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Plato's *Timaeus* and the Limits of Natural Science

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Abstract: The relationship between mind and necessity is one of the major points of difficulty for the interpretation of Plato's *Timaeus*. At times Timaeus seems to say the demiurge is omnipotent in his creation, and at other times seems to say he is limited by pre-existing matter. Most interpretations take one of the two sides, but this paper proposes a novel approach to interpreting this issue which resolves the difficulty. This paper suggests that in his speech Timaeus presents two hypothetical models of creation, one with an omnipotent demiurge and one where he is limited by matter, so as to investigate their theoretical and empirical validity. Further, he shows that each model is ultimately an inadequate explanation of the first principles of the cosmos. Timaeus' speech is therefore properly understood to be aporetic: it leaves its listeners aware of the difficulties inherent in the two models of creation, but without a more viable alternative.

Keywords: Plato, Timaeus, cosmology, teleology, materialism

1 Introduction

A major complexity of Plato's *Timaeus* is the relationship between mind and necessity in Timaeus' cosmology. Timaeus lays out two different kinds of cause in his account: the first is the cause of mind, modeled after the production of a craftsman, who conceives in his mind of that which he wants to produce and then produces this object, and which is embodied by the demiurge's creative activity; the second is the cause of necessity, where mindless material substances produce results through the interactions of their necessary motions (described most clearly at 46c7–e6, especially 46e1–2). The basic question concerning these two types of cause is this: was there necessity before the demiurge's creation or not?¹ Or, to

1 One of the major controversies concerning the *Timaeus* is whether to take the claim that the demiurge took over pre-existing disorder and brought it into order literally or metaphorically, i.e.

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rephrase the question: is the demiurge the cause of all things or not? Timaeus certainly says that the demiurge took over some disorderly moving matter before his creation (30a2–5), so he does not say that the demiurge created from nothing. The question therefore concerns not the existence of matter before creation, but the character of that matter: did that matter have characteristics that the demiurge could not change? That is, was the demiurge capable of doing whatever he wanted with the pre-existing matter? For if that matter had some fixed characteristics that the demiurge could not change – namely, if it consisted of fire, earth, water, and air, which the demiurge had to work with as they were – then one must say that the cosmos is the product of both mind and necessity. But if that matter was wholly shaped by the demiurge – that is, if he formed fire and the other elements as part of his creation – then we could say that the cosmos was wholly made in accordance with the demiurge’s mind.²

This question is important because of the character of Timaeus’ natural scientific inquiries. As Critias puts it, Timaeus is a man who “has made it his work most of all to know the nature of the whole” (27a4–5).³ To know the nature of the whole, and not just particular things within that whole, means to have an account of the first principles of the whole and how everything else comes to be from those first principles. If the demiurge could shape the primordial disorder however he

whether the demiurge actually creates in time or not. This controversy can be traced back to Aristotle’s and Xenocrates’ discussions of the *Timaeus* (see Zeller 1888, 364n5 and Guthrie 1978, 302ff. for references to and discussion of the ancient sources). Baltes (1976–8) treats in great detail the history of this question as debated by the ancient interpreters. Taylor (1928) and Cornford (1997) in their classic commentaries hold the metaphorical view. This was questioned by Vlastos (1939), who argued for the literal position, and defended this position in Vlastos (1965). He is followed by Hackforth (1959). Defenders of the metaphorical reading include Cherniss (1944) and Tarán (1971). Helpful discussion of the debate can be found in Lloyd (1966, 279ff.) and Guthrie (1978, 302ff.). The arguments of my essay hold whether the pre-cosmic disorder is interpreted literally or metaphorically, for my focus is on the precise character of the disorder, and in particular whether it in any way limits the demiurge’s power, regardless of whether this disorder is said to have existed temporarily before some moment of creation.

² Most recently, Hall and Jelinek (2022) have identified these as the two possible alternatives for understanding the relation of mind to necessity, and themselves take the position that he is limited by necessity (though see Reshotko 2022 for a different view of the character of the necessity facing the demiurge). Crombie (1963, 224ff.) raises the question of what exactly the demiurge faces when he creates and whether it limits him, citing the difficult and conflicting evidence of the dialogue. Morrow (1950), Strange (1985), Carone (2005), Mason (2006), and Jelinek (2011) take the side that the demiurge is limited by necessity. Lennox (1985), Silverman (1992), Johansen (2004), Sedley (2007), and Broadie (2012, 242) take the other side, arguing that the realm of necessity does not in fact limit the demiurge’s creation. See Coulter (2022) for an account of the importance of this relation for the anthropological portion of the speech.

