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MATHEMATIZATION, MOVEMENT, AND EXTENSION OF THE WORLD-SOUL IN PLATO'S *TIMAEUS*

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Abstract: The main aim of this study is to explain passage 35b4-37a2 of Plato's *Timaeus* which deals with three main topics: the mathematization of the world-soul, its movement, and its binding to the world's body. First, it is argued that the mathematical structure of the world-soul allows it to participate in and be sensitive to harmony, which is essential for the correct workings of its cognitive capacities. Second, the division of the world-soul to the circle of the Same and the circles of the Other and its self-motion comes in. This allows it to “touch” and cognize the forms and the material things, as well as rule the movement of the corporeal world and care for it. In this aspect, the world-soul continues the process that started with the original creative act of the demiurge. Third, it is argued that the description of the world-soul's binding to the world-body entails its conception as a spatially extended entity, which, in turn, explains of the possibility of an interaction between the corporeal world and its soul.

Keywords: Plato; the *Timaeus*; soul; world-soul; the demiurge; movement

Introduction

The aim of this study is to interpret passage 35b4-37a2 from Plato's *Timaeus*,² which continues *Timaeus*' description of the construction of the world-soul by the divine creator, the demiurge.³ We are in a situation where the basic “soul mixture”, whose ingredients are the intermediate being, the intermediate sameness and the intermediate otherness, has already been created, and the demiurge now begins to work with this mixture in a certain way. Demiurge's operations described in this passage can be summarized in three basic points. The soul is given (1) a mathematical structure, (2) movement, and finally (3) is attached to the body of the world. The structure of the present study follows these three points. With regard to the first point, it should be said that it is not our aim to analyze in detail the various mathematical operations that the demiurge performs on the soul mixture, since we believe that this has already been sufficiently covered in the secondary literature.⁴ Instead, we will try to briefly highlight the philosophical significance that the bestowal of such a mathematical structure on the soul has.

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² Unless otherwise stated, we always refer to the relevant passages of Plato's *Timaeus*.

³ This study is the second part of a larger intended project of three studies aiming to interpret the problem of the constitution and function of the world-soul in Plato's *Timaeus*. For the first part see Stránský (2022).

⁴ See Taylor (1928, 136-147), Cornford (1997, 66-72), Brisson (1998, 314-332).

The second point is in our opinion the most philosophically important, because the particular kind of movement of the soul not only fundamentally determines its rationality (or, more generally, enables the proper functioning of its cognitive powers), but at the same time enables the soul to act on the physical world. The soul has two basic functions, the motive and the cognitive,⁵ and it is particularly its motion with which these two are intimately connected and without which their functioning would be inconceivable. For this reason, the longest part of this study is devoted to the problem of movement. In order to better understand the relationship between the movement of the soul and the movement of the physical world, a digression is also made to the passage 57d7-58c4. Finally, then, in the last section, the question of spatial extension of the soul is considered in connection with the third point mentioned. The Platonic soul is very often conceived as a purely immaterial entity without any attributes of corporeality (e.g., extension). In contrast, we will try to show that Timaeus' account of the soul's attachment to the world-body strongly suggests that some form of spatial extension will have to be attributed to the soul.

1. Mathematization of the Soul

Having created the basic "soul mixture", the demiurge begins to mathematize and divide it through harmonic intervals, thoroughly described by Timaeus. Let us ask, then, what is the significance of the fact that through this activity of the demiurge the soul acquires a "mathematically determined form."⁶ For one possible answer, we need to move to the passage 36e6-37a1, where we learn that the soul was created as participating in harmony (ἀρμονίας μετέχουσα).⁷ But for what reason is this participation in harmony important?

Francis Cornford, in answering this question, refers to the principle "like knows like", so since the soul itself participates in harmony, it can perceive and be sensitive to harmony.⁸ The importance of this ability and of harmony as such, however, becomes fully apparent only in the case of the souls of mortal beings, which, unlike the soul of the world, are unable to remain in their original state because of various "disturbances" which occur due to their incarnation in mortal bodies. In this situation, then, harmony is one of the most important "cures" for souls, as Timaeus explicitly states: "[harmony] is a gift of the Muses [...] to serve as an ally in the fight to bring order to any orbit in our souls that has become unharmonized and make it concordant with itself." (ἐπὶ τὴν γεγонуῖαν ἐν ἡμῖν ἀνάρμοστον ψυχῆς περίοδον εἰς κατακόσμησιν καὶ συμφωνίαν ἑαυτῇ σύμμαχος ὑπὸ Μουσῶν δέδοται - 47d5-7).⁹

Another answer may be formulated on the basis of passage 37a2 ff., where Timaeus mentions the mathematization of the soul, i.e., its division and reunion according to a certain ratio (ἀνὰ λόγον μερισθεῖσα καὶ συνδεθεῖσα - 37a4), as one of the conditions of the soul being able to cognize. It seems then that the sensibility to harmony does not exhaust the meaning of this passage, but that one can formulate a hypothesis that the mathematical structure of the soul is one of the key conditions of its cognitive ability.

⁵ Brisson (1998, 333).

⁶ Karfik (2007, 109).

