης καὶ ὕστερον οἱ ἀπὸ τῆς Στοᾶς.

From this text we learn that the Stoics spoke of the eternity of the world as διακόσμησις (γενητός and φθαρτός) not in the sense that this always exists in the same way but in the sense that it always returns in the same form and in the same position at the beginning of each cosmic cycle. This discontinuous eternity of the world is compatible with the affirmation of its destructibility. Philo of Alexandria is even clearer in this respect:

And according to these men (*scil.* the Stoics) one kind of world may be spoken of as eternal and another as both destructible, with reference to its present arrangement, and eternal as to the conflagration which takes place, since it is rendered immortal by regenerations and periodical revolutions which never cease.⁷⁰ (tr. Yonge,

⁶³ See Plutarch. *Comm. not.* 1077b where the fire is described as σπέρμα τοῦ κόσμου.

⁶⁴ As noted by Long–Sedley (1987), I, 312: “Stoics differed in their interpretations of ‘the recurrence of the *same* things’”. According to the interpretation of ‘the recurrence of the same things’ provided by Chrysippus, the exact same thing, down to the smallest details, will return (numerical identity: *ibid.* 313). See Nem. *De nat. hom.* 309, 5–311, 2 (Long–Sedley 1987 52C); Alex. Aphrod. *On Ar. Pr. An.* 180, 33–36 (Long–Sedley 1987 52F (1)); Simpl. *On Ar. Phys.* 886, 12–16 (Long–Sedley 1987 52E). It is clear that only a supporter of the trans-cyclical numerical identity of the world–διακόσμησις could have spoken of its quasi-indestructibility. For if it is not the same world (in all respects) that returns, we cannot say that the world enjoys a sort of indestructibility or *sui generis* eternity. See also Barnes (1978) 431–437, Salles (2003) p. 258 ff, and Boeri–Salles (2014) 445–448.

⁶⁵ Liddell–Scott (1996⁹) s.v. ὥσπερ II.

⁶⁶ *Ibid.*

⁶⁷ Crivelli (2007) 97–98.

⁶⁸ Casevitz–Babut (2004) 339 n. 345.

⁶⁹ *SVF* II 576.

⁷⁰ *SVF* II 620.

modified)

Δύναται δὲ κατὰ τούτους ὁ μὲν τις κόσμος αἰδῖος, ὁ δὲ τις φθαρτὸς λέγεσθαι, φθαρτὸς μὲν ὁ κατὰ τὴν διακόσμησιν, αἰδῖος δὲ ὁ κατὰ τὴν ἐκπύρωσιν παλιγγενεσίαις καὶ περιόδοις ἀθανατιζόμενος οὐδέποτε ληγούσας.

Philo here ascribes to the Stoics the thesis according to which something can be constantly refreshed so that it will never perish. It is also important to notice that Philo is clearly talking about the same world when he says that it is destructible and eternal, because it makes no sense to speak of regeneration, if not by reference to something which has perished. Philo is drawing a distinction here between an intra-cyclic perspective and a trans-cyclic perspective. According to the former, the world is destructible, whereas according to the latter, the world is eternal in its own distinct way, since “it is rendered immortal by regenerations and periodical revolutions which never cease”. Now, at the basis of the discontinuous eternity of the world there lies its *sui generis* indestructibility, which is to say the fact that it is regenerated at the beginning of every new cosmic cycle after having been destroyed at the end of the previous one.

Therefore one can reformulate what Chrysippus has said at the beginning of the first fragment as follows: when it is said that the world is destructible, one has to say this by appropriately qualifying this claim, namely, by specifying 1) that φθαρτός implies here a physical possibility that will inevitably be realized, 2) that this inevitable destruction affects the διακόσμησις but not the substance which is involved in a mere process of natural transformation, and 3) that such a transformation leads to the rebirth of a διακόσμησις identical to the previous one.

