Does the Universe Perceive? On Cosmic Perception in the *Timaeus*

*Alesia Preite* | ORCID: 0000-0003-0958-6477
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Stipendiary Lecturer in Philosophy at Christ Church, University of Oxford, Oxford, UK
alesia.preite@chch.ox.ac.uk

Abstract

In the present paper, I argue that in order to be in a position to understand what the World Soul thinks about, we need first to answer the question of whether the universe perceives and if so, of what it perceives. I shall first (section 1) lay out the main reasons for suspecting that the universe has perception and some possible objections against this view. I will then (section 2) make a case for my claim that the universe has perception on the basis of my ‘minimalist’ account of perception, which identifies four necessary and jointly sufficient conditions for having an instance of *aisthēsis*: 1) a body; 2) a soul; 3) affections which cause motion/change in the body and in the soul; 4) the cause of these affections. I will show that the universe composed of a World Body and a World Soul meets all four conditions. On the basis of this, I will claim that one can ascribe (self-) perception to the universe. Finally (section 3), I will suggest that the universe perceives the polyhedra of its own body.

Keywords

Perception (*aisthēsis*) in the *Timaeus* has been widely discussed; however, very little attention has been paid to the question as to whether also the World Soul perceives.¹ In the present paper, I argue that in order to be in a position to understand what the World Soul thinks about, we need first to answer the question of whether it perceives and if so, of what it perceives. I disagree with Corcilius (2018: 92–94), who claims that the World Soul has access to ‘things in the cosmos’ despite being deprived of the ‘faculty of perception’. I will show that his contention is false, and that ascribing perception to the universe can make better sense of the World Soul’s cognitive activity, allowing one to qualify what are the ‘things in the cosmos’ the World Soul thinks about.

I have just indicated the World Soul as the subject of perception, although I will often (as in the title of this paper) claim that the universe as a whole perceives. In the *Timaeus* and elsewhere, Plato often talks of the soul alone, rather than of the entire organism, as the subject of perception. This does not mean that in order to perceive a soul does not always need a body, but that ultimately the subject of perception can be identified with the soul.

This paper has three sections. I shall first lay out some reasons for suspecting that the World Soul has perception and address possible objections against this view (section 1), then make a case for my claim that the World Soul has perception on the basis of my ‘minimalist’ account of perception (section 2), and finally suggest that the World Soul perceives the polyhedra of its own body (section 3).

### 1 Some Preliminary Reasons to Suppose That the World Soul Perceives

The first piece of evidence that leads one to suspect that the World Soul has *aisthēsis* is a passage about the World Soul’s cognition, wherein the World Soul is said to produce *doxai kai pisteis* in relation to what is perceptible (*peri to ¹ To my knowledge, Reydams-Schils’ ‘Plato’s World Soul: Grasping Sensibles without Sense-Perception’ (1997) is the only paper explicitly and exclusively devoted to this question: as the title readily suggests, it comes to conclusions which are very different from mine. Most recent scholars, like Corcilius (2018), who in turn relies on Reydams-Shields, and Campbell (2021) deny that the World Soul has perception. Proclus (*In. Tim. 111.90.8–11*) seems to have entertained a view compatible with mine, and is quoted approvingly by Johansen’s (draft). Moreover, Cornford (1997 (1937): 96) claimed that the World Soul ‘might be imagined as having internal feelings, which would be covered by the word *aesthesia*.’

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aisthēton). I take the text to suggest that the World Soul must perceive the latter.

**T1** (*Ti. 37a2-c5*)

(Ia) Therefore, since it was mixed from these three parts of the nature of the same and of the nature of the different and of being, and it was divided and bound together according to proportion, and is itself circling back upon itself, (Ib) whenever it grasps something that has divisible being and whenever it grasps something that has indivisible being (ὅταν οὐσίαν σκεδαστὴν ἔχοντός τινος ἐφάπτηται καὶ ὅταν ἀμέριστον), (Ic) it says (λέγει), being moved through its whole self, whatever something is the same (ταὐτὸν) as and whatever it is different (ἐτερὸν) from, most of all in relation to what as well as where and how and when it happens that each of these things is and is affected in relation to each one both with respect to becoming things and with respect to things that are always the same. (IIa) A discourse turning out to be invariably true (λόγος δὲ ὦ ὦ κατὰ ταὐτὸν ἀληθὴς γιγνόμενος) both about the different (ἐτερὸν) and about the same (ταὐτὸν), in what is moved by itself carried without voice and sound, (IIb) whenever it becomes about what is sensible and the Circle of the Different going straight communicates [them] to its whole soul, opinions and convictions stable and true come about (ὅταν μὲν περὶ τὸ αἰσθητὸν γίγνηται καὶ ὁ τοῦ θατέρου κύκλος ὀρθὸς ᾖ καὶ πάσαν αὐτοῦ τὴν ψυχὴν διαγγείλῃ, δόξαι καὶ πίστεις γίγνονται βέβαιοι καὶ ἀληθεῖς), (IIc) whenever in turn is about what is an object of calculation and the Circle of the Same being well-running declares them [to its whole soul], intellect and knowledge necessarily are accomplished (ὅταν δὲ αὖ περὶ τὸ λογιστικὸν ἔχει καὶ ὁ τοῦ ταὐτοῦ κύκλος εὐτροφος δὲν αὐτὰ μηνύσῃ, νοῦς ἐπιστήμη τε ἔξι ἀνάγκης ἀποτελεῖται). (My translation)

The two pairs of *hotan* clauses in T1(Ib) on the one hand, and in T1(IIb) and T1(IIc) on the other, are mutually illuminating: as the chiastic structure of the passage suggests,* tinos echontos ousian skedastén and to aisthēton on one side

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2 I follow Corcilius’ subdivision (2018: 54–55; 75) into two sentences (I and II) subdivided in three sections each (Ia-c and IIa-c).

3 If we leave out Ia, the rest of T1 has a chiastic (A-B-B-A) structure:

A. the pair of ὅταν clauses of Ib on the one side (A) and the pair of ὅταν clauses in IIb and in IIc respectively on the other side (A) are parallel to one another;
and \textit{tinos echontos ousian ameriston} and \textit{to logistikon} on the other pick out the same objects of cognition, presented in the same order. Unlike Corcilius (2018: 57–64), I do not think that the World Soul grasps only ‘materially extended objects’ (63) in the \textit{kosmos}, which can have both indivisible being (something like their essence) and divisible being (something akin to accidental attributes). In line with all other interpretations of the passage, I submit that the World Soul has as objects of cognition the two ‘standard’ domains of Platonic epistemology: sensible bodies (cf. to \textit{aisthēton} in \textit{11b}) and Forms. In this paper, I shall focus on the former, claiming that the World Soul actually perceives them. In turn, this will show that the soul does not think about any sensible object whatsoever, such as, say, a dog, as Corcilius’ examples (2018: 57) instead suggest.