⁷ As Alfred Taylor says, the soul "has music in itself", harmony becomes part of its own structure - Taylor (1928, 136).

⁸ Cornford (1997, 66). Cf. also Aristotle's commentary on this passage in *De Anima*: συνεστηκυῖαν [ἢ ψυχῆ] γὰρ ἐκ τῶν στοιχείων καὶ μεμερισμένην κατὰ τοὺς ἀρμονικοὺς ἀριθμοὺς, ὅπως αἰσθησὶν τε σύμφυτον ἀρμονίας ἔχη [...] (*De an.* 406b28-30, which Shiffman translates as follows: "Once the soul had been constituted from the elements and divided up according to harmonic numbers, so that it might have an innate perception of harmony [...]").

⁹ Unless otherwise stated, we use the English translation by Donald Zeyl – see Plato (1997).

After the demiurge has used up the whole of the original mixture, he continues his work. Now he cuts the mixture in two parts, which he then crosses in the shape of the letter *chi* (X) (36b6-8). In the next step, he joins together the two ends of each part, so that the soul becomes, as it seems, a structure of two circles.¹⁰ The outer one is the movement of the Same, while the inner one is the movement of the Other (τὴν μὲν οὖν ἔξω φερὰν ἐπεφήμισεν εἶναι τῆς ταύτου φύσεως, τὴν δ' ἐντὸς τῆς θατέρου - 36c4-5). The revolution of the Same is left undivided, but the revolution of the Other is further divided six times (36d1-3).

The self-movement of the soul and the demiurge as its creator

So, as we have seen, the demiurge endows the soul with a circular movement. Timaeus does not explicitly say that it should be understood as a self-movement, but if we look at some more or less clear allusions contained in other passages of our dialogue,¹¹ or if we take into account what Plato says about the soul in other dialogues,¹² we can safely say that even here

¹⁰ The text does not clearly answer the question whether the soul acquires the structure of rings or spheres (this problem is already addressed by Proclus - see *In Tim.* II. 249.31-250.19). The first possibility is held by Alfred Taylor, who argues that the notion of spheres was introduced into astronomy only by Eudoxus, and should therefore not be applied in interpreting Plato (Taylor 1928, 151-152); Dicks, on the other hand, points out that Plato was most likely familiar with Eudoxus' work - Dicks (1985, 113, 150). The account of the construction of the world-soul just given speaks quite strongly in favour of Taylor's interpretation, but if other facts are taken into account, this reading becomes quite problematic. In particular, it is the fact that the soul is, according to Timaeus, *everywhere* (πάντη - 36e2) intertwined with corporeality. In other words, there is no place in the world that is not permeated by the world-soul. This idea, however, is hardly compatible with the hypothesis of a "ring-soul" (which, moreover, Taylor himself openly admits - see Taylor 1928, 175), since the system of one ring of the revolution of the Same and seven rings of the revolution of the Other cannot permeate and envelop the *spherical* body of the world. Seen from an astronomical point of view, the idea of rings seems adequate only in the case of the revolution of the Other (seven planets can be placed on the seven rings, each of which performs its orbit in accordance with the revolution of its ring - see 38c3-e1), but in the case of the revolution of the Same, on which fixed stars are placed (see 40a2-b6), it seems obvious that we cannot do without the idea of a sphere. However, Timaeus describes the construction of the two world-soul revolutions in an identical way, so it seems strange to understand one of them as a sphere and the other as a ring. Some scholars have therefore spoken of the entire world-soul as a "system of concentric spheres" despite the absence of clear textual evidence (see, for example, Karfik 2004, 206 and Karfik 2007, 109). For the reasons given, we consider the latter view to be more plausible, but for the purposes of this study it is not necessary for us to explicitly endorse one or the other option. The key point for us is that the demiurge grants the soul a *circular motion*, any disruption of which has fatal consequences for it. See main text for a further discussion of this topic.

¹¹ See especially passage 37b5, where the phrase ἐν τῷ κινουμένῳ ὑφ' αὐτοῦ refers most likely to the soul (cf. e.g. Proclus, *In Tim.*, 2.308.30-31, Cherniss 1944, 428, note 363, Taylor 1928, 178, Tarán 2001, 310, note 33, Brisson 1998, 335, 349, Karfik 2004, 181 and note 46). Rarer is the view of Francis Cornford, according to whom this connection refers to the *cosmic* animal, which is the union of the world-soul and the world-body (Cornford 1997, 95, note 33). However, even this reading leads to the attribution of self-movement to the soul (see Brisson 1998, 335). Another important passage is 46c-e, where a distinction is made between primary and secondary causes: the former have a rational nature (ἔμφορος φύσεως - 46d8), while the latter are "moved by others and [...] set still others in motion by necessity" (ὑπ' ἄλλων μὲν κινουμένων, ἕτερα δὲ κατὰ ἀνάγκης κινούντων γίνονται - 46e1-2). From this distinction it may follow that the soul, belonging to the primary causes, moves other beings rationally and not according to necessity and also that it moves itself and is not moved by others. Cf. Filip Karfik's commentary on this passage: "Diese Gegenüberstellung der sekundären Ursachen als Elementarkörper, die von anderen Dingen bewegt werden und aus Notwendigkeit andere Dinge bewegen, und der primären Ursachen als vernunftbegabten Seelen setzt die Bestimmung der Seele als selbstbewegtes Wesen voraus und gibt nur unter dieser Voraussetzung einen Sinn." - Karfik (2004, 181). Luc Brisson, moreover, claims that the distinction between primary and secondary causes is "a constant of Platonic thought" (une constante de la pensée platonicienne - Brisson 1998, 339), and he demonstrates, how the conception of the soul as a primary cause implies its understanding as a self-moving entity - Brisson (1998, 338-339).