After all this, we can resume our reading of the first fragment. It is not at all clear how Chrysippus introduces the next part of the argument. Nor should it be forgotten that this is the part of the first quotation which is most troubling from a textual point of view. Anyway, it is the statement οὐ μὴν ἀλλὰ μᾶλλον ἐμοὶ φαίνεται οὕτως ἔχειν which plays a decisive role here. Its meaning is unclear, due to two obscure points: the expression οὐ μὴν ἀλλά and the adverb οὕτως. Οὐ μὴν ἀλλά, which is otherwise unattested in Chrysippus’ fragments, is probably used here in an adversative sense.⁷¹ In particular, this use can be compared to that detected by Denniston for Demosthenes and Aristotle.⁷² As Denniston puts it, οὐ μὴν ἀλλά, in the case of these two authors, “introduces a supplementary argument which takes such marked precedence over the previous argument that it is represented as contrasted with it, rather than as reinforcing it”.⁷³ As regards οὕτως, it is not clear whether it has an anaphoric or cataphoric sense here. The presence of οἰοεῖ suggests that it refers to what follows and not to what comes before. The meaning would be: ‘... thus/in this way, as though ...’. Now, this reading seems to be hindered by the adversative particle δέ. But this obstacle can be easily overcome. It can be hypothesized that the scribe took οὕτως in an anaphoric sense and hence added δέ after οἰοεῖ to bring out the contrast with the previous passage. In this case δέ should simply be excised. My guess is that οὕτως combined with οἰοεῖ introduces an hypothetical comparative clause. The comparative μᾶλλον evokes, in turn, some kind of opposition with what came before. It should therefore be understood as follows: Chrysippus is saying that despite the official line of the school regarding the quasi-indestructibility and indestructibility of the world, he is clearly aware of one difficulty. This suggests a different picture: it is as though etc. etc. The comparison illustrates the content of this difficulty through a hypothesis that lays out an alternative cosmological scenario compared to the official Stoic one.

My guess is that Chrysippus wants to suggest that he is developing a kind of *conscious* thought experiment. To this thought experiment there corresponds a partly true and partly false representation of the relationship between the world and the extra-cosmic void. The true part of the representation is the picture of the world as quasi-indestructible. The false one is the depiction of the central place as existing independently of the world and being causally efficacious. The decisive element that makes us confident that this is a conceptual fiction is the hypothesis εἰ ἀλλαχῆ νοηθεῖν

⁷¹ Denniston (1950) 29.

⁷² *Ibid.*

⁷³ *Ibid.*

ᾧν (“if we were to imagine it situated elsewhere”). The verb νοέω is used by Chrysippus as a synonym of ὑποτίθημι (καὶ εἰ λόγου χάριν νοήσαιμεν αὐτὸ καὶ ὑποθοίμεθα εἶναι ἐν κενῷ τινι τοῦ κόσμου τούτου) in a passage from his treatise *On Movement* (hereafter *OM*), quoted by Plutarch at the end of chapter 44, where he is undoubtedly proposing a hypothesis (λόγου χάριν).⁷⁴ Then, the sole reason why it makes sense to say εἰ ἀλλαχῆ νοηθείη ᾧν, is that Chrysippus is *imagining/hypothesizing* that the world is at the center (of the void, as we will shortly see). Chrysippus here is drawing an opposition – wholly internal to his thought experiment – between imagining the world as located in the middle and imagining it as being located elsewhere. But if it is true, as this hypothesis clearly suggests, that the distinction between an elsewhere and a center is not without consequences for the world, then Chrysippus, with his hypothesis, is doing nothing more than introducing a difference (διαφορὰ) in the infinite void.⁷⁵ Chrysippus is *hypothesizing* a different and anisotropic way of accounting for this sort of indestructibility (compared to the official isotropic explanation). The fact that Chrysippus was envisaging a different way of accounting for this sort of indestructibility is suggested by the statement πολὺ τι αὐτῷ (*scil.* κόσμῳ) συνεργεῖ καὶ ἡ τῆς χώρας κατάληψις, οἷον διὰ τὸ ἐν μέσῳ εἶναι (i.e. τὸν κόσμον). The καὶ and the verb συνεργεῖ reveal that Chrysippus is adding a new causal factor to that allowed by the official Stoic position (i.e. the cohesive force that pervades the world). In particular, συνεργεῖ expresses auxiliary causality, by contrast to structural or internal or even complete causality.