Before turning to these claims, let us look closer at \textit{ephaptētai} in \textit{T1(Ib)}. The term indicates a cognitive grasp, which may or may not be perceptual. In the \textit{Timaeus}, aside from the present occurrence, the verb is used four other times. Two metaphorical uses indicate a non-perceptual cognitive grasp, while two more literal occurrences refer to the mechanism of perception. In \textit{T1(Ib)}, the term is repeated only once, but the presence of the two \textit{hotan} suggests that we should consider it as being implicitly repeated twice; and this opens up the possibility that it might be used in two different ways in its two occurrences. When the soul \textit{ephaptētai} something that has indivisible being, the use must be metaphorical, since Forms are immaterial. Instead, I maintain that the fact that the World Soul \textit{ephaptētai} something that has divisible being leaves open the possibility that the World Soul perceptually grasps sensible things.

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4 Corcilius appeals to the presence of \textit{echontos} to justify his interpretation (2018: 63), but the text does not suggest that the soul can grasps things which have both \textit{ousia skedastēn} and \textit{ousia ameriston}; rather, the Greek implies that Timaeus is referring to two distinct sets of things.

5 Not only earlier interpretations but also more recent ones, including Betegh (2021: 95–98), Kalderon (forthcoming) and Petrucci (2022: \textit{ad locum}).

6 Corcilius (2018), Betegh (2019 and 2021) and Kalderon (forthcoming) all discuss the term at length, reaching different conclusions.

7 See 45d1 and 64e3: in both cases the term is used in the context of the theory of perception.

8 Note that the term \textit{ephaptomai} is also used for ‘grasping’ Forms in \textit{Rep. 484b5} and \textit{Symp. 211a5}.

9 Mark Kalderon, in a response to another paper of mine in 2019, suggested that this occurrence must also be considered strictly metaphorical, since this is the way we
Let us now consider some possible resistance to my reading of T1 and then some further evidence in support to my claim. With respect to T1(iiib), Reydams-Schils (1997: 263) notes that ‘the word for sense-perception (aisthēsis), is actually not used here, but has been replaced by a prepositional phrase, peri to aisthēton.’ In the purportedly ‘parallel case’ of T1. 35a2-6, the divisible being, sameness and difference entering the composition of the World Soul are characterized as peri/kata ta sōmata. Reydams-Schils maintains that ‘in both cases the preposition signals and separates’. I take issue with this alleged parallelism: while it is true that in the case of the passage on the composition of the World Soul the prepositional phrase is meant to avoid suggesting that bodies themselves (or what is corporeal as such) are part of the World Soul’s make-up, the same does not hold for the peri to aisthēton clause in T1. This is corroborated by the fact that the peri + accusative structure is also employed in T1(iic) with reference to to logistikon: it is simply one of the standard ways of referring to an object of cognition.

T1 is still compatible, however, with the denial of aisthēsis to the World Soul, and it alone is not sufficient to support the contention that aisthēsis should be ascribed to the World Soul (a claim for which I indeed make a positive case in section 2). That said, it seems to me that the epistemological framework provided by Timaeus throughout the dialogue can offer some further preliminary support for the claim that this is the best explanation for the World Soul’s ability to produce doxai in relation to to aisthēton. Consider the following two clauses from the prologue of Timaeus’ discourse (Ti. 27d5-29d6): ‘The former is grasped by understanding, which involves a reasoned account. […] The latter is grasped by opinion, which involves unreasoning sense perception’ (τὸ μὲν δὴ νοήσει μετὰ λόγου περιληπτόν […] τὸ δ’ αὖ δόξη μετ’ αἰσθήσεως ἀλόγου δοξαστόν (Ti. 28a1-3), tr. Zeyl); ‘perceptible things are grasped by opinion, which involves sense perception’ (τὰ δ’ αἰσθητά, δόξῃ περιληπτὰ μετ’ αἰσθήσεως (Ti. 28b7-c1), tr. Zeyl). From these passages we learn that in order to grasp becoming, one needs doxa with aisthēsis in the same way that one needs noēsis with logos to grasp being. Note that aisthēsis and logos match to aisthēton and to logistikon in T1 respectively. Moreover, in a passage at the beginning of the second part of the dialogue, it becomes apparent that doxa with perception grasps what is perceptible (αἰσθητόν […] δόξη μετ’ αἰσθήσεως περιληπτόν, 52a5-7). That is, must interpret the verb with reference to indivisible being. However, this point seems difficult to square with the repetition of hotan and the consequently implicit repetition of ephaptētai. Indeed Betegh (2019: 134) suggests that ephaptētai in T1(Ib) must be ‘construe[d] generously enough so that it encompasses both types of encounters’. He also remarks (134–135) that it is used more than once in the perceptual context of the dialogue, highlighting its active meaning – something I go back to in section 2.
from three key-texts in which Timaeus outlines the epistemological framework underpinning his discourse as well as the relationship between epistemology and his general metaphysical picture, we can establish that doxa, at least when it relates to what is perceptible, requires aisthēsis. With this claim I mean neither that all doxai about what is perceptible need to occur while a subject is perceiving (i.e., meta cannot imply concomitance between the production of doxa and a perceptual act), which would excessively restrict their scope, nor that they must all have as their object a perceptual particular thing (like the dog Fido or its brownness). What I take to be implied by the epistemological framework of the Timaeus is that in order to have doxai about perceptible things, the subject must have perceptions as her source. This interpretation is meant to include among those doxai also the ones that regard perceptible types or qualities (like dog or brownness). I do not thereby wish to commit myself to the claim that every type of doxa necessarily requires perceptions. There are two possible cases of doxa about what is not perceptible, which are highly controversial: doxa about Forms and about mathematical objects. It might be the case that even a subject without sense-perception could have doxai about Forms, or about mathematical objects. However, these cases need not concern us here, since all I am claiming is that doxai concerning what is perceptible must be based on perceptions. There are two possible objections to this: (i) why should the epistemological framework of the Timaeus also hold for the World Soul?; (ii) does ascribing perception to the World Soul make it irrational?