¹² We mean the following passages: *Phaedr.* 245c6-246a2, where a similar distinction is made and where terms like τὸ αὐτὸ κινεῖν (*Phaedr.* 245c5-6), τὸ αὐτὸ αὐτὸ κινεῖν (*Phaedr.* 245d7), τοῦ ὑφ' ἑαυτοῦ κινουμένου

the soul should be understood as a self-moving entity. However, some scholars believe that the notion of given self-movement contains a contradiction.¹³ Filip Karfik, on the other side, convincingly shows that a crucial distinction must be kept in mind between the self-moving soul, which is part of the world, and the demiurge, the creator of the soul, who dwells outside the *cosmic* framework.¹⁴ On this basis, then, we can claim that on the one hand the doctrine of the *Phaedrus* that no thing within the temporal framework of the world can be the primary cause of motion except that which moves itself (i.e. soul) is valid, but on the other hand this does not exclude the thesis that the demiurge, as a cause transcendent to the *cosmic* and temporal framework, was the creator of the soul and its self-movement at the beginning of time.

But let us go back to the text of our dialogue. After the soul is formed, the demiurge grants it circular motion - the revolution of the Same spins to the right, the revolution of the Other to the left (36c5-7).¹⁵ He further grants dominance (κράτος) to the revolution of the Same by leaving it undivided, while he divides the revolution of the Other six times (36c7-d2). He makes the revolutions of the Other move in opposite directions, three of them revolving at the same speed, four at speeds different from each other, and the other three (36d4-7). Thus, in the end, the soul consists not of two revolutions but of eight, one being external, dominant, and possessing the nature of the Same, and the remaining seven being internal and possessing the nature of the Other.

What is the point of this division? In the first place, the astronomical and cosmological significance must be mentioned, since the particular revolutions of the world-soul become the vehicles of the heavenly bodies. The demiurge places one planet on each of the seven revolutions of the Other (38c3-e1) and all fixed stars on the revolution of the Same (40a2-b6).¹⁶ We believe, however, that this does not exhaust the significance of the division of the world-soul into particular revolutions¹⁷ and that it is important to answer this question also in

(*Phaedr.* 245e3), or τὸ αὐτὸ ἑαυτὸ κινῶν (*Phaedr.* 245e7-246a1) occur. See also *Nom.* 895e-896a, where the soul is defined as τὸ ἑαυτὸ κινεῖν (*Nom.* 896a3). Cf. Luc Brisson's interpretation, which demonstrates that the idea of a self-moving soul is already present in the *Charmides* and is furthermore implicit in the *Phaedo* and explicit in the aforementioned passages from the *Phaedrus* and the *Laws* - Brisson (1998, 333-334). Thus, even in the absence of an explicit textual evidence, Brisson claims that the world-soul is by definition self-moving: "L'âme du monde est, par définition, automotrice." - Brisson (1998, 333).

¹³ See, for example, Tarán (2001, 309-314) or Cherniss (1944, 428-431). Cherniss even speculates that Plato deliberately concealed the doctrine of the soul as self-movement in the *Timaeus* but provided the reader with some clues to realize that he, in fact, still holds this doctrine. This strategy was then, according to Cherniss, intended to make the reader aware of the mythical nature of the whole narrative and the necessity of its non-literal interpretation.

¹⁴ Karfik (2004, 184-185, note 56).

¹⁵ It is hard to say, what the significance of the directions of the revolutions is. Filip Karfik says that it is one of their "wondrous" characteristics ("wunderbaren" Eigenschaften) - Karfik (2004, 175, note 32). The only sensible solution seems to be to point out that the right direction is traditionally superior to the left direction, just as the revolution of the Same has dominance (κράτος) over the revolution of the Other (36c7-d1) - cf. Proclus, *In Tim.* ii. 258.20 ff., Cornford (1997, 74), Dicks (1985, 121).

¹⁶ It is questionable, however, to what extent can Plato's concept of the world-soul sufficiently explain the actual movements of the heavenly bodies (especially the retrograde movements of the planets, of which Plato was probably aware - see Cornford (1997, 110). Since Plato's *Timaeus* is not primarily an astronomical treatise and the passages devoted to astronomy are rather brief (see Cornford 1997, 109), Dicks sees Plato's contribution to the field in making the astronomers go beyond the mere accumulation of empirical data to the interpretation of them with the help of mathematical models, and he points to the rapid progress in the field immediately after Plato, beginning with Eudoxus' model of concentric spheres - Dicks (1985, 107-108).