The adverb πολὺ seems to imply that the auxiliary causality of the central place is conceived of, in a unStoic way, as being predominant with respect to the cohesive one, immanent to the world. The combination of συνεργεῖ and πολὺ seems contradictory within a Stoic conceptual framework: for from a genuinely Stoic point of view, an auxiliary cause contributes to a given effect less than a *causa principalis*. We can imagine that such a combination of συνεργεῖ and πολὺ applies to the world when it is passing through the conflagration. We can take this phase to be particularly delicate one from a physical and causal point of view: so delicate, in fact, to require some kind of *auxilium*. An auxiliary cause would play a major role in such a phase, by contributing much to the desired effect. That at stake here is precisely the conflagration seems to be suggested by the fact that the world, described as quasi-indestructible, seems to connect, trans-cyclically, the end of a cosmic cycle to the beginning of the next one. Now, what stands between this end and this beginning is precisely the conflagration.

Plutarch’s interpretation diverges on this point from that advanced in the present paper. For he seems to suggest that the world’s destruction depends on the fact that the various parts of the world are sucked into and aspirated by the central place. What Plutarch – perhaps influenced by parallel passages from *OM* – seems to have in mind when talking about parts is the phase of the world coinciding with the διακόσμησις. It is to this attractive force, which is incompatible with the Stoic conception of the void as a causally inert incorporeal entity, that Plutarch is referring when he writes:

But there is a second (contradiction), which, while less evident, is more irrational than this, for in thinking that the world could not remain indestructible if by accident it were situated in another part of the void, he is evidently afraid lest the world be dissolved and destroyed because the parts of substance move towards the middle. (tr. Cherniss, slightly modified)

δευτέραν δ’ ἀδηλοτέραν μὲν ἀλογωτέραν δὲ ταύτης. οἰόμενος γὰρ οὐκ ἂν ἄφθαρτον διαμένειν τὸν κόσμον, εἰ κατ’ ἄλλο μέρος αὐτῷ τοῦ κενοῦ συντέτευχε γενέσθαι τὴν ἴδρυσιν, δηλὸς ἐστὶ δεδιῶς μή, τῶν μερῶν τῆς οὐσίας ἐπὶ τὸ μέσον φερομένων, διάλυσις καὶ φθορὰ τοῦ κόσμου γένοιτο.⁷⁶

On the contrary, the explanation advanced in this paper is that the cause of world’s hypothetical destruction is simply its conceivable distance (εἰ ἀλλαχῆ νοηθείη ᾧν) – as a fiery substance incapable of containing its expansion within the right physical limits during conflagration – from

⁷⁴ *De Stoic rep.* 1055c.

⁷⁵ Cherniss (1976) 580 n. c.

⁷⁶ *Stoic. rep.* 1054d–e.

the central and three-dimensional place with its centripetal force. This distance implies that the fiery substance cannot benefit from the *auxilium* provided by the central place in terms of containment. This point will be discussed in detail in section 7.

Finally, it is not enough to hypothesize a spatial difference with a causal power in the infinite void. One must also hypothesize that this special portion of space is occupied. Hence the particular use of *κατάληψις* in the sense of ‘possession’ or ‘occupation’.⁷⁷ It is clear that what is subject to this sort of *κατάληψις* will be pre-existent compared to the *κατάληψις* itself and exist regardless of whether this ever takes place. The force which this centre is equipped with, according to this hypothesis, contributes decisively to the quasi-indestructibility of the world.

Let us now turn to consider the second quotation from Chrysippus’ *OP*.