With regard to (i), Corcilius might reply that my reasons for suspecting that the World Soul perceives do not hold: he explicitly states (2018: 92–94) that we should not apply the same standards that apply to human beings to the superior intellectual being that is the World Soul. He relies upon (2018: 85, fn.68) Reydams-Schils, who claims that Timaeus’ ‘opening “declaration of principle”’ at 27d5-29d3 refers to the human and not to the divine ‘[kind of] thinking and sense perception', and that his ‘recapitulation on intellect and opinion' at 51d1-52a7 ‘also draws on the difference between the human and the divine' (1997: 262–3). However, the reasons she gives for both claims are shaky. As far as the ‘declaration of principles’ goes, she quotes its final

11 For this distinction between perceptible universals and particulars, see Harte (2008).
12 See the debate about this in relation to Rep. 474a-480a (cf. Fine (1990), and more recently, Harte (2017)).
13 Cf. the use of doxa in the Aviary model at Tht. 197d-199d.
14 An interesting (and possibly worrying) question arising here is whether the Demiurge, in order to create what is perceptible, would need to have doxai about it. Note that he surely does not meet the conditions for having perceptions that I outline in section 2.
lines (29c8-d1), wherein Timaeus reminds his listeners that they have a human nature, and that his discourse which will follow is an eikōs muthos. As Reydams-Schils (262) herself concedes, the characterization of eikōs muthos (whatever it implies)\textsuperscript{15} is not meant to (self-)apply to the epistemological considerations that frame it, including the ‘declaration of principles’ with the reference to human nature she refers to. If one grants this, I cannot see how the appeal to the human nature of the speaker and his audience should prevent us from applying the distinction of the prologue to both human and divine cognitive agents, particularly considering that at least some of the distinctions formulated there seem to be explicitly recalled in T1. Of course, one could claim that some things hold for both cosmic and human cognitive agents, but others do not. However, in the present section I only aim to show that we have good reasons to suppose that the World Soul might have perceptions, while in section 2, I shall offer positive evidence for the claim that the World Soul perceives. Reydams-Schils (263) refers also to 51e5-6, where all human beings are said to partake of true doxa, whereas only gods and a small group of human beings partake of nous. I do not see why this specific consideration about the ‘scarcity’ of nous among humans should rule out the possibility that aisthēsis is required for doxa, including when it comes to the World Soul.

Concerning (ii), Cornford (1997 (1937): 96), when discussing T1, claims that the World Soul ‘might be imagined as having internal feelings, which would be covered by the word aesthesis.’ He is taken by Reydams-Schils to ascribe irrationality to the World Soul, an interpretation which might be warranted by the fact that he describes the Circle of the Different as ‘stand[ing] for a semi-rational element of innate impulse amenable to the persuasion of Reason.’ (Cornford, 1997 (1937): 208, my emphasis). I agree with Reydams-Schils that it would be strange to ascribe to a god like the kosmos (or like the World Soul, for that matter) something that is bound to make it irrational. What might corroborate this worry is the fact that at 28a2-3 aisthēsis is qualified as alogos. There are at least two possible ways to defuse this concern. The first is simply to deny that 28a3 implies that all aisthēsis is alogos. This option cannot be ruled out, but would risk defeating my point that the epistemological content of the prologue is meant to apply across the board, not being restricted to human cognition. My response would be that even if aisthēsis were necessarily and invariably alogos, this would not prevent us from ascribing it to the World Soul. What does it mean that aisthēsis is alogos? It can be interpreted

\textsuperscript{15} For this notoriously complex topic see Burnyeat (2009) and Betegh (2010).
in two ways: a) being account-less, without explanation; b) not having propositional content. For the purposes of the present argument, I do not need to commit myself to either a) or b); it is enough to show that, whatever account we choose, alogos as applied to aisthēsis need not have a negative connotation, but can be understood neutrally, so that if alogos is meant to apply invariably to aisthēsis, it can be ascribed to a divine cognitive agent as well. I grant that alogos in the sense of a) does have negative implications, for instance when referring to doxa (as in 51e4), because doxa is the sort of thing which, besides having propositional content, could in principle be meta logou. However, I fail to see on what account perception could ever be meta logou. If we were to go with b), alogos would not need to be understood in a negative sense either, since not having propositional content appears to be a simple objective description. That is, in the case of both a) and b), aisthēsis turns out to be the sort of thing which essentially cannot have logos, not something which could in principle have it but happens to lack it. I take it that this essential impossibility removes the possible negative connotations of alogos and makes it a neutral descriptive term, which I suggest should be translated as ‘non-rational’ rather than as ‘irrational’.

2 A Case for the Perception of the Kosmos

I shall now offer a ‘minimalist’ account of perception in the Timaeus according to which there are four necessary and jointly sufficient conditions for having aisthēsis: 1) a body, 2) a soul 3) an affection leading to a motion/change (kinēsis) in the body and in the soul, 4) a cause of this affection. As it will become clear throughout this section, the fact that perception is also ascribed to plants constitutes the main evidence for my claim that those four conditions are both necessary and jointly sufficient for having aisthēsis. Indeed, as T3 (discussed below) shows, they appear to perceive merely in virtue of having a body and a soul, which are in turn affected and moved. In what follows, I shall argue that the kosmos satisfies all four of these necessary and jointly sufficient requirements.

2.1 Body

Timaeus’ cosmogonic story starts with the creation of the World Body. In order to make it, the Demiurge uses all four elements (fire, earth, water and air) in their entirety (32c5-6), ‘leaving over no part or power of any of them’ (32c6-8). The fact that there is nothing left outside the World Body makes it also (i) (as much as possible) a complete whole of complete parts (32d1-33a1); (ii) one,
given that nothing is left outside which could become something else (33a1-2); (iii) ‘ageless and free from diseases’ (33a2), for there is nothing outside it which could cause it to decay (33a3-a6). The Demiurge gives it a spherical shape (33b4) and ‘a perfectly smooth external shape all round, for many reasons’ (33b7-c1), some of which are laid out in the following passage:

T2 (Ti. 33c1-d3)

[a] For it had no need of eyes, as there remained nothing visible outside it, nor of hearing, as there remained nothing audible (ὁρατὸν γὰρ οὐδὲν ὑπελείπετο ἔξωθεν, οὐδ’ ἀκοῆς, οὐδὲ γὰρ ἀκουστόν); [b] there was no surrounding air which it needed to breathe in, nor was it in need of any organ by which to take food into itself and discharge it later after digestion. Nothing was taken from it or added to it, for there was nothing that could be; for it supplied its own nourishment from its own decay (ἀπῄει τε γὰρ οὐδὲν οὐδὲ προσῄειν αὐτῷ ποθεν – ἀυτὸ γὰρ ἑαυτῷ τροφήν τὴν ἑαυτοῦ φθίσιν παρέχον) [c] and by craft it had come into being in such a way that it suffered and did everything in itself and by itself (και πάντα ἐν ἑαυτῷ καὶ ύφ’ αὐτοῦ πάσχον καὶ δρῶν ἐκ τέχνης γέγονεν), as its constructor thought that it would be better being self-sufficient than being dependent on anything else. (tr. Lee, 2008: 22–23).16

In [a], we learn that the World Body has no eyes (because there is nothing outside it to be seen) nor hearing (since there is nothing audible). The World Body is deprived of the two most prominent senses, but we can safely infer that, given its shape (it does not have a nose or a mouth), the World Body does not have taste or smell either. Perceptions arising from affections common to the whole body (to which I return below) are not mentioned either. This passage is typically understood as implying that perception is denied to the kosmos. There are reasons both internal and external to this text that show that this must not be the case. Let us start with the latter. The fact that perception is ascribed to plants clarifies what is necessarily required for something to count as an instance of perception, and, more importantly, what is not, thereby opening up the possibility of ascribing perception to the kosmos. Below is the passage in which perception is ascribed to plants:

16 I have not modified Lee’s translation, as it is clear and readable. However, it is worth noting that parechon must be coordinated with paschon and drön. This consideration makes both Paulsen & Rehn’s (2003: 47) and Fronterotta’s (2003: 195–6) translations more accurate than Lee’s.
T3 (Ti. 77a4-c5)

[The gods devised and made to grow another nature akin to the human, but with different forms and perceptions (τῆς γὰρ ἀνθρωπίνης συγγενῆ φύσεως φύσιν ἀλλὰς ιδέας καὶ αἰσθήσεως κεραννύντες,) another kind of living thing, trees, plants and seeds. [...] Everything that has life has every right to be called a living thing; and the group of which we are speaking has the third form of soul, which we have located between mid-riff and navel, and which is without belief or reason or understanding but pleasurable and painful perception together with appetites (αἰσθήσεως δὲ ἡδείας καὶ ἀλγεινῆς μετὰ ἐπιθυμιῶν). It is always entirely passive; its formation has not given it the natural capacity to perceive and reflect on its own experiences, by revolving in and about itself, rejecting motion from without and exercising a motion of its own. So it is a creature with a life of its own, but it cannot move and is fixed and rooted because it has no self-motion. (tr. Lee, 2008: 74, slightly modified)

The body of plants is very different from that of humans in so far as it lacks sense organs, and this shows that while having a body is a necessary requirement for having aisthēsis, having a body with sense organs is not. This suggests that also the universe, whose body lacks sense organs, can perceive. Two possible objections might be levelled against this claim. Firstly, one could point out that plants are ascribed only pleasurable and painful perception. I am not hereby ascribing this same type of perceptions to the kosmos. It is indeed highly unlikely that this is the kind of perception that we could ascribe to the kosmos, which is described as ‘ageless and free from diseases’ (33a2), everlasting, self-sufficient, divine and enjoying a happy (eudaimōn) life (Ti. 34b5-9; 36e3-5), apparently ruling out the opposite states of (bodily) pleasure and pains, which notoriously get bad press in the Platonic corpus. I am only using the case of plant to show that sensory organs are not needed for aisthēsis. Plants are ‘a limiting case’ of a perceiving subject, precisely as the kosmos is. Secondly, and in connection to that, one could draw attention to the beginning of T3, where the nature of plants is said to be akin (suggenēs) to that of human, but with different forms and perceptions, and claim that this rules out an overall account of perception that would apply to both plants and animals (human and non-human), as well as to the kosmos.17 I grant that the point Timaeus makes at

17 Taking a different view, Carpenter (2010: 285–88) argues that it is difficult to understand why Plato would even call aisthēsis what he is ascribing to plants if it were to be something of a different kind from the human one. She also notes that they are ascribed the third part of the soul (the appetitive part), not something simply similar to it. She insists that aisthēsis needs to be the same for plants and humans (and thus goes as far as to suggest
the beginning of this passage is not easy to understand (what do the different forms (ideai) refer to?), but what I am trying to do here is to show that, since aisthēsis can be ascribed both to humans and to plants, it can also be ascribed to the kosmos. At 90a6-5, we are said to be ‘a plant which is not terrestrial but celestial’ (φυτὸν οὐκ ἔγγειον ἀλλὰ οὐράνιον), and the key term used by Timaeus to describe the relationship holding between human beings and the kosmos, and in particular between human rational souls and the World Soul, is suggenēs (cf. Ti. 47b8, 47d2, 90a5, 90c8). I take the suggeneia relationship that human beings share with plants on the one hand, and with the kosmos on the other, to suggest that ultimately Timaeus is keen to set apart all ensouled beings from inanimate ones. This makes it more plausible that he held an account of perception broad enough to apply to all of them.

Let us go back to T2[a]. It is possible to read this passage as implying exōthen after akoustōn as well, and one could interpret exōthen as an indication that there is nothing to see and hear outside, but that what is inside the World Body might still be – if not of course visible and audible – broadly perceptible. Here a question regarding perceptions caused by ‘affections common to the whole body’ (64a2-3) arises. Timaeus gives a very detailed physiological account of human perception at 61c3-68d8, distinguishing between affections common to the whole body (hot and cold, soft and hard, light and heavy, smooth and wrinkled) (61c3-64a1), pleasure and pain – which appear to be included among the affections common to the whole body in so far as they accompany some of them, and can also accompany perceptions connected to special sensory organs (64a2-65b3) – and perceptions connected to special sensory organs (taste, smell, hearing and sight (65b4-68d8)).

Could the kosmos have perceptions arising from affections common to the whole body in so far as they do not necessitate any sense organ? One might reply negatively and object that according to Timaeus one needs ‘flesh’ (sark, see 64b7 and passim) to have affections common to the whole body (as it is responsible for the initial transmission of these affections in humans) and this is something that the kosmos

that to phronimon (see T6 below) in the case of plants might be the World Soul). Such a strong claim does not seem necessary to me, and I think we can allow for different types of aisthēsis to fall under the same broader concept of aisthēsis. This seems to be the same take that Johansen (2022: 123) has on Carpenter, agreeing with Brisson (1997: 315) on this point (fn.45).

The sense of touch is not mentioned, although according to Cornford it might be identified with perceptions arising from affections common to the whole body, in so far as they coincide with a ‘generally diffused sense of touch’ (Cornford (1997 (1937): 259).

Flesh has a very specific composition, for which see Ti. 74c5-d2 on the creation of human flesh by the lesser gods.
can plausibly be considered to lack. Note, however, that plants also lack flesh but are still perceiving subjects simply in virtue of having a body and a soul. They also appear to have at least some of the perceptions arising from affections common to the whole body, namely pleasurable and painful ones. This leaves open the possibility that the kosmos might have something akin to perceptions arising from affections common to the whole body, although of course these cannot be caused by an external environment, and I ruled out above that they could be pleasurable and painful.