³ All translations are my own from Burnet’s edition of the Greek text.

wished, there would be only one first principle from which everything comes to be, namely the demiurge, and so to give an account of the whole one would only need to give an account of the demiurge's creation. But if the demiurge was forced to work with some matter whose character he could not change, there would be two first principles of the whole, namely the demiurge and the matter. One would therefore have to give an account both of this matter and of the demiurge's creation.

The literature is divided on which picture is a correct interpretation of Timaeus' statements, but I argue that this is because he in fact does present both pictures in his speech.⁴ That is, at times Timaeus presents the demiurge as fully capable of shaping the pre-cosmic matter, and at other times he presents that demiurge as limited by the pre-existing nature of that matter. But why would Timaeus equivocate about this issue? I argue that Timaeus' speech is best understood not so much as a statement of a definitive doctrine than as the presentation of different scientific models for understanding the first principles of the cosmos. That is, Timaeus presents different mutually exclusive hypotheses concerning the genesis of the cosmos and thinks through these possibilities and their limitations.⁵ The hypothetical and complementary character of the models explains Timaeus' self-contradictions. Further, I argue that Timaeus thinks neither of his two models – that the demiurge is the cause of all things or that he was limited by matter – is fully adequate, and that the limitations of each leads one to be attracted to the other as a model of explanation: the failure of the omnipotent demiurge model makes one want to say he was limited by matter,

4 Grote (1865, 268) is an early example of a scholar who notes Timaeus' self-contradiction in assuming at points that there existed ready-made fire, etc., before the demiurge's creation, and at other points that before the demiurge's creation there was nothing but primordial chaos. Several passages suggest the demiurge made the elements and is therefore omnipotent. 31b4ff. appear to treat the creation of the four elements as part of the demiurge's work. At 53b1–4 it is said that the elements possessed no more than "traces" of themselves before the demiurge's action, suggesting he gave the elements their character. At 53b7–c1, before the discussion of the triangles, Timaeus says he will make clear the genesis of the elements, suggesting that the demiurge's action is responsible for them. Finally, at 69b5–c2, Timaeus suggests that nothing really like the elements existed before the demiurge's creation, but he had to make the elements first before ordering the rest of the cosmos. On the other hand, the most emphatic statement that the demiurge was limited by pre-existing elements comes when Timaeus says the world was created by mind persuading necessity and that the elements had a nature before the genesis of the cosmos (47e3ff., especially 48b3–5).

5 See Pitteloud (2022) for another recent interpretation of Timaeus' account as a kind of thought experiment. In reading Timaeus' speech this way, I follow the lead of Taylor (1928, 19), who points out: "The way in which Timaeus is made at each chief new step in his narrative to insist on the highly provisional character of his speculations is a most significant feature of the dialogue, to which no one as yet seems to have done full justice."

and the failure of the mixed account leads one to consider the demiurge as sole cause of all things. Timaeus' speech is therefore best understood to be aporetic in character: he shows the limits of either method of explaining the first principles of the cosmos, thereby showing his view of the limits of natural scientific accounts of the whole.

This essay will proceed by taking up each of these models in turn and by articulating Timaeus' account of the limits of each. First, I will take up the model in which the demiurge takes over some matter whose nature he cannot change. For this model to work, one must give an account of the character of the matter which the demiurge uses in his creation. But in the discussion of the receptacle, Timaeus shows that one cannot give an adequate account of the first principles underlying such matter. One is thereby led to consider the possibility that the demiurge alone is the cause of all things, unlimited by any such pre-existing matter. I will take up this model second and explain Timaeus' critique of it. In particular, Timaeus shows that for this model to make sense one must give an adequate account of the demiurge's motivations for creating the cosmos, and the account must also correspond to the empirical reality of the cosmos we live in. But I argue that Timaeus shows that one cannot give such an account, and that therefore one is left in perplexity about the first principles of the cosmos.

2 Materialism and the Receptacle

Timaeus' treatment of what I have called the mixed model of creation – according to which the demiurge takes over some matter which has its own nature – occurs primarily in his discussion of the receptacle (47e3–53c3).⁶ For this mixed model to make sense, it is necessary to give an account of the character of the matter which the demiurge uses for his creation, without making reference to the demiurge in this explanation. For if the account of the matter were to make reference to the demiurge as a cause, then it would not make sense to say that the matter is an independent principle of the cosmos.⁷ Timaeus' critique of this possibility takes the form of a

⁶ Although the mixed model comes second in the dialogue, it is unimportant which account one begins with, since the failures of each points to the need for the other: the mixed model described here motivates the desire for an account of the cosmos according to which a demiurge makes everything, including the four elements, and is therefore unlimited by any matter; the account that comes first in the dialogue, which describes such an omnipotent demiurge, motivates the mixed model, according to which the demiurge is limited by matter that he does not create.