6. The second fragment

What I would suggest is that Chrysippus is here hypothesizing that the very same location also ensures the eternity of the οὐσία. The text reads as follows:

For in some such way the *ousia* too finds itself eternally occupying the central place, immediately emerging as something made in such a way that according to another manner, but also on account of this fact, it does not admit of destruction and is hence eternal.

(‘οὕτω γάρ πως καὶ ἡ οὐσία συντέτευχεν αἰδίως τὸν μέσον κατειληφύα τόπον, εὐθὺς τοιάδε τις οὔσα, ὥστε καθ’ ἕτερον τρόπον ἀλλὰ καὶ διὰ τὴν συντυχίαν (*scil.* κατάληψις τοῦ μέσου τόπου) μὴ ἐπιδέχασθαι αὐτὴν φθοράν <καὶ> κατὰ τοῦτ’ εἶναι αἰδίον.’).

The transition from the first to the second fragment corresponds to that from the trans-cyclical quasi-indestructibility of the world as *διακόσμησις* to the eternity of the substance conceived of as God (οὐσία). I think that what ‘οὐσία’ means here is the qualified substance of which the ‘κόσμος’ is the destructible arrangement and in whom this latter is absorbed at the end of each cosmic cycle. The οὐσία of which Chrysippus speaks here is the same mentioned by Cleomedes when he says:

The [substance of the world] cannot be acted on in this way, since it has a holding power that holds it together and thus preserves it. Also, the enclosing void does not act at all, whereas this [substance] conserves itself through the exercise of its surpassing power as it is compressed, and again as it expands, in the void, in accordance with its natural changes—expanding into fire at one time, while setting out for the generation of the world at another. (tr. Bowen – Todd, slightly modified)

ἀλλὰ ... ὡς μηδὲ τοῦτο δύναται παθεῖν· ἔξιν γὰρ ἔχει τὴν συνέχουσαν αὐτὴν καὶ συντηροῦσαν. καὶ τὸ μὲν περιέχον αὐτὴν κενὸν οὐδὲν ποιεῖ. αὐτὴ δ’ ὑπερβαλλούση δυνάμει χρωμένη συντηρεῖ ἑαυτὴν, συστελλομένη τε καὶ πάλιν χεομένη ἐν αὐτῷ κατὰ τὰς φυσικὰς αὐτῆς μεταβολάς, ἄλλοτε μὲν εἰς πῦρ χεομένη, ἄλλοτε δὲ καὶ ἐπὶ κοσμογονίαν ὁρμῶσα.⁷⁸

The mention of a surpassing δύναμις which the οὐσία in question exerts in order to keep itself intact makes it clear that such an οὐσία must be identified with the union of God and unqualified matter.⁷⁹ From Alexander of Aphrodisias we know that for the Stoics during the conflagration “ἡ ὕλη καὶ θεὸς σφύζονται μόνοι”.⁸⁰

Since the οὐσία is the eternal union of God and matter of which the κόσμος is the *διακόσμησις*, it goes without saying that, if we posit the latter as being situated at the centre of void, we should do the same with its οὐσία (οὕτω γάρ πως καὶ ἡ οὐσία). The verb *συντυγχάνω* indicates a concomitant

⁷⁷ Liddell–Scott (1996⁹) s.v. *κατάληψις* I 3.

⁷⁸ *SVF* II 540 (Cleomedes).

⁷⁹ Because the world is “a cyclical process which alternates for ever between an ordered system ... and a state of pure fire” (Long–Sedley, 1987, I, 278), when we speak of the union of God and matter we must distinguish between the union of God and matter that takes place in the *διακόσμησις* (DL VII 137 = Long–Sedley, 1987 44F) and the union of God and matter that is realized during the conflagration (*ibid.*; Calcid. *In Tim.* 292 = Long–Sedley, 1987 44D). While in the first case the word ‘union’ is to be understood in the sense of *nomen rei actae*, in the second case it is a *nomen actionis*. See also Alex. Aphrod. *De mixt.* 226, 10 Bruns (*SVF* II 1047), where God is described as the form of matter.