2.2 Soul

The kosmos has a soul, the World Soul, with a similar composition (compare 35a1-35b3 and 41d4-7) and the same structure (being made of the Circle of the Same and of the Circle of the Different, for which compare 35b7-d1 and 43d1-4c) as the human rational and immortal soul, located in the brain. Unlike the World Soul, humans also have a mortal soul, subdivided into a spirited and an appetitive part, respectively located around the heart and in the abdomen (see 69c5-79e2). What if the mortal parts of the soul were necessary for having perceptions? This would rule out the possibility of ascribing perception to the kosmos. Note that such a possibility is suggested precisely by the case of plants: the fact that they only have the third (appetitive) part of the soul to which perceptions are ascribed might turn out to be evidence against ascribing perceptions to the kosmos, since this might seem to imply that the mortal part of the soul is necessary and sufficient for perceptions. Indeed, the appetitive soul of plants is often invoked as a reason to believe that the mortal parts of the soul are necessary for perception, and some (although a minority of) scholars\(^\text{20}\) have deemed the mortal parts of the soul necessary for perceptions. If that were the case, we could not ascribe aisthēsis to the kosmos, which only has the immortal and rational World Soul. One could immediately block this objection and suggest that, even if the mortal parts of the soul were necessary for perceptions, that might hold only for mortal living beings like human beings and plants. Such a response might even be supported using the indication in T3 to the effect that there are different perceptions (in the plural): some might involve only the appetitive part of the soul (plants), some all parts of the soul (human beings and animals) and some only the rational part (World Soul, and, as I claim elsewhere, embryos). That said, showing that there is no evidence that mortal parts of the soul are necessary for perceptions even in the human case bolsters my overall argument.

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This passage is used by Silverman (1990: 150–2) to claim that perception must necessarily involve the mortal parts of the soul:

T4 (Ti. 61c6-d5)
Our argument must always presuppose the existence of sense perception, though we have not yet described the formation of the flesh and its properties or of the mortal part of the soul (σαρκὸς δὲ καὶ τῶν περὶ σάρκα γένεσιν, ψυχῆς τε δοσον ἡνητόν, οὕτω διεληλύθαμεν). Yet it is impossible to give an adequate account of them without reference to perceptual affections and vice versa; and equally impossible to treat both together. We must therefore assume the existence of one or the other and return later to examine what we have assumed. To enable us to proceed straight from the kinds to the affections, let us therefore make the necessary assumption about body and soul. (tr. Lee, 2008: 57)

On the basis of T4, I do not think we have any reasons to assume that perception must be ascribed to the mortal parts of the soul. The last sentence makes clear that background assumptions about the body and soul in general are made at this stage of the dialogue: in the same way that flesh is not necessarily needed for any and every instance of perception (but can and in fact is involved in many cases of perception), the most plausible interpretation of the mention of the mortal soul in T4 is that it can (but need not) be involved in perception. Timaeus is simply noting that, despite its relevance for a complete account of human perception, the mortal soul has not been introduced yet: he is not saying that it needs to be involved in all cases of perception.

Silverman (1990: 152) also invokes the following passage:

T5 (Ti. 69c7-d6)
And within the body they built another kind of soul as well, the mortal kind, which contains within it those dreadful but necessary disturbances: pleasure, first of all, evil’s most powerful lure; then pains, that make us run away from what is good; besides these, boldness also and fear, foolish counselors both; then also the spirit of anger hard to assuage, and expectation easily led astray. These they fused with unreasoning sense perception and all-venturing lust (αἰσθήσει δὲ ἀλόγῳ καὶ ἐπιχειρητῇ παντὸς ἔρωτι,) and so, as was necessary, they constructed the mortal type of soul. (tr. Zeyl, 2000: 63)
Here the mortal parts of the soul are introduced; *alogos aisthēsis* is ascribed to them, which, however, does not rule out that a creature with just the immortal rational part of the soul could also have *aisthēsis*. Moreover, in section 1 I offered reasons to believe that *alogos* as applied to *aisthēsis* need not have negative connotations, and I maintain that this holds for T5 as well. What is characterized in an undeniably disparaging tone above is what is listed *before aisthēsis* and *erōs*, characterized as *alogos* and *epicherēitēs pantos* respectively. There is space to argue that these descriptors are not necessarily negative: the ‘pro-activity’ of *erōs* can be considered a crucial positive driving force if suitably directed (as in the *Symposium* and the *Phaedrus*), even if it can also be destructive. In the same way, we saw that *alogos* can be a non-committal description of perception.

That said, a crucial reason for *denying* that the mortal soul is *necessarily* involved in perception is 43b5-44b1, wherein we find a detailed description of the disruptive impact of perceptions on the two circles of our immortal and rational soul alone, and where the mortal parts of the soul are *not even mentioned*.

This passage further suggest that perception is closely connected to the activity of the Circle of the Different. At 43b5-44b1, we learn that the Circle of the Same of the *human* rational soul is shackled by affections coming from the outside, while the Circle of the Different is twisted but continues to move and thereby allows the soul to perceive, although these perceptions lead to cognitive mistakes. This suggest that the Circle of the Same is, as it were, not equipped to deal with perceptions at all, whereas the Circle of the Different appears to be made in such a way as to deal with them.

I submit that this is also true in the case of the World Soul’s Circle of the Different. Apart from the fact that the activity of the World Soul’s Circle of the Different (see T1(11b)) is connected with *doxai kai pisteis peri to aisthēton*, the Circle of the Different is, of the two circles, the *inner* one: it corresponds to the celestial ecliptic, while the Circle of the Same corresponds to the celestial equator. This might suggest that the Circle of the Different is somehow the most apt to come into contact with the components of the World Body. Moreover, the fact that it is divided into ‘seven unequal circles’ (Ti. 36d2) also gestures at its connection with bodies. Divisibility is clearly linked to bodies when it comes to the composition of the World Soul; although we know that the mixture out of which the two circles is composed is the same,
fact that the Circle of the Different is divided makes it more similar to bodies. Furthermore, the expression orthos iōn\textsuperscript{24} (going straight) referred to the Circle of the Different in Ti(iib) might conceal a Platonic pun. Orthos is clearly meant to indicate that the Circle of the Different is running rightly, correctly (recall that the World Soul’s logos is always true (Ti(iia))). However, note that the human Circle of the Different explicitly deals with sensible things subjected to the six rectilinear (orthos) motions, which, at the very initial stages of embodiment, can bend and twist the Circle of the Different (see 43c7-e4). That is, the pun might suggest that, although the World Soul’s Circle of the Different is also affected by rectilinear motions (as we will see in section 3, those of the polyhedra moving according to the like to like principle), it is still able to go straight, i.e., is not disrupted by them.

2.3 \textit{Pathos/Pathēma and Kinēsis; and the Cause of the Affection}

The Timaeus offers plenty of evidence for the claim that body and soul need to be affected in order for perception to occur. Perception requires pathē/pathēmata\textsuperscript{25} that affect the body and through the body the soul, so that the body must be affected prior to the soul, acting as something through which these affections need to pass before reaching the soul. This is supported by Ti. 64a6-c8 (T6 below), by the text immediately following it (Ti. 64c8-d7), as well as by Ti. 65b4-c3 and 61d4-5. Moreover, perception itself consists in a form of kinēsis of body and soul. This is made particularly clear at Ti.43c4-c7, wherein perceptions are explicitly characterized as motions (kinēseis) caused by affections and transmitted through the body to the soul.