⁷ Gill (1987, 38) and Silverman (1992, 98) note the absence of the demiurge from the discussion of the receptacle and the importance of this fact for any attempt at interpretation of this passage.

critique of materialist philosophy:⁸ materialist systems are based on the idea of taking a set of perceptible substances as the first principles of the whole. Such systems claim that these basic substances mindlessly follow fixed rules of behavior, i.e. that they are governed by mindless necessity, and that all other phenomena can be reduced to these basic interactions. They therefore depend on the thought that one can give an adequate account of such material as first principles and of the necessity that governs them. Since the mixed model of creation depends on being able to give such an account of the material, by critiquing materialist philosophy, Timaeus shows the limitations of the mixed model of creation.

Before his discussion of the receptacle, Timaeus gives some hint that he thinks materialist accounts of the cosmos are inadequate. This suggestion occurs in the first section of his speech, which deals primarily with particular features of the cosmos understood as products of the demiurge's mind (29d7–47e2). Towards the end of this section, Timaeus gives a materialist explanation of vision, explaining how the interaction of fire with other things produces a motion in the visual stream, ultimately resulting in visual perception (45b2–46c6). Yet Timaeus then claims that these things – namely fire, the other elements, and their interactions – are not causes but co-causes (*συνάτια*) of vision, which are used by a god in constructing vision (46c7–d1). He further states that, though they are co-causes, they are opined by “most” not to be co-causes, but causes of all things (46d1–2). It is unlikely that by “most people” Timaeus means ordinary Greeks. Instead, by “most” he likely refers to most natural scientists and indicates that for them the most common approach to explaining the world is some kind of materialism. Most significant are the grounds on which he says it is proper to call material substances not causes but co-causes: he claims that “the lover of intelligence and science” (*ὁ νοῦ καὶ ἐπιστήμης ἐραστής*) must pursue the causes of the intelligent nature (*ἡ ἔμφρων φύσις*) first, and the causes of mindless necessity (“those [causes] that come to be when things are moved by some things, and of necessity move others”) second (46d7–e2). With this statement Timaeus suggests that one who is really serious about gaining a scientific understanding of the world based on solid principles is not satisfied with materialism. Instead, unlike the other natural scientists, one who is really serious will seek out some intelligent being like the demiurge, and not mere material causes, as the cause of everything. In other words, Timaeus primes his discussion of the mixed model with a suggestion that

8 Gorey (2018) also interprets the discussion of the receptacle as a critique of materialist philosophy, but his analysis focuses more on the problem of how order can arise from the disorderly elements without teleology. By contrast, my discussion focuses on the question of what underlies the elements that the materialists claim are the first principles of the whole.

certain limitations of this model will lead one to want to say the demiurge alone is the cause of all things.

Following this suggestion about the limitations of materialist accounts, Timaeus gives a clear statement that he is going to discuss the mixed model: he states that the cosmos came to be through a mixture of mind and necessity, with mind persuading necessity (47e3–48a5). As we have seen, for such a model to make sense, it is necessary to give an account of the material which the demiurge takes over, and in particular to discover the principle (ἀρχή) that governs the realm of necessity (48a7–b3). To do so, Timaeus claims that it is necessary to examine the nature of fire, earth, water, and air, as well as their affections (πάθη) (48b3–5). This examination is necessary because no one has yet revealed the genesis of fire and the others, but instead they themselves are spoken of as principles (ἀρχαί) or as elements/letters of the whole (στοιχεῖα τοῦ παντός). But Timaeus asserts that they in fact are not even properly likened to the forms of syllables, let alone elements/letters, playing on the meaning of στοιχεῖα as letters of the alphabet (48b5–c2). Timaeus indicates that many treat fire and the other elements as the fundamental principles of the whole, or the building blocks out of which everything else is built. Yet in his view, they are not properly spoken of in this way. Further, fire and the others are not even properly spoken of as “syllables,” i.e. as being built out of some more fundamental perceptible substances which are in fact the building blocks of the whole. Rather something else is the more basic principle of the whole, which is fundamentally different in character from anything like fire and the other perceptible elements.