⁸⁰ *SVF* II 1047.

factual condition (the fact of both quasi–eternally and eternally occupying an independent central place). However, since – unlike the κόσμος as διακόσμησις – this οὐσία is truly indestructible and eternal, it must have seamlessly occupied the central place from eternity. If this is the case, then right from the start the οὐσία has been such as to not admit of destruction; hence, it is eternal for the reasons upheld by the official position of the school, but *also* on account of this fact (i.e. that it occupies the central place). Chrysippus here claims that the eternity of the οὐσία is due to another τρόπος (possibly the ἕξις of the οὐσία) but *also* to the fact that it occupies the central place. The two causes, therefore, are not placed on the same level. Had Chrysippus intended to do so, he would have inserted οὐ μόνον between ὥστε and καθ’ ἕτερον τρόπον. However, the following anomaly should be noted. While in the first fragment the major causal role falls on the external factor (πολύ τι and παντελῶς), in the second one Chrysippus seems to present the occupation of the central place as a merely additional causal element (ἀλλὰ καὶ διὰ τὴν συντυχίαν).

Chrysippus is perhaps giving us a clue that this anisotropic hypothesis does not belong to the official thought of his school. From Arius Didymus we learn that Chrysippus drew a distinction between χώρα and τόπος.⁸¹ Now, apparently this distinction is ignored in the two quotations from *OP*: for the two terms are practically used as synonyms (first quotation: ἡ τῆς χώρας κατάληψις; second quotation: τὸν μέσον κατειληφύια τόπον).⁸² If the central place, as an independent spatial difference provided with causal force, is unacceptable in Stoic physics, it goes without saying that it can neither be χώρα nor τόπος in the technical and official sense that Chrysippus gives to these two terms.⁸³ Indeed, for Chrysippus χώρα was probably only an intra–cosmic portion of space,⁸⁴ while τόπος was conceived as a body–dependent spatial entity.⁸⁵ Since it is neither one nor the other in a technical Chrysippean sense, the central place can equally be called χώρα or τόπος in the ordinary sense of these two words, which are sometimes synonymous. If this is the case, we have good enough reasons to believe that the Plutarch passage with the two quotations from Chrysippus’ *OP* does not constitute a reliable witness for the latter’s conception of space.⁸⁶

7. Chrysippus’ difficulty

The time has come to dwell on the difficulty into which Chrysippus ran, according to my hypothesis. It has been argued that for Chrysippus the official thesis of the school on the *hexis* preserving the world’s substance was somewhat implausible. This implausibility may have concerned fire and its capacity, during the conflagration, to preserve the expanding mass within the right physical limits so that it is not destroyed but can be reconsolidated and give rise to a new cosmic cycle. It can be expressed as follows: what if fire alone⁸⁷ were not enough to preserve the expanding (ἐκχεομένη) cosmic substance during the conflagration? During the conflagration there is no air to ensure the centripetal movement contrary to the centrifugal one of fire.⁸⁸ But it is only

⁸¹ Ar. Did. fr. 25 apud Stob. *Ecl.* I 18, 4d (*SVF* II 503 = Long–Sedley, 1987 49 A).

⁸² Casevitz–Babut (2004) 338 n. 543..

⁸³ Ar. Did. fr. 25 ap. Stob. *Ecl.* II 18, 4d (*SVF* II 503 = Long–Sedley, 1987 49 A).

⁸⁴ My opinion is that for Chrysippus the χώρα was the accessible and liveable intra–cosmic space. See, in this regard, Sedley (1999) 397 and Alessandrelli (2014) 59–63.

⁸⁵ The τόπος is the place formed by the occupying body. From an ontological point of view, it is a portion of space totally dependent on the occupying body (including the world). See Alessandrelli (2014) 58.