To discuss the cause of these affections, consider the following passage:

T6 (Ti. 64b3-c8)

For what is naturally mobile, when affected by even a slight impulse, spreads it round, one part passing the same affection on to another until it reaches the consciousness and reports the quality of the agent (διαδίδωσιν κύκλῳ μόρια ἑτερα ἑτέροις ταὐτὸν ἀπεργαζόμενα, μέχριτε ἄν

\textsuperscript{24} A textual issue is flagged by the OCT apparatus: iōn/peon. I submit that we should stick to iōn rather than peon: although the latter would correspond to the peon in Ti(iic), it seems to me that the variation has a purpose.

\textsuperscript{25} I believe that pathos and pathēma can be understood interchangeably. I leave open the thorny question of whether or not we should distinguish between the pathos and the initial movement of the body involved in perception, as it is not clear whether the former causes the latter or whether the two should be identified. See further e.g. Ganson (2005).
ἐπὶ τὸ φρόνιμον ἐλθόντα ἐξαγγείλῃ τοῦ ποιῆσαντος τὴν δύναμιν). By contrast, what is difficult to move is too stable to spread or communicate to its neighbours the effect of any affection it suffers, and so, as the parts do not pass it on to each other, the original affection does not affect the creature as a whole, which remains unconscious of it (τὸ πρῶτον πάθος ἐν αὐτοῖς ἀκίνητον εἰς τὸ πᾶν ζῶον γενόμενον ἀναίσθητον παρέσχεν τὸ παθόν). This is what happens with bone and hair and the other parts of our bodies which are composed mostly of earth; the reverse is true of sight and hearing in particular, as they have in them the highest proportion of the qualities of fire and air. (tr. Lee, 2008: 60)

*Tou poiēsantos* here is referring to an *external* object: in *Ti. 61c3-68d8* the *pathēmata* that trigger perceptions are all caused by external objects, of which the soul (*to phronimon*) recognizes the quality (*dunamis*). However, I believe that in certain cases it could be identified with the body itself (or rather parts of the body). *Tou poiēsantos* above surely implies that the body must be acted upon by something, but it is not a requirement that such a thing be something *external* to the perceiving body itself. I maintain that the same ensouled body (or rather parts of it) could be what acts and is acted upon. It should be acknowledged that the evidence concerning Plato’s thinking about self-perception is scarce, and it is not obvious whether a clear view can be found in his works. However, it seems implausible that Plato should have denied the existence of any form of self-perception. Leaving open the possibility that he might acknowledge some form of self-perception will allow me to include the *kosmos* among the perceiving subjects in the *Timaeus*, provided that I can prove that the *kosmos* also meets requirements 3) (an affection leading to a

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26 Most interpreters consider this to be a reference to the immortal rational soul: see Brisson (1999), Carpenter (2010) and more recently Johansen (2022). For a different interpretation see O’Brien (1997) and more recently the balanced assessment of Sassi (2022).

27 This is another debated expression, which most likely refers to the sensory quality of a certain object affecting the body in a certain way.

28 Although the *Philebus* might perhaps offer one in a passage invoking the possibility of perceiving the replenishment of one’s own body is mentioned, where Socrates says: ‘Well, then. Consider someone being deprived for the time. *Could he have any contact with replenishment from either perception* (αἰσθήσει πληρώσεως ἐφάπτοιτ’ ἂν) or memory of something he is neither undergoing at the moment nor has he ever undergone before?’ (*Phl. 35a6-9*, tr. Gosling, 1975: 29)

29 In line with my view, Wolfsdorf (2014: 121, my emphasis) writes: ‘Note that the entity affecting the percipient body may be external or internal to the percipient body. For example, consider forms of *proprioception* arising through torn muscles or headaches. Timaeus does not overlook such conditions, and I see no evidence that Plato restricts aisthēsis to *exteroreception*.’
motion/change in the body and in the soul), and 4) (a cause of this affection). To this end, we need to return to T2.

In T2[b], we learn that the World Body has nothing to breathe, or to eat, or to digest and expel; reference is then made to what one might call a form of ‘self-nutrition’ and ‘self-excretion’. The overall structure of T2 offers further reasons to ascribe self-perception to the universe: having denied that it has eyes and ears, Timaeus clarifies that the World Body also lacks organs for respiration and nutrition. He then adds that it supplies its own nourishment and decay (i.e., those things that do not come from the outside or go outside). The two crucial participles paschon kai drōn (in T2[c], for which see below) occur shortly after. One cannot exclude that the passage has a sort of chiasitic structure according to which, first ‘external’ perception is denied, and then ‘external’ respiration and nutrition are denied. Immediately after this, it is made explicit that the World Body itself deals with its own nourishment (and decay); it might then be the case (though this is not made explicit) that the World Body itself by itself plays a role in a form of ‘self-perception’.30

However, it is T2[c] which constitutes the main piece of evidence for the fact that the World Body plays a crucial role in allowing the kosmos as a whole to have self-perception. I maintain that πάντα ἐν ἑαυτῷ καὶ ύφ’ ἑαυτοῦ πάσχον καὶ δρῶν can be safely assumed to refer to the conditions 3) and 4), necessary for aisthēsis. As we saw, being affected is a necessary condition for a subject to undergo an instance of perception. The presence of the term paschon guarantees that the necessary condition 3) is met in the case of the World Body: it suffers, it is affected, and this must imply some form of change in it, ensuring a kinēsis is involved. The last condition left is 4): there must be something which affects the World Body. The term drōn shows that the World Body is not only affected, but also acts. In the present context we can treat draō and poieō (see T6) as interchangeable, as they are both active and action-involving. The things that act upon the parts of the World Body are the parts of the World Body itself (i.e., as I will claim in section 3, the polyhedra of which it is made). This is made clear by the few words that immediately precede the two participles. In the clause πάντα ἐν ἑαυτῷ καὶ ύφ’ ἑαυτοῦ, where hupo appears clearly to have a causal force, what the World Body suffers and does is in itself and caused by itself. Since there is nothing outside of it, nothing can affect the World Body

30 One could ask: why does the point about self-perception remain only implicit? I think this might be connected to the fact that the World Soul, which plays a central role in perception, has not yet been introduced at this point in the dialogue. With this I do not mean to deny that the World Soul is also crucial for cosmic ‘metabolism’ (Betheg, 2020: 242–6), as we will see in section 3.
that is not itself (or rather its parts). I maintain that this self-referential mechanism of perception constitutes the self-perception of the kosmos.\textsuperscript{31}

That said, can we claim that the World Soul is affected by the motions of its own body? We do not have explicit or direct evidence for this, but there is no evidence that rules it out either; and I believe assuming it makes better sense of its role and of T\textsubscript{1} than assuming the contrary. Does the term ephaptētai in T\textsubscript{1}(Ib) conflict with the idea that the World Soul is affected in order to perceive? I believe not, and I do not think there is any incompatibility between the soul being affected and its grasping the objects of perception. Betegh (2019: 134–5), while remarking that ephaptētai is used in a perceptual context more than once in the dialogue, places emphasis on the fact that the term has an active meaning, and can thus can be translated as ‘reaching’, ‘laying hold of’. Moreover, Johansen (draft), contrasting the case of humans (which have a rational soul like the kosmos) to that of plants, notes that Ti. 77d7-c1 (end of T\textsubscript{3})\textsuperscript{32} suggests that the circular motions of the rational soul, which plants lack, respond actively to perceptual affections and are not just passively affected like the souls of plants. The fact that the World Soul must be affected for perceptions to occur does not rule out that it also has an active role when grasping the objects of perception, which would be conveyed by the active nuance of ephaptētai.