The following section (48e2–52d1) is devoted to explaining this more basic principle. Timaeus begins by explaining that, whereas the two classes of being and becoming sufficed for the earlier discussion, now a third class is needed. Being and becoming retain the meaning they had in the first part of the dialogue (27d5–28a4): the beings are eternal, unchanging, and accessed through reason; the things that become are temporary, changing, and perceptible. Timaeus now adds a third class: the “receptacle of every coming into being” (πάσης γενέσεως ὑποδοχή), which he likens to a nurse (49a5–6). This receptacle (which is later also called the “chora” – or “space,” 52a8) becomes the main focus of the rest of the discussion. Timaeus says that by examining fire, earth, water, and air, it is possible to understand why this receptacle must be added to the account. In particular, he focuses on a key empirical fact: each of these substances transforms into the others. Water, when it condenses, becomes earth; when it is separated out and dissolved, it becomes air; air in turn can be burned to make fire; and this same cycle repeats in the other direction, when fire becomes air (smoke), air condenses into clouds and rains, etc. (49b7–c7). For Timaeus, the key inference to be made from this empirical fact is that fire and the others are not really the things *there* outside of us. Rather, it is more

proper to say that these are certain *sorts* of something that really *is* there (49c7–50a4).⁹ To explain this more clearly, Timaeus uses an example: if one took some gold, and formed it into shapes like triangles, then it is most proper to say that the gold is the thing there, but it has taken on a certain form or shape (50a5–b5). The receptacle plays the role of gold in the analogy: it is the thing that is really there, but which takes on the forms of all the perceptible substances, including those that seem most fundamental, like fire. The basic idea Timaeus relies on throughout this strange discussion is the following: when we say that fire becomes smoke, in some sense we are saying that the same thing was once fire and now is smoke. In other words, in speaking of a transformation, we are saying something *stays the same* when fire becomes smoke, which is not itself either the fire or the smoke, even though it takes on all their perceptible qualities before and after the transformation. The thing that stays the same in this transformation, the existence of which Timaeus infers from the empirical fact of the elements transforming into one another, he calls the “receptacle.”¹⁰

9 I thus follow what is sometimes called the traditional reading of 49c7–50b5, of which Taylor (1928) and Cornford (1997) are examples. This reading was challenged by Cherniss (1954). The traditional reading states that this passage concerns the status of particular instances of the elements, saying in particular that they are not properly called “this” (i.e. a being) but are properly called “this sort” (i.e. a certain kind of some more fundamental thing which really is a being). Cherniss’ reading states that the passage does not call into question the status of particular instances of the elements, but rather that it gives a new referent to the names “fire,” etc., namely that these things refer not to particular instances of the elements but to a set of stable characteristics (see also Zeyl 2000, lvi–lix and Sattler 2012, 167n33 for helpful summaries of the two positions). Since I read the discussion of the receptacle as a critique of traditional materialist theories on the grounds that they take for granted the status of the elements as solid first principles of the whole, my analysis takes the discussion of the receptacle to concern the status of particular instances of the elements and therefore follows the traditional reading. For a similar view see Zeyl (1975, 127). For other defenders of the traditional view see Gulley (1960) and Gill (1987). For defenders of Cherniss’ view see Lee (1967), Mills (1968, 154–6), and Mohr (1980, 141).

10 Thus my reading interprets the receptacle as the primal matter that transforms into the particular elements, instead of the alternative view that it represents the space in which the elements come to be. Some recent interpretations that take the receptacle as space include Sattler (2012) and Buckels (2016). See Nikolaou (1998, 163ff.) for further discussion of the literature on this point. My reading of the receptacle as matter is especially based on Timaeus’ focus on the transformation of the elements into one another and the corresponding inference that some *thing* must remain before and after the transformation. Further, my reading of the receptacle section of the speech as an account of the mixed model contributes to my view that the receptacle ought to be taken as matter: by reading the receptacle as space, one is naturally led in the direction of saying that the elements themselves were made by the demiurge and that space alone, in which these elements came to be, existed before creation. But this then leads one to say the demiurge is the cause of all things, which he made wholly of his own accord and unlimited by the nature of a pre-existing matter (a kind of creation *ex nihilo*). This logical motion is helpfully displayed in Harte (2002), which interprets the receptacle as space,

The character of this receptacle is perplexing, perhaps above all due to its having the following characteristic: Timaeus says that the receptacle must be “outside of all forms” (πάντων ἔκτος εἰδῶν), insofar as it is the “the thing that will receive all classes (γένη) in itself” (50e4–5). He connects this point with the fact that the receptacle will have to receive *opposite* qualities when it takes on different forms (50e1–4). The basic thought behind this point is that, since the receptacle will transform into the things that have opposite qualities, it must entirely lack the perceptible qualities that is going to receive. For example, if the receptacle transforms from fire to smoke, from something bright to something dark, it itself must be neither bright nor dark, otherwise it would be unable to make this transformation. As an analogy, Timaeus uses the example of oils for smelling: when one wants to make a perfume from an oil, he must remove all scents from that oil beforehand so that it can wholly take on the desired scent (50e5–8). Since Timaeus insists that the receptacle becomes all the forms that we perceive, this observation has the radical implication that the receptacle is entirely lacking in any perceptible qualities whatsoever.