¹⁷ It appears that also the souls of mortal beings, the astronomical context being here out of question, are divided in the same way as the soul of the world. See especially passages 43d1 ff., where the revolution of the Same and the revolution of the Other (ταύτου/θατέρου περιόδου) are explicitly mentioned in the context of the human

connection with the cognitive activity of the soul.¹⁸ In other words, it is precisely this structure that enables the soul to "touch" (ἐφάπτηται - 37a6) other entities and cognize them.¹⁹ If we accept the thesis of Filip Karfik that the emergence of different kinds of knowledge is related to the way in which the soul, through its circular movement, approaches the nature of the different entities it cognizes,²⁰ we can advance a hypothesis that the division of the soul into the revolution of the Same and the revolution of the Other is intended, among other things, to enable the soul to assimilate as much as possible to the various movements of corporeality as well as to the immutability of that which exists eternally.

The movements of the physical world are manifold (see 43b2-4), and the soul can assimilate to them and be sensitive to them only if there is a similar variety of movements inherent in it. Although the soul of the world never ceases its circular movement, nor is its perfect rotation disturbed, it can still be said that through the movement of the divided revolution of the Other, it assimilates itself to the movements of the corporeal world. There is by no means an identity between the movement of corporeality and the movement of the divided revolution of the Other, but rather a certain similarity. As a result, a mutual influence between the soul and the corporeality can take place, and therefore the soul can act upon bodily motion and be sensitive to it as well, i.e., have opinions and beliefs (δόξαι καὶ πιστεῖς) about corporeal entities.

As for the revolution of the Same, the situation is largely similar. Of course, no motion belongs to that which exists eternally,²¹ but even so, the undivided and uniform revolution of the Same may be regarded as the greatest possible approximation to the nature of the

soul, 44d3, where the human soul is said to have a pair of divine paths (τὰς θείας περιόδους δύο οὐσας), and 47b8-c1, where we learn that the revolutions of thought within us (τὰς περιφορὰς τῆς παρ' ἡμῖν διανοήσεως) are related to the revolutions of the world-soul. We may, therefore, say that the souls of mortal beings (or, more precisely, their immortal rational parts) also consist of the revolution of the Same and the revolution of the Other. However, Timaeus does not clearly tell us whether or not the revolution of the Other is also further divided six times. We believe, nevertheless, that there is no indication that the structure of the rational soul of mortal beings should be different in any essential respect from the structure of the soul of the world. Particularly telling is the context of the third passage cited, which concerns the means of correcting the broken revolutions of the human soul. Men are to follow the revolutions of reason in heaven (τὰς ἐν οὐρανῷ τοῦ νοῦ περιόδους) and to imitate these within their own souls. Such a "recipe" for correcting the broken circuits of the soul, however, makes good sense only if the structure of both kinds of soul is identical.

¹⁸ Cf. Corcilius (2018, 59): "Clearly, Plato arranges the world-soul's parts in the way he does in order to be able to account for, among other things, the celestial phenomena. [...] But apart from its astronomical and astrophysical aspects, there also seems a cognitive purpose involved."

¹⁹ This "touching" is to be understood as an epistemic metaphor that is not translatable into a literal description (cf. Reydam-Schils 1997, 263, note 6, contra Brisson 1998, 342). For a possible answer to the question of what exactly this "touching" might consist in, see the discussion in the main text below. Further, it is also not entirely clear whether we should interpret this "touching" itself as a cognitive act or only as a *condition* (albeit a necessary one) of all cognition, which is not yet itself a cognitive act. The text of the dialogue, in our opinion, suggests the latter option. For it seems that *all* cognition of the world-soul consists in proclaiming the sameness and otherness of the cognized entities and various relations which these entities have between each other, and therefore has an essentially speech-like character (see the term λόγος in 37b3). Timaeus enumerates four cognitive acts of the world-soul, namely νοῦς, ἐπιστήμη, δόξα and πίστις (37b8 and c2), all of them arising from its inner speech mentioned above. Nevertheless, the "touching" precedes the speech (see 37a5-6: ὅταν [...] ἐφάπτηται [...], λέγει). For a more detailed discussion, see esp. Corcilius (2018, 65, 84-94). But it seems clear that, in the case of world-soul, this "touching" has an "essentially active" character (Corcilius 2018, 96). In this respect its cognition differs markedly from that of the souls of mortal beings, which, being incarnated in a mortal body, are confronted with a great torrent of sensations that "assault" them (see 43b5 nn.). Thus, they are (at least initially) passive.

²⁰ See Karfik (2004, 197-198) and cf. Karfik (2007, 109-111).