### 3 Self-Perception of the Kosmos as Perceiving the Polyhedra of Its Own Body

I have defended the view that the kosmos has self-perception. However, the label ‘self-perception’ of the universe might be misleading, in that it suggests that the World Body as a whole affects and is affected by the World Body as a whole (something that might be conveyed both by the singular and even more so by the reflective prefix ‘self-’). In fact, I already talked about the World Body’s parts with respect to 4). In line with this, in the present section I will exploit again the aforementioned parallelism with ‘self-nutrition’ and ‘self-excretion’:

\textsuperscript{31} In a draft on the self-sufficiency of the kosmos, Johansen seems to reach conclusions partly close to (although much more cautious than) mine, quoting Proclus (In. Tim. 111.90.8-11) in support of them. (We reached these conclusions independently, as I read his draft after getting started on this paper.) For helpful considerations on the topic see also Johansen (2022: 130–4).

\textsuperscript{32} The end of the passage is widely debated, not least because it presents difficult textual issues. For an interesting assessment see Wilberding (2014).
in the same way as ‘self-nutrition’ and ‘self-excretion’ of the kosmos imply its parts affecting one another, I submit that different parts of the World Body act and other parts are acted upon,33 and that these parts coincide with the polyhedra composing it.

We know that polyhedra count as bodies, in so far as they are explicitly called sōmata many times (see 53c4, e1, e7; 54b4; 55a7, c3...). Are they sensible, i.e., can they count as to aisthēton in T1(11b)?34 At. Ti. 53e4-6, Timaeus says that there are no visible bodies (sōmata orōmena) more beautiful than them, which might still leave open that the four polyhedra themselves might be invisible. However, other pieces of evidence allow us to conclude that polyhedra are visible, although not seen by us, which implies that they count as sensible. They are said not to be seen by us because of their smallness (Ti. 56c1-3). The case of polyhedra would be analogous to bubbles of white phlegm, which are similarly too small to be seen, but visible when they group to form a mass (see Ti. 83d1-4); this implies that today they could be visible with a microscope (see Carone (2005: 237)). The possibility of a microscope was not something Plato could think of, but he could imagine that if we were endowed with a more acute sense of sight (or if we became small enough),35 we could see them. I am not claiming that this is a possibility Plato needs to have thought about, but I believe it lends credence to the idea that they might count as visible and thus as perceptible. Does the kosmos see them? Surely not: as we saw above, its body is explicitly said not to have eyes (see T2[a]). However, I hope to have given enough evidence in section 2 to prove that the kosmos could perceive them.

To understand how exactly is this supposed to work, I will, as mentioned, make appeal to the parallelism between ‘self-nutrition’ (and ‘self-excretion’) and ‘self-perception’. We saw in section 2 that the World Body is composed of fire, earth, water and air (Ti. 32c6-8). In the second part of the dialogue (47e3-69b5), after necessity has been introduced (47e3-48b3), we discover that the Demiurge ‘assigns’ (55d7) to each trace (53b2) of the four elements in the chōra one of the following four polyhedra: the pyramid (tetrahedron) to fire,

33 This might also be supported by the use of panta in the plural in the crucial clause πάντα ἐν ἑαυτῷ καὶ ὑφ’ ἑαυτοῦ in T2[c].

34 Although to aisthēton is in the singular the fact that there is a plurality of doxai kai pisteis about it suggests that ‘what is perceptible’ encompasses many perceptible things, which I believe should indeed be identified with the polyhedra.

35 I owe this suggestion to Michael Peramatzis.
The cube to earth, the octahedron to air and the icosahedron to water. These are arranged by the Demiurge as follows:

\[ T_7 (T \iota. 56c3-c7) \]

And we must assume that when the bodies had been completed with total precision, god fitted together their numbers, movements and other powers (καὶ τὰς ἄλλας δυνάμεις) in due proportion, in whatever way the nature of necessity had been persuaded willingly to yield (ὅπῃπερ ή τῆς ἀνάγκης ἑκοῦσα πεισθείσα τε φύσις ύπείκεν). (tr. Lee, 2008: 50, slightly modified)\(^{36}\)

What constrains the harmonizing activity of the Demiurge? We find the answer at 56e7-c6, which explains that polyhedra within each of the four kinds naturally tend to group together according to the like-to-like principle, the similar grouping with the similar: the fire polyhedra tend to group with the fire polyhedra, the water polyhedra with the water polyhedra, etc. The polyhedra move so that they can (re-)join the elements similar to them. The reason why they do not stop moving once they have reached those is the fact that they become dissimilar to one another, which makes them move to re-join the elements similar to them. What guarantees that they constantly become dissimilar to one another? At 58a2-c4 we learn that the polyhedra are forcibly compressed by the World Soul (ἡ τοῦ παντὸς περίοδος at 58a4-5). That is, the circular motion of World Soul (and in particular of its Circle of the Same\(^{37}\)) counteracts the like-to-like motions (which, I assume, are to be considered rectilinear) of the polyhedra: if it were not for the World Soul’s centripetal force, each of the four kinds of polyhedra would end up in four separated regions.\(^{38}\) If it were not for the World Soul, those proportions between their numbers, motions and other powers (duunameis) established by the Demiurge in T7 would be lost. Betegh

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\(^{37}\) Karfik (2004: 177–180) argued that ἡ τοῦ παντὸς περίοδος must be a reference to the motion of the World Soul, and in particular to the Circle of the Same. This does not mean that the Circle of the Different does not play a role, but that its role is subordinate to that of the Circle of the Same, which moves the whole (to pan) and with it also the Circle of the Different (see Ti. 36c4-d1).