Timaeus goes further, and claims that the receptacle is bodiless, by calling it “the nature that receives all bodies” (50b6). By unpacking what Timaeus probably means by this, we can see more clearly just how mysterious the receptacle really is. It is not immediately obvious why Timaeus claims that the receptacle is bodiless: even if one grants that it lacks all perceptible qualities, one might still try to insist that it must be something bodily, which then takes on the perceptible qualities of the different elements. Timaeus himself does not explain his reasoning, but perhaps he means to suggest that what we mean when we call something “bodily” is necessarily based on certain perceptible qualities, and so if the substratum lacks all perceptible qualities, it must be wrong to call it “bodily” too. For example, he might point to some of the most basic reasons we call something a body: a body is something that resists touch; or, a body is visually distinguished from the things around it; or, separate bodies may be pulled apart from one another. But if we use these criteria and others like them to define “body,” then Timaeus would be on solid ground in saying that our conception of “body” is fundamentally bound up with a variety of perceptible qualities, and so if one were to call the receptacle “bodily,” he would necessarily impose characteristics on the receptacle which it in itself does not have.

To sum up, Timaeus concludes that this receptacle, something bodiless and wholly imperceptible, and therefore something greatly mysterious, is the thing that

Koslicki (2004), a review of Harte’s work that claims Harte’s interpretation leads to creation *ex nihilo*, and Harte (2010), which responds to Koslicki’s review.

becomes all perceptible substances, and is the fundamental principle of the perceptible world, rather than any particular perceptible substances like fire.

In light of this conclusion, we can see more clearly why Timaeus is skeptical of materialism. The basic premise of materialism is that there are certain perceptible substances, like fire, which behave according to fixed necessities, and that all other phenomena can be reduced to interactions of these elemental substances. Because the elemental substances behave in necessary ways, all higher-level phenomena must also behave in necessary ways, and therefore the world, as something with a fixed nature, is intelligible by human reason. But Timaeus concludes that such perceptible substances cannot be treated as the most fundamental principles of the world. Instead, they come to be from something which itself is bodiless and wholly imperceptible. But this raises a major question: *how* do the perceptible substances come to be from the imperceptible substratum? Somehow, something totally lacking in any perceptible qualities comes to take on perceptible qualities. But whatever power can effect this transformation might be able to make the transformation occur in other ways. For example, whatever it is that causes the receptacle to take on the qualities of hot, bright, etc. – the qualities that belong to fire – could perhaps make the receptacle take on the qualities of *cold*, bright, and having the appearance of fire. That is, it might be able to fundamentally change the character of a substance like fire from something hot to something cold, because the underlying receptacle would in no way be constrained to take on one set of perceptible qualities over any other set. In other words, the receptacle taking on perceptible forms amounts to a kind of something coming from nothing, a creation *ex nihilo*. And because in the mixed model, the demiurge is not responsible for the matter he uses in his creation, one cannot make recourse to such a rational craftsman to argue that the matter is stable. Of course, it might be the case that the receptacle takes on perceptible forms in accordance with certain necessities. But the problem is that since we do not have access to the receptacle itself we cannot be certain that it is constrained by such necessities. And this uncertainty calls into question the key assumption of materialism that the elemental substances, from which all higher-level phenomena come to be, act according to fixed necessities.

This point becomes clearer when we consider the alternative: say it were true that certain perceptible substances, like fire, exist eternally. Then, in reducing all higher-level phenomena to the interactions of these substances, one could ask: what else is left to explain? The elements are eternal, so they depend on nothing other than themselves for their existence, and everything else comes to be from them. In this case, it would seem that one really has found a solid foundation for the world we perceive, on the basis of which everything else can be explained. But if no perceptible substances are eternal, one is forced to conclude that something else, something qualitatively different from all perceptible things, is the foundation of our world.