²¹ We mean none of the so-called "local" movements. To the extent that we take the demiurge as a part of the eternal realm we can, however, argue that the movements of thinking and acting upon corporeal world belong to it.

unchangeable. See esp. passages 34a1-3, where Timaeus maintains that the rotational uniform motion at the same place around its own axis (κατὰ ταῦτα ἐν τῷ αὐτῷ καὶ ἐν ἑαυτῷ) most properly belongs to νοῦς and φρόνησις, and 40a7-b4, according to which the divine beings, the fixed stars, being as perfect as possible, are involved in only two movements, a uniform one at the same place (ἐν ταῦτῳ κατὰ ταῦτά) and a forward one under the rule of the revolution of the Same (εἰς τὸ πρόσθεν, ὑπὸ τῆς ταυτοῦ καὶ ὁμοίου περιφορᾶς κρατουμένῳ). Since then uniform rotation in the same place is the most perfect of local movements and most belonging to the νοῦς, and since the νοῦς means an intellectual grasp of unchangeable entities, we may conclude that this kind of movement comes closest to the nature of that which exists eternally.²² Thus, just as through the revolution of the Other, the soul approximates the nature of the corporeal, through the revolution of the Same it most closely approximates the nature of the unchangeable entities, again without fully identifying itself with it (i.e., without ceasing its motion).²³ This results in a soul having the νοῦς (and probably also the φρόνησις or ἐπιστήμη).²⁴

Digression: The soul and the movement of the corporeal world (57d7-58c4)

Given that the soul can act upon the corporeal world, we can further ask how precisely this works. To answer this question, we must, however, make a digression to the passage 57d7-58c4 and see what Timaeus has to say about motion and rest generally. This passage belongs to the context of the second narrative about the creation of the world, which emphasizes the role of necessity (see 47e4-5 - τὰ δι' ἀνάγκης γιγνόμενα). It is natural, then, that Timaeus focuses on the bodily processes going on in the world and that his exposition operates at the level of the movement of basic elements. However, the reader should still bear in mind the perspective of the first narrative that emphasizes the role of reason (see 47e4 - τὰ διὰ νοῦ δεδημιουργημένα). Since the origin of the world consisted of a mixture of necessity and reason (47e5-48a2), it is necessary to make a synthesis and to understand what is said in the second narrative against the background of what we already know from the first narrative. In the following exposition, we will try to follow this principle.

Together with Luc Brisson, we can deduce three basic premises of the very existence of motion.²⁵ First, motion does not exist unless there is something that will move (τὸ κινῆσον) and something else that will be moved (τὸ κινησόμενον) (57e3-6). Second, motion does not exist in absolute uniformity (ἐν ὁμαλότητι), and so its necessary condition is diversity (ἀνωμαλότης) which is, in turn, caused by inequality (ἀνισότης) (57e6-58a1). Third, motion does not exist if there is a void (58a7-b2).

²² Cf: "[...] ist die einfache Bewegung des Umlaufes des Selben gleichsam die höchste Annäherung an das intelligible Sein: die Bewegung κατὰ ταῦτα ἐν ἑαυτῷ kommt dem ἀεὶ κατὰ ταῦτα ἔχον ἀκινήτως am nächsten." - Karfik (2004, 198).

²³ From this ability of the soul arises its essential role as a mediator between the two worlds who orders the corporeal one and cares for it in a rational way, i.e., with constant regard to the intelligible world. In this respect, the soul's activity resembles and continues the demiurge's original creative act.

²⁴ The terms νοῦς, φρόνησις, and ἐπιστήμη can, in our opinion, be understood at least somewhat synonymously in this context. We do not, of course, mean to suggest that they are *entirely synonymous*, and that a careful analysis of the relevant passages from the *Timaeus* and other dialogues would not reveal certain nuances by which they differ. At the same time, however, we believe that all three are very closely related and that it is not necessary to look for these nuances here (cf. Taylor 1928, 182). What, on the contrary, should be emphasized is that all three terms are related to the cognition of the eternally existing entities and as such can and should be contrasted with the terms δόξα and πίστις, which, on the other hand, are related to the cognition of the corporeal entities.

²⁵ See Brisson (1998, 396-398).

The first premise makes a distinction between the agent that causes the movement and the recipient of this action, which is moved by the agent. Brisson interprets this distinction as a distinction between soul and corporeality, since corporeality, he says, cannot itself be the cause of its own motion.²⁶ According to Timaeus, however, corporeality in its *precosmic* state (i.e., in a state in which the soul does not exist) exhibits some kind of inherent instability,²⁷ which most likely exists in it and is not caused by any external agent. Is it possible to reconcile this fact with the passage just discussed and with the view according to which the soul is the sole cause of the motion of corporeality? For a possible answer we have to stress that time is also absent in the *precosmic* state and so this instability cannot be understood as a motion in the same sense in which we speak about motion in the created world. During the transformation of the universe from the *precosmic* to the *cosmic* state, then, several very closely interrelated events occur simultaneously: 1) the mathematization of the *precosmic* traces of the elements takes place, so they become elements as we know them (i.e., fire, water, earth, and air); 2) time is created, so the *precosmic* instability can be transformed into *cosmic* motion; 3) a rational self-moving soul is created, which governs the corporeal world in the best possible way (i.e., in the most rational way).²⁸

We can see, then, that Timaeus' conception of movement is rather complicated and Brisson's identification of that which moves with the soul and that which is moved with corporeality is perhaps too rigid. Brisson is undoubtedly correct that movement within the created world always takes place under the governance of the world-soul, and in this sense the world-soul can be said to be its originator, for there is no bodily movement that is completely autonomous and independent of the world-soul. Hence the first premise that there is no motion unless there is something that moves and something that is moved remains true. However, viewed from a different perspective, it seems that *precosmic* instability itself also possesses at least certain *tendencies* (see 53a1-8),²⁹ which most likely persist even after the transformation of the *precosmic* state into the *cosmic* one. We can, therefore, advance the hypothesis that the world-soul is not an exclusive cause of all movements of the corporeal world, but that it rationally governs those movements which are *cosmic* manifestations of those *precosmic* tendencies that arise from corporeality itself.