\(^{38}\) As Taylor notes (1928: 392), this would bring the universe to one of the stages of the Empedoclean cycle, i.e., the one in which the four roots are entirely separated from one another.
(2020: 242–6) refers to this process as cosmic ‘metabolism’ and employs it to interpret T2 above.39

The relationship between Word Soul and the polyhedra of its own body can also help us understand the sense in which the kosmos is supposed to perceive its own polyhedra. At 56c3-58c4, polyhedra are described as acting upon one another (cutting one another, moving one another, transforming into one another) and thus affecting and being affected by one another. In Ti. 57a3-5, we find an explicit reference to this, with the use of the term pathein, when Timaeus claims that ‘each kind similar and same to itself cannot effect a change or be affected by something that is the same and similar’ (τὸ γὰρ ὁμοίον καὶ ταύτὸν αὐτῷ γένος ἐκαστονοὖτε τινὰ μεταβολὴν ἐμποιήσαί δυνατόν οὔτε τι παθεῖν ὑπὸ τοῦ κατὰ ταύτα ὁμοίως τε ἔχοντος, Ti. 57a3-5). My claim is that these affections taking place in the World Body are transmitted to the World Soul, which in this sense can be said to perceive them.

How exactly is this supposed to happen? Here things become necessarily more speculative, but we might find some clues in the role that fire plays in the metabolism of the kosmos: fire, as the most mobile (eukinētaton) of the polyhedra (56a3, 8), mainly contributes to cutting the other polyhedra by ramming into them (see in particular 56e8-57a3 and 58b1).40 At the same time, T6 clarifies that fire and air particles are particularly well suited to transmitting affections to the soul, in the case of human bodies.41 More precisely, fire is the element which is most apt for transmitting those affections that eventually become perceptions. My tentative suggestion is that fire might also be the element involved in the occurrence of perceptions in the kosmos, thanks to its role in transmitting the reciprocal affections of the polyhedra to the World Soul.

The next question that arises here is this: in what sense does the World Soul perceive polyhedra? What does it perceive of them? My hypothesis is that it perceives their dunameis, as we perceive the dunamis of the objects of perceptions (see T6). In T7, we found a reference ‘to the proportions among their numbers, their motions and their other powers’ (τὸ τῶν ἀναλογιῶν περὶ τε τὰ πλήθη καὶ τὰς κινήσεις καὶ τὰς ἄλλας δυνάμεις, 56c3-4). What the World Soul perceives would be the dunameis of the polyhedra, which we can in turn surmise are to

39 For this overall interpretation of 56c3-58c4 Betegh (2020: 242–6) explicitly relies on Karfik (2004: 169–180), but, unlike him, does not specify that the reference of ἡ τοῦ παντὸς περίοδος must be chiefly to the Circle of the Same. For a similar interpretation of 56c3-58c4 see also Johansen (2020: 124–6). Both Johansen and Betegh highlight the crucial connection between T2 above and 56c3-58c4. In particular, Betegh discusses the kosmos’ peculiar ‘metabolism’ starting from T2 and then moving to 56c3–58c4.

40 The mechanism is explained well by Betegh (2020: 245) and Karfik (2004: 179–180).

41 See Ti. 64c6-7 (end of T6).
be identified with their position and size. Considering that dunameis in T7 appear also to refer to kinēseis (and plēthē, but I would rule out that the latter are perceptible), perhaps the World Soul could also perceive their motions.

As this point, one could ask: why not identify dunameis with perceptual qualities instead, as presumably dunamis refers to the sensory quality of the objects of perception in T6 (cf. fn. 27)? Could the cosmic perception of polyhedra count as having something like common perceptions of hot and cold etc. (61c3-64a1), a possibility I left open in section 2? At 33a3-6 Timaeus explains that there cannot be hot or cold things or other dunameis outside (exōthen) of the World Body – which eliminates the possibility of corruption. This might suggest that the kosmos cannot be affected by hot and cold at all, or that it can be affected by those things from inside its own body, but not from the outside. This would be analogous to the suggestion I made in connection with perceiving things inside rather than from the outside (T2[a]). So, perhaps 33a3-6 does not imply that the kosmos cannot perceive hot and cold at all, but rather leaves open the possibility of perceiving hot and cold from within. This however, raises some problems. Can we ascribe to polyhedra perceptual qualities – for instance, being hot or cold? It is not clear whether we can ascribe these qualities to single polyhedra, as we perceive these qualities because of complex interactions between the many polyhedra of our bodies and the many polyhedra of external bodies. Perhaps another possible option lies in the idea that single polyhedra might have intrinsic perceptual qualities ‘inherited’ from their pre-cosmic state as traces, e.g. individual particles of fire being intrinsically hot and individual particles of water being intrinsically wet (for which see 51b4-5). Given these problems, I am more inclined to interpret the dunameis the World Soul perceives as referring to position, size and motions of polyhedra. This is also because, as I claim in more detail elsewhere, characterizing

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42 One could ask: if the qualities of the polyhedra the World Soul perceives amount to their geometrical properties, does it make sense to say that it perceives them? Wouldn’t this rather sound as a ‘category mistake’, geometrical properties being something one can arguably only think about and not perceive? I believe this question arises from a tension, intrinsic to the Timaeus, between characterizing the four elements as geometrical polyhedra and considering them to be something perceptible (see Silverman 2002: 282). This relates to a major problem pertaining to the metaphysical status of what is bodily in the Timaeus (see 49d4–50b5), which I cannot investigate here. For two opposed views see Cherniss (1954) and Zeyl (1975), for a helpful chart of the debate see Miller (2003: 84–87).

43 The corpus leaves open whether Plato, as Aristotle clearly does in DA II.6 and III.1, considers motions perceptible or not.

44 On this see Betegh (2020: 243).

45 Luca Dondoni’s MPhil thesis (2022) makes a suggestion along these lines (for similar views see Cornford (1997 (1937): 180–188, 197–204); Kahn (2013: 196–216); contra see, e.g.,
perceptions in this way makes better sense of why the kosmos needs to have them: they more clearly contribute to the intelligent maintenance of its order, to which I go back in the conclusion below.

4 Conclusion

In this paper, I showed that the World soul perceives, and that it perceives the polyhedra composing the World Body. I would like to conclude by asking what is the relationship between the Circle of the Same and the Circle of the Different according to my picture. In section 3, I suggested that the former is primarily responsible for maintaining the order between polyhedra by compressing them, while in section 2 I claimed that the latter appears to be chiefly involved in the perceptual activity of the World Soul. Note that in T1(11b), the Circle of the Different communicates with its whole soul. I suggest that the Circle of the Different allows the Circle of the Same to rule over the World Body composed of polyhedra by transmitting to the whole World Soul (and thus, a fortiori, to its Circle of the Same as well) information about polyhedra, allowing it to rule over them and order them, and to prevent them from ‘taking over’, i.e. disrupting the harmony established by the Demiurge. How does the World Soul and in particular its Circle of the Same achieve this? By maintaining the correct proportional relationships between them through its nous. The World Soul needs to have nous (which, as we read in T1 (11c), is connected to the Circle of the Same) in order to maintain the order of its body as established by the Demiurge. In turn, to do that, in needs to perceive the polyhedra composing its own body.\(^{46}\)

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