Timaeus's account is complicated by the fact that it includes not only the receptacle, but also being and becoming. As in the earlier part of the dialogue, which featured the demiurge, he claims that the things that come to be are imitations of the beings, which serve as eternally unchanging paradigms (48e5–49a1; 50c5). So although the things that come to be are properly understood to be the receptacle taking on perceptible forms, Timaeus tries to maintain that the receptacle takes on these forms in accord with eternally unchanging models. In doing so, he tries to maintain the stability of the cosmos in light of the problem posed by the receptacle. For even if the receptacle is the most fundamental principle of the perceptible world, if it takes on forms in accord with the eternally unchanging paradigms, we could still say that each of the perceptible classes of things is stable. Yet, as noted before, this account makes no reference to the demiurge, since it is meant to be an account of the first principles of the matter used by the demiurge. To save the mixed model, Timaeus now attempts to give an account of the first principles of the matter by saying that somehow the eternal beings cause the receptacle to take on perceptible forms through some mindless mechanism, without the demiurge as an intermediary.

This attempted explanation immediately faces a major problem: how exactly do the beings affect the receptacle and cause it to take on certain perceptible forms? All Timaeus has to say on this question is that the particulars are “always imitations of the beings, formed from them in some manner that is difficult to explain and wonderful, which we will go through later” (50c5–6), but the issue never actually comes up again, and so he never gives a clearer account of the mechanism. This problem seems to arise especially due to the absence of the demiurge from this picture. If there were some demiurge, then it is sensible to say that it looks to and conceives of the beings, then creates particulars in accordance with those beings; the demiurge's power serves as the link. But without such a god, it is difficult to say how exactly such eternal and intelligible beings could affect the world.

Another difficulty attends this account. Immediately after concluding that the receptacle is most fundamental, Timaeus raises the question: do there even exist certain beings themselves by themselves, that are purely intelligible forms, or are the perceptible and bodily particulars all there is (51b6–5)? That is, though at first Timaeus unquestioningly included the eternally stable beings as part of this account, he now calls that premise into question. This problem too seems to arise from the lack of a demiurge: if there were a demiurge, one could say that the eternal and intelligible beings exist in the divine mind; but without such a demiurge, it becomes unclear where these beings reside, and what manner of existence they have.¹¹

¹¹ Perl (1998) revives this line of argument, which traditionally found much favor.

At this point, Timaeus gives his view on the existence of these intelligible forms, and in doing so reveals what he thinks is at stake in the matter. Timaeus indicates that his position is uncertain: he says only that he will set down “his own vote” on the matter (51d3). He approaches the matter by laying out two alternatives, and then choosing one over the other. These alternatives are as follows: if true opinion and intelligence (*νοῦς*) are different, then the separate intelligible forms must exist; but if true opinion and intelligence are the same, then the perceptible and bodily things are all there is. By intelligence, Timaeus seems to mean genuinely solid understanding, where one has not only experience of perceptible things, but also an understanding of how they come to be from solid first principles. By true opinion, Timaeus suggests a more tentative kind of knowledge, based on previous experience, but without any guarantee of its future stability. With this distinction in mind, we can understand how he links these to the two alternatives: if the separate forms exist, are known, and have a causal effect that bring about particulars, then one can understand, reasoning from first principles, how each class of things come to be (namely from the forms), and be certain of their stability; by contrast, if there are no such separate forms, all one can say is that the receptacle takes on perceptible forms, and they seem to be stable, but we have no guarantee that they will remain so, because we are totally incapable of understanding how the substratum takes on those perceptible forms.

Timaeus votes that the separate forms do exist, and therefore that intelligence is possible. He does not merely assert this, but gives some defense of his vote: he argues that intelligence and true opinion come to be in different ways, and have different characters; therefore, since the existence of the separate forms is a necessary condition of intelligence being other than true opinion, the difference between intelligence and true opinion implies the existence of the separate forms. In other words, rather than arguing directly for the existence of the separate forms, Timaeus argues from our experience that intelligence is other than true opinion to show that the separate forms must exist. This argument is as follows: intelligence comes to be from teaching (*διδαχί*), true opinion from persuasion; further, intelligence holds with true argument, and is unmovable by persuasion, whereas true opinion is irrational and movable by persuasion (51e2–4). This argument is somewhat opaque, but it seems to point to the experience of logical necessities: for example, if all fire is hot, and some particular thing is not hot, then it must not be fire. A claim of this sort would not be movable by persuasion, because it necessarily holds through logical deduction. But if it is right that this is what Timaeus has in mind, then his argument for the separate forms seems rather deficient. Logical reasoning always depends on certain assumptions, as in the example just given it was assumed that all fire is hot. But the whole question at issue is whether we can be certain of claims about perceptible substances like fire, for example whether we

can truly be certain that all fire is hot, and the experience of logical necessities seems to give no insight into this question. The weakness of this argument may help to explain why Timaeus merely “votes” for the existence of the separate forms, and is not certain of their existence.