Let us now proceed to the second premise, from which we may deduce why that which exists eternally and is homogeneous in nature does not move. On the other hand, this premise does not exclude the hypothetical possibility of the corporeal world coming to a state of complete rest. As a result of the "like-to-like" principle,³⁰ four fundamental elemental masses could be formed, and thus some kind of homogeneity could arise in the world.³¹ Furthermore, this is confirmed by Timaeus himself: "We have not explained, however, how it is that the various

²⁶ Brisson (1998, 396).

²⁷ For lack of more adequate terms, Timaeus also refers to this difficult-to-grasp *precosmic* instability as motion (see 52e4-5, 53a3).

²⁸ It is evident that our interpretation here implicitly accepts the basic assumption of the so-called "literal interpretation" of the Timaeian *cosmogony*, i.e., that the creation of the world is a singular event. For a more detailed exposition, see Stránský (2018).

²⁹ By this we mean, above all, the movement of the like towards like and away from unlike, of which Timaeus speaks in this passage (i.e., in the context of *precosmic* state), and which therefore most likely arises from corporeality itself. Francis Cornford rightly speaks here of the influence of atomism, where it is a spontaneous driving force inherent in nature itself and the only principle influencing the otherwise random motion of atoms - Cornford (1997, 168-169).

³⁰ See previous note.

³¹ Cf. Empedocle's theory of cosmic cycle where we can come across this idea. See Hladký (2017, 4): "When Strife gains full dominance, the world disintegrates into the original elements which become fully separated."

corpuscles have not reached the point of being thoroughly separated from each other kind by kind, so that their transformations into each other and their movement [to their own regions] would have come to a halt.” (πῶς δὲ ποτε οὐ κατὰ γένη διαχωρισθέντα ἕκαστα πέπαιται τῆς δι’ ἀλλήλων κινήσεως καὶ φορᾶς, οὐκ εἶπομεν - 58a2-4). Timaeus explains it (and also the non-existence of the void, which was the third premise), in the following sentence which can be construed in different ways.

Timaeus tells us the following: ἡ τοῦ παντὸς περιόδου, ἐπειδὴ συμπεριέλαβεν τὰ γένη, κυκλοτερῆς οὔσα καὶ πρὸς αὐτὴν πεφυκυῖα βούλεσθαι συνιέναι, σφίγγει πάντα καὶ κενὴν χώραν οὐδεμίαν ἔᾶ λείπεσθαι (58a4-7).³² The ambiguity concerns primarily the meaning of the verb σφίγγει and also the phrase ἡ τοῦ παντὸς περιόδου. The verb σφίγγω can mean (to give only the meanings relevant to our passage) either (1) "to bind tight" or "to press together," or (2) "to hold together." The substantive περίοδος can then refer either 1) to the circular motion or 2) to the circumference of a circle.³³ Thus, the subject of the sentence is either the circumference of the (corporeal) universe or its circular motion, and it is said to either hold together or compress all the [four] kinds of elements, thus not allowing any empty space to be left. The first possibility is held by Archer-Hind, who speaks of “a mighty inward pressure [that] squeezes all matter together with so overpowering force, that no vacancy is allowed to remain anywhere”.³⁴ However, this interpretation has been criticized by other scholars.³⁵ The second option is held, for example, by Alfred Taylor, the meaning of the passage being the following: the circumference of the universe encloses it, makes it finite, thus leaving no empty space and preventing the elements from moving infinitely apart.³⁶

Among contemporary scholars, this passage is discussed in detail by Filip Karfik,³⁷ who provides an interpretation that, somewhat surprisingly, is more like Archer-Hind’s reading. Convincing support for rendering περίοδος as circular movement is provided, according to Karfik, in the passage 34a6, where this meaning cannot be doubted.³⁸ If, however, the phrase ἡ τοῦ παντὸς περιόδου refers to the rotation of the universe, Taylor’s and Cornford’s interpretation cannot hold. For it would be strange to say of the circular motion of the universe that it *merely* holds everything together (though, of course, it does so as well). Such an interpretation, in our opinion, goes well together with the idea of a circumference that encloses the corporeal world and prevents the elements from moving infinitely away from each other. We, therefore, propose to understand the term περίοδος here as referring to the circular motion of the universe and we also claim that it is very likely that this motion derives from the circular motion of the soul of the world. That is why we also propose to understand it

³² Zeyl’s translation runs as follows: "Once the circumference of the universe has comprehended the [four] kinds, then, because it is round and has a natural tendency to gather in upon itself, it constricts them all and allows no empty space to be left over."

³³ See the relevant entries in Liddell, Scott, Jones (1996).

³⁴ Archer-Hind (1888, 209).

³⁵ See, for example, Taylor (1928, 397) or Cornford (1997, 242-246).

³⁶ Taylor (1928, 398). Cf. Cornford (1997, 242-246).

³⁷ See Karfik (2004, 179-180).