⁸⁶ As Algra (1995) 307 ff. believes. He conjectures (305) that the place in question is the centre of a finite space, namely the χώρα. For two reasons I consider this conjecture questionable. The first one is that τόπος and χώρα clearly appear to be synonymous terms here. This fact excludes a technical use of χώρα. The second reason is the hypothetical character of the cosmological scenario developed by Chrysippus. The rationale of this hypothesis seems to require that the place in question be the centre of the void. This should not trouble us. Just as Chrysippus hypothetically admitted the presence of void within the world, he may also have hypothetically admitted a centre of the void. To tell the truth, in the two fragments from *OP* Chrysippus does not speak of center of the void. It is Plutarch who is responsible for this deduction, which I nonetheless take to be correct.

⁸⁷ *SVF* II 1047: εἶγε ἐν τῷ πυρὶ, ὃ μόνον ἐστὶ κατ’ αὐτοῦς τότε.

⁸⁸ As is clear from *SVF* II 616, while under the system of διακόσμησις α στοιχείων ἰσονομία subsists, which is nothing more than their reciprocal counterbalancing, under the system of conflagration we have “the prevalence over everything

the co–occurrence of contrary movements that guarantees endurance and cohesion.⁸⁹ Therefore, the dispersion (and consequent destruction) of the cosmic substance during the conflagration seems inevitable. But if such an inexorable and unstoppable dispersion occurs, there can be no re–compacting of the substance. And if there is no re–compacting of the substance, there cannot be any regeneration of the world as διακόσμησις. And without regeneration one cannot of course speak of quasi–indestructibility for the world as διακόσμησις. Hence the hypothetical and anisotropic scenario alternative to the official one: an independent central place that compensates for the absence of a centripetal movement in the burning cosmic substance and contains the centrifugal tendency of fire within the right limits. Let us imagine that the central place is a three–dimensional force field that embraces the whole fiery substance and that exerts its action on every point of the expanding incandescent sphere, so as to contain it within the right physical limits. This action will be directed towards the center of the sphere, while the action of fire will be centrifugal. If we imagine the world (during the conflagration) as not being surrounded by this force–field and therefore as unable to benefit from its centripetal performance, the world will face complete destruction because there will be nothing able to contain its expansion within the right physical limits – that is, in a way that allows it to recompose itself and initiate the next cosmic cycle. Such a three–dimensional force–field defines absolute points of reference in the void (top, bottom, right, left) and contributes to the cohesion of the world throughout its life cycle. Plausibly, up to the conflagration it contributes little to this condition, whereas during the conflagration it contributes “a lot” (fr. 1: πολύ).

8. Chrysippus’ solution

We do not know whether Chrysippus tried to overcome the difficulty from which the above hypothesis originated. Indeed, we do not even know whether he ever really encountered such a difficulty. Assuming that he did face it, we can only suspect that, however great the problem may have been, it was not enough for him to change his mind. An even more important question is why Chrysippus chose to openly present this hypothesis in a work on modal logic. If his hypothesis pertains to the field of physics, then Chrysippus must have had a very strong reason to formulate it in such a context. And there is a strong suspicion that this reason had to do with the fact that a good solution to the underlying difficulty lay not in the field of physics but in that of modal logic. Therefore, it is legitimate to believe that Chrysippus dealt with it in *OP* and precisely in the immediate continuation of the argumentation, which was truncated by the excerptor. But how?

Chrysippus may have adopted the following solution: he may have introduced a distinction between possible universes (by ‘universe’ here I mean the union of world and void). As a result, it cannot be excluded that Chrysippus connected such a hypothesis to something like a counterfactual alignment of the universe, alternative to the actual one, chosen by the divine mind. Now, if the actual universe has been chosen by the divine mind, then it is the best⁹⁰ or at least the most rational of all possible universes. But if such a universe is the best or at least the most rational of all, then it makes no sense to doubt the adequacy, during the conflagration, of the cohesive causality of fiery substance, which must be identified with God himself.⁹¹ For conflagration is the phase of the life of the world (conceived of as an eternal substance) in which “no evil whatever remains”⁹² and “everything is prudent and wise”.⁹³ According to Chrysippus, during the conflagration only the souls of wise men

else of the power of God” (ἐκπύρωσιν μὲν κατὰ τὴν τοῦ θεοῦ δυναστείαν τῶν ἄλλων ἐπικρατήσαντος). The prevalence of God is nothing but the prevalence of fire.