To conclude this discussion, we began the investigation of Timaeus’s account of the receptacle with the following question: Why does Timaeus think that a serious thinker, the “lover of intelligence and science,” is compelled to seek an intelligent maker as the sole first cause of the world? That is, why would such a thinker see either a wholly materialistic model or a mixed model of the genesis of the cosmos as insufficient? In this light, we saw that Timaeus’ discussion of the receptacle is a critique of materialist philosophy on the grounds that it does not actually show a solid first principle of material substances. This limitation calls into question the adequacy of both purely material accounts of the world and those that say a demiurge made use of some pre-existing matter. The basic claim of materialist philosophy is that everything arises from certain perceptible substances that follow fixed necessities, and therefore the entire world must be governed by knowable necessity. But the empirical fact that even the most basic perceptible substances can transform into one another forces one to posit the existence of the receptacle, a wholly imperceptible and bodiless substance from which all perceptible things come to be. But the existence of this receptacle calls into question the claim that the basic perceptible substances, like fire, act according to necessity, and thereby undermines the key premise of materialism. Timaeus makes an attempt to maintain the stability of the basic perceptible substances by saying they come to be by the mindless action of separate forms, eternally unchanging beings, causing the receptacle to take on perceptible forms in necessary ways. But without an intelligent demiurge, the location, manner of existence, and causal power of these separate forms is extremely mysterious. This investigation therefore results in two alternative accounts of the matter used by the demiurge: either one can say that the receptacle and perceptible bodily things are all there is, but then the stability of those perceptible things is questionable due to our ignorance about how the receptacle takes on the visible forms; or, one can say that there are certain separate forms, eternally unchanging, which affect the substratum, causing it to take on these perceptible forms in necessary ways, but then one is forced to posit the existence of these mysterious beings, with some mysterious causal mechanism. With these two alternatives in mind, we can see why the “lover of intelligence and science,” one who is satisfied with neither uncertain empirical knowledge nor mysterious accounts of separate forms, would be compelled to turn to the idea that an intelligent maker like the demiurge is the cause of all things. In the following section, we will give a clearer account of this model of creation and explain why Timaeus thinks it too is inadequate.

3 The Demiurge: Intelligence as the First Cause of the Cosmos

The problems inherent in the mixed model of creation lead to consideration of the model that the demiurge alone causes all things, without limitations due to the material he uses. But Timaeus does not treat this model as simply unproblematic. Rather, his long account of the demiurge's creation (29d7–47e2) may be viewed as an exploration of whether this possibility makes sense and is consistent with the world we live in. In particular, he focuses on the issue of the demiurge's motivations for creating the cosmos. Though it is said that the demiurge creates for the sake of what is good and beautiful, it is necessary to say how exactly the creation is good, and for whom. This line of reasoning, combined with analysis of the world we actually live in, leads Timaeus to conclude that this model is deficient too, which deficiency leads one to think the mixed model would be more adequate.

It is necessary first to articulate more clearly the demiurge model of creation. At the beginning of Timaeus' speech he makes a stark distinction between two classes of things: being and becoming (27d5–28a4). The former consists of those things that exist forever, never coming to be or passing away, which are eternally unchanging, and grasped by intelligence and rational argument. The latter consists of those things that come to be and pass away, change, and are grasped by perception. Following this division, Timaeus turns to examine the cosmos, and in particular whether it has always existed or has come to be (28b2–c2). He argues that it came to be on the following grounds: the world we live in consists of perceptible things; but everything that is perceptible must have come to be – a claim that Timaeus treats as empirical fact; therefore this cosmos, being perceptible, must have come to be. But since the cosmos came to be and, as Timaeus asserts, everything that comes to be must have some cause (28a4–6; 28c2–3), the major question then becomes: what is the cause of this cosmos? Timaeus answers in the following way (28c5–29b2): there is a god called the demiurge who created our cosmos and all the perceptible things in it.¹² He is called a demiurge because he creates in the manner of a craftsman, by conceiving of the things he is going to create beforehand, using a certain model or paradigm (*παράδειγμα*), and then creating them in accordance with the model he has in mind. In particular, Timaeus asserts that the demiurge looks to the beings – the eternally unchanging and intelligible things –

¹² Johansen (2014) notes that the premises that the cosmos came to be and all things that come to be have a cause do not necessitate the conclusion that the cosmos came to be through the demiurge. In my view, since Timaeus can be understood to be laying out a model here, it is unnecessary that he at this point prove that the model is true.