³⁸ The term περίοδος occurs, of course, in many other places in the dialogue (cf. 38c8, 39b5, 39c2, 39c5, 42c5, 43a5, 43d2, 44a4, 44b2, 44d3, 47a5, 47b7, 47d3, 58a5, 76a7, 83a2, 85a6, 86a7, 90d2, and 91e5), and in some of them it does indeed carry the meaning propounded by Taylor and Cornford. However, the passage referred to by Karfik is crucial since its context is the same as the context of passages just discussed. It concerns the origin of the world-body and its motion and it runs as follows: “In fact, he awarded it the movement suited to its body—that one of the seven motions which is especially associated with understanding and intelligence. And so he set it turning continuously in the same place, spinning around upon itself. All the other six motions he took away, and made its movement free of their wanderings. And since it didn’t need feet to follow this circular path (ἐπὶ δὲ τὴν περίοδον ταύτην), he begat it without legs or feet.” (34a1-7).

as a kind of intermediary between the motion of the soul and the motion of the individual particles within the world.

Since the world-soul, due to its specific nature, occupies a position in-between the intelligible and the corporeal worlds, it can and does function as a mediator between them.³⁹ This means, in other words, that the world-soul cognizes both that which exists eternally and the corporeal and, on this basis, organizes the corporeal, i.e., continues the original creative act of the demiurge. All of this can be summarized as follows: The world-soul cares for the corporeal world with regard to that which exists eternally. We believe that in the passage just discussed Timaeus explains the concrete *mechanism* of this care. Consistent with this interpretation, we propose to also understand the verb σφίγγει. We need not immediately use Archer-Hind's pathos and speak of "overpowering force", "squeezing of all matter", or "mighty inward pressure", but to speak of the revolution of the world as exercising some pressing inward force is probably appropriate. The world-soul thus transmits its motion to the corporeal world, causing it to rotate as well, and consequently the motion is transmitted at the level of elemental bodies to the whole world.⁴⁰ As a result (see δίο at 58a7), there is a never-ceasing movement in the world, with the movements arising from corporeality itself being also ultimately subject to the governance of the world-soul. We thus claim that what may appear at first sight as an unreasonable movement of corporeality itself is in fact subject to the governance of the world-soul, which cares for the corporeal world.

An extended soul?

After this digression, let us continue in the exposition of our passage where the demiurge attaches the world-soul to the world-body and which, in our opinion, suggests that the soul is a *spatially extended* entity.⁴¹ Some scholars, however, have tried to mitigate this fact and its implications. Thomas Robinson, for example, writes that the figurative character of passage 35b-36b is obvious, since we know that the world-soul, being distinct from the world-body, is immaterial.⁴² However, this thesis cannot be accepted. The soul participates in the intermediate Being and this fact entails a consequence which may perhaps at first sight appear surprising: the soul, according to Timaeus, is not wholly incorporeal.⁴³ The characteristic of incorporeality, strictly speaking, belongs only to that which exists eternally, while the body of the world, on the other hand, is purely material. The soul belongs to neither of these "worlds", sharing some characteristics of both.

We further read that the demiurge, after creating the soul "went on to fashion inside it all that is corporeal, and, joining center to center, he fitted the two together" (μετὰ τοῦτο πᾶν τὸ σωματοειδὲς ἐντὸς αὐτῆς ἐτεκταίνετο καὶ μέσον μέση συναγαγὼν προσήρμοσεν - 36d9-e1). Then, "[t]he soul was woven together with the body from the center on out in every direction to the outermost limit of the universe, and covered it all around on the outside. And, revolving within itself, it initiated a divine beginning of unceasing, intelligent life for all time." (ἡ δ' ἐκ

³⁹ See passage 35a1-b3 and Stránský (2022) for a detailed explanation.

⁴⁰ The revolution of the Same will probably play the dominant role since it is both the outer and the ruling revolution of the world-soul. Cf. Karfik (2004, 179-180), who also understands the rotation of the world as caused by the revolution of the Same.

⁴¹ Cf. Karfik (2004, 190): "Die Weltseele ist ein geometrisch ausgedehntes Gebilde. [...] Die Weltseele *ist* also ein stereometrisches Gebilde." Thein (2018, 79, 81) also speaks of "an explicit spatial arrangement of the soul" or "a rotating three-dimensional structure".

⁴² Robinson (1995, 75). Similarly, Luc Brisson regards the soul as a strictly non-bodily and non-extended entity - Brisson (1998, 339).

⁴³ Cf. Karfik (2007, 113).

μέσου πρὸς τὸν ἔσχατον οὐρανὸν πάντη διαπλακεῖσα κύκλω τε αὐτὸν ἔξωθεν περικαλύψασα, αὐτὴ ἐν αὐτῇ στρεφομένη, θείαν ἀρχὴν ἤρξατο ἀπαύστου καὶ ἔμφορος βίου πρὸς τὸν σύμπαντα χρόνον - 36e2-5). Thus, we can say that, unlike mortal beings, the world has its body in its soul and not *vice versa*. However, this has some serious implications. Whereas the revolutions of the souls of mortal being are disturbed by stimuli coming to the soul through the body *from without* (see τὰ τῶν προσπιπτόντων παθήματα - 43b7), the world-soul is not threatened by anything of this kind, since there is nothing corporeal outside it.