⁸⁹ Galen, *On nat. fac.* 106, 13–17 (Long–Sedley, 1987 47D); Long–Sedley (1987) 47I, 47J. See also Long–Sedley (1987), I, 288–289.

⁹⁰ Bobzien (1998) 13, mentions the Stoic tenet according to which “the world is organized by God or Nature so that it is the best possible world”. See also *ibid.* 30.

⁹¹ DL VII 137 (*SVF* II 526); Ar. Did. fr. 31 (*SVF* II 527) and fr. 29 (*SVF* II 528). See Mansfeld (1979) 177.

⁹² Plutarch. *Comm. not.* 1067a: κακὸν μὲν οὐδ’ ὅτι οὖν ἀπολείπεται.

⁹³ *Ibid.*: τὸ δ’ ὅλον φρόνιμὸν ἐστὶ τηλικαῦτα καὶ σοφόν. Similarly, Stoics (including Chrysippus) called the conflagration κάθαρσις τοῦ κόσμου (*SVF* II 598; see also *SVF* II 1174).

continue to exist.⁹⁴ If the actual universe is the best or at least the most rational of all, the fire in which the substance is transformed during the conflagration *must*⁹⁵ have, by virtue of an irrevocable rational *decretum*, characteristics such as to ensure that its expansion takes place within the right physical limits, thereby guaranteeing the eternity of the substance and the quasi-indestructibility of the διακόσμησις.⁹⁶ This solution shows that Chrysippus' doubt arose from a reductionist representation of the role of fire during the conflagration. As a consequence of this, the alternative and anisotropic universe underlying the cosmological hypothesis forged by Chrysippus in the fourth book of *OP* reveals its rational inferiority, owing to the pre-eminence within it of the mechanistic element over the teleological one. This pre-eminence, of course, does not mean or imply the absence of the teleological element, but only that it plays a secondary role within this alternative universe.⁹⁷

9. Final Synopsis

For the benefit of the reader I will now take stock of what I believe to have been Chrysippus' overall reasoning.

The starting point of the present investigation has been the apparent contradiction between the official Stoic thesis of the isotropy of the void and that of its anisotropy (documented by the two Chrysippus quotations from *OP*). It has been argued that there is no contradiction because the thesis of the isotropy of the void has been advanced by Chrysippus not in a dogmatic context but within a cosmological hypothesis, in order to give an intentionally unorthodox (as anisotropic) solution to a doubt concerning the official position of the school on the cohesive force of the expanding fiery cosmic mass during the conflagration.

I have taken into account both what he says in the two fragments and what he may have said in the previous and subsequent portions of the text, now lost. It has been seen that, according to the new interpretation here advanced, there are three modal observations that Chrysippus develops here. Firstly, it is necessary to clarify that the world as διακόσμησις is not destructible in the sense that it *can* be destroyed (as the verbal adjective φθαρτός would suggest) but in the sense that it will inevitably be destroyed by fire at the end of a cosmic cycle (physical possibility). This is the first modal observation. To say that the world will inevitably be destroyed by fire at the end of a cosmic cycle is tantamount to saying that it finds in its end (i.e. the conflagration) the foundations for a new beginning (in the next cosmogony). Since the οὐσία is not destroyed but rather transformed, the correct way of considering the διακόσμησις is that defined by the trans-cyclical perspective that holds together its end and its new beginning. From this perspective, the world must be considered to be quasi-indestructible. What is indestructible and eternal in the strict sense, by virtue of its causal force, is only the qualified substance of which the world is the διακόσμησις.

⁹⁴ DL VII 157. See also *SVF* II 810.