This passage, therefore, seems to be in accord with what we have learned about the soul from our dialogue so far. The specific intermediate being allows the demiurge to work with it in a certain way, and the spherical form of the body of the world, then, accords with the nature of the soul, since it does not in any way disturb its revolutions, and therefore the soul can envelop it and animate it without any loss of its perfect rationality.⁴⁴ The necessary consequence of this all is that a kind of extension has to be attributed to the soul.⁴⁵ Scholars presenting the soul as a purely immaterial and non-extended entity are forced to interpret all of the above as a mere metaphor or concomitant of Timaeus' allegedly mythical narrative.⁴⁶ We consider this a rather radical step that goes against the letter of the dialogue, for which we find no sufficient justification.⁴⁷

These authors provide two reasons for their reading: (1) a need for a guarantee of the distinctness of the world-soul from the world-body which, given the material nature of the body, can only be a wholly non-bodily character of the soul;⁴⁸ (2) the soul is invisible and, therefore, distinct from all corporeality, so it has no extension.⁴⁹ However, the common denominator of both objections to a literal reading of our passage is, in our opinion, that they implicitly attribute to Plato a Cartesian-type dualism. Both Robinson and Brisson take the reference to distinctness from corporeality as sufficient grounds for the claim that the soul is immaterial and therefore cannot be extended.

However, one of the important messages that the reader should take away from passage 35a-b is that Plato's conception of the soul is not Cartesian.⁵⁰ Timaeus, it is true, begins his speech with a dualistic distinction *par excellence* between being and becoming (27d5-28a4) but the key point is that the soul belongs to neither of these "realms". Rather, it connects them and, to some extent, shares the characteristics of both. In other words, we are convinced that the privileged position of the soul, or its distinctness from both corporeal and eternal entities, is at this point sufficiently established and, therefore, there is no reason to insist on its strict incorporeality. But since the soul is also not corporeal, it can occupy the same place as a body or as another soul. Individual souls can, therefore, exist within the world, which is pervaded by the world-soul, and each of them can be assigned (before its first incarnation) to its star

⁴⁴ In the case of mortal beings, it is the non-spherical shape of the mortal body, in addition to the stimuli coming from outside, that causes the soul's irrationality. It is a difficult question whether also the world-soul itself, i.e., independently of the body, can be attributed a spherical *shape*. Some parts of Timaeus' speech seem to suggest this possibility (e.g. the description of the construction of the world-soul in passage 36b6-c2, which is made without regard to its connection with the body, or the use of the term σχῆμα in 44b5), but, in any case, it is more important to put emphasis rather on its circular *motion*, which is crucial for the proper working of its cognitive capacities.

⁴⁵ Cf. Corcilius (2018, 60-61), Johansen, (2004, 140), Karfik (2004, 190-192), Karfik (2007, 109).

⁴⁶ Brisson (1998, 339), Robinson (1995, 75).

⁴⁷ We accept Thomas Robinson's hermeneutical principle that "the only safe rule to follow is to accept the text at its face value, unless there is compelling evidence to the contrary." - Robinson (1995, 65).

⁴⁸ Robinson (1995, 75 and note 54).

⁴⁹ Brisson (1998, 339).

⁵⁰ Cf. Johansen (2004, 140).

(41d8-e2) which is itself a living being, that is, has its own soul, and after death can, if certain conditions are met, return there (42b3-5).

Conclusion

In this study, we have given an interpretation of the operations by which the demiurge completes the soul of the world and attaches it to the world-body. First, it has been shown that the soul is given a share in harmony. As a result, the soul becomes sensitive to harmony and is able to perform its cognitive function appropriately. Of great importance is also the subsequent division of the soul into one revolution of the Same and seven revolutions of the Other, whereby the soul can “touch” and therefore cognize both that which exists eternally and the corporeal. Then, the demiurge endows the soul with self-movement whereby it can govern the movement of corporeal world. Although we have seen that corporeality itself (in the *precosmic* state) possesses a kind of inherent instability, its movement within the created world is always already taking place under the governance of the soul. The soul of the world, therefore, can be said to care for the world with regard to that which exists eternally. Its action, thus, can be understood as a continuation of the original demiurge’s creative act. In the last part of the passage under discussion, Timaeus describes the attachment of the world-soul to the world-body from which we can clearly deduce that he conceives it as a spatially extended entity. We can therefore say that the soul, according to Plato, is not a strictly non-bodily entity, but shares certain aspects of corporeality as well. Thanks to its “intermediary” being, it can not only cognize that which exists eternally, but be sensitive to bodily movements as well. At the same time, though, it does not collide with these movements or with corporeality in general. Given this peculiar nature of the soul, we can say that the traditional problem of the interaction between the soul and the body loses, at least to some extent, its Cartesian urgency.⁵¹

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⁵¹ Cf. the (perhaps overly) optimistic position of Thomas Johansen: "[...] Timaeus seems to see no ontological problem in soul-body interaction. Both soul and body are spatially extended and move in space. Because both body and soul move in space we can see how the motions of the soul may affect the motions of the body and vice versa." - Johansen (2004, 141).

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