⁹⁵ Sedley (Routledge Encyclopedia of Philosophy): "Although a conflagration terminates each world phase, this is not its collapse into ruin but its achievement of perfection. That is because 'creative fire' (*pyr technikon*) is the purest, the most divine and the most creative form of divine *pneuma*, to be associated more with the light and warmth that promote growth than with flame".

⁹⁶ The question of the different possible worlds is also based on the doctrine of the seminal reasons that guarantee the unaltered permanence of the intelligible structure of the world. They guarantee the divine providential design and the very rationality that informs nature. This intelligible, rational structure resides in the mind of God until it is time to reshape another natural world. This aspect could also be useful from a modal perspective: Chrysippus probably believed that everything that is included in the seminal reasons is possible, which does not mean that everything included in the seminal reasons is destined to be realized always and in any case. The different possible universes must all be contemplated by the complex of seminal reasons residing in the mind of God (I wish to thank one of the anonymous referees for this observation).

⁹⁷ Long-Sedley (1987), I, 278: "Fire, as a causal agent, naturally suggests a mechanistic method of explanation, and that seems to be attached uneasily, if not superfluously, to the providential intelligence and creativity the Stoics ascribe to god. Standard summaries of Stoic cosmogony ... can give the impression that transformations of fire are sufficient by themselves to explain the origin and present order of things".

Considerations of this nature may be at work behind Chrysippus' claim (fr. 1) that the assertion that the world is destructible stands in need of qualification (διὸ καὶ ἐπὶ τοῦ κόσμου εἰ ῥητέον αὐτὸν φθαρτὸν εἶναι, λόγου οἴομαι δεῖσθαι). But here a difficulty emerges. This difficulty seems to challenge the adequacy of the cohesive causality of fiery substance to ensure its eternity and the quasi-indestructibility of its διακόσμησις. We know that the cosmic mass of substance grows out of proportion during the conflagration. A huge force is required in order to keep this incandescent mass within the right limits and to prevent it from dispersing into the void. But what if the causal cohesive force of the fiery substance were not enough to preserve it from dispersing into the void during the conflagration? The qualified substance would disperse into the void to such an extent that the διακόσμησις would not survive the conflagration. For this reason, in the light of this doubt, we must conclude perhaps that things are not as we say but, rather, in the following way: it is as though (οὐ μὴν ἀλλὰ μᾶλλον ἔμοι φαίνεται οὕτως ἔχειν, οἶονεῖ) there were a διαφορά in the void, that is a central place, independent of the world and equipped with centripetal force. It would follow that the quasi-indestructibility (ἢ ὥσπερ ἀφθαρσία) of its διακόσμησις no longer depends only on the causal force of the qualified substance but also on something else, namely, according to Chrysippus' hypothesis, on something like a central place independent of the world/substance. The occupation of this place by the substance thus provides a decisive contribution to the quasi-indestructibility of its διακόσμησις, as during the conflagration such a place keeps the cosmic substance within the right physical limits. What we have here is the second modal observation. For this heterodox hypothesis confines the possibility of the destruction of the world (logical possibility) within the domain of counterfactuality (εἰ ἀλλαγῆ νοηθείη ὄν, καὶ παντελῶς ἂν αὐτῷ συνάπτοι ἢ φθορά). And it goes without saying, of course, that the occupation of this place also guarantees the eternity and indestructibility of the substance itself (fr.2). The third modal observation has to do with the solution of this difficulty supposedly proposed by Chrysippus in the following part of the text, now lost. This solution consists in drawing a distinction between the actual universe (τὸ πᾶν: the world plus the void), chosen by the divine mind, and possible universes (one of which is considered in the heterodox and anisotropic hypothesis), and in asserting the rational and physical superiority of the former over the latter (owing to the pre-eminence of the teleological element over the mechanistic one). Since this superiority is incompatible with the doubts concerning the adequacy of the cohesive causality of the world during the conflagration, they too must be set aside.

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