and uses them as paradigms for the particular things that he creates. So, for example, in making a particular tree, the demiurge would look to the eternally unchanging being “tree,” and create a perceptible and particular imitation of the purely intelligible being. In light of this description of the genesis of the cosmos, we can understand better Timaeus’s reasons for initially making the stark distinction between being and becoming: he treats the beings as the intelligible paradigms on which all perceptible particulars are based, and the demiurge as the link between the two, who looks to the beings and uses them in creating the particulars. Considering the problems raised in the discussion of the mixed model, we can understand why this account is attractive. It promises that we can explain everything as coming to be from certain fixed and eternal first principles which are wholly knowable by reason – namely the eternal beings with the demiurge as the link to perceptible beings – without the mysteriousness that was at the bottom of the materialist view and which undermined our certainty about the stability of the world as something governed by necessity.¹³

But rather than assuming that this model is adequate, Timaeus investigates its plausibility. This investigation begins with the attempt to say “on account of what cause” (διὰ ἧντινα αἰτίας) the god put together this whole (29d7–e1). Timaeus begins by investigating the god’s motivations for creating the world. The reasoning behind this focus seems to be the following: for the demiurge solution to prove the stability of the world, the demiurge must always create particulars in accord with the eternal paradigms. But as a being with mind, when the god acts, he must act for some reason. So it is necessary to see whether the demiurge is the sort of being whose motivations compel him always to create in accord with the eternal paradigms. The necessity of explaining the demiurge’s motivations becomes clearer when we consider the alternative. Suppose the demiurge’s motivations are simply mysterious. What reason would we then have to believe he will always create in accord with the eternal paradigms? Might he not simply decide at some point to stop making the perceptible things in the same way? In other words, if the god’s motivations are mysterious to us, then we become uncertain about whether we can expect the world to follow stable necessities, and therefore we cannot say that we have a clear account of the world from knowable first principles.

At first, Timaeus’s presentation of the god’s motives seems simple enough: the god is good and beings that are good are free from envy (φθόνος), so he wanted everything to be good like himself. In other words, the god is motivated by a simple

¹³ Although it is true that at 30a3–5 Timaeus speaks of the demiurge taking over disorderly matter, his later discussion of the creation of the elements as part of the creation story (31b4ff.) implies that this pre-cosmic matter is not here treated as having the form of the elements and therefore that this section of the speech is properly understood as taking the demiurge to be unlimited in his creation.

generosity to bring the world into a good condition. But the account soon becomes more complicated. First, the god wanted to make everything good, so he took all that was visible, which was moving in a disorderly fashion, and brought it into order, believing order to be altogether better than disorder (30a2–6). But then Timaeus adds that it was not *themis* – not in accordance with divine law – for the god to effect other than what is most *beautiful* (30a6–7). Compelled by *themis* to make what is most beautiful, the god recognized that beings with mind are more beautiful than those that lack mind, and he therefore gave the cosmos a mind and a soul (as the necessary precondition of mind), with the result that the god made the cosmos an intelligent animal (30a7–c1). So the god's creation in fact has two stages, the first, which is guided by the god's wish to make everything good, and the second, begun by the abrupt interruption of *themis*, in which the god is required to make everything most beautiful. The fact that the second stage begins with the interruption of *themis* suggests that, if *themis* had not interrupted, the god would have been finished after the first stage of creation. In other words, *themis* had to force the god to begin the second stage. If the god had finished after the first stage of creation, he would have simply brought the disorderly matter into order, but he would not have created any other conscious beings. So left to his own devices, the god would have been satisfied with having brought the mindless mass of matter into order. But this is strange: initially, it seemed that the god created out of generosity. Yet it is unclear how bringing mindless matter into order is in any way beneficial for that matter, insofar as it is unconscious of being in an orderly or disorderly condition. But if the god is not motivated by generosity, for what reason would he want to bring the disorderly matter into order? We can perhaps make sense of this action if we take the god to be a contemplative being. A contemplative being would be concerned with the stability of the things that he contemplates. So, the demiurge would want to bring matter into order because of his own concern for that stability: the demiurge in fact appears not to be generous, but self-interested in his motives.

But Timaeus soon raises some major problems for this possibility. The first becomes apparent from an examination of the following stages of the demiurge's creation. As mentioned before, after the introduction of *themis*, the demiurge is forced to make the cosmos as beautiful as possible. This has the immediate effect that the demiurge puts mind and soul in the cosmos. But the requirement that the cosmos be beautiful soon has other consequences. For example, after it has been determined that the cosmos will be an intelligent animal, Timaeus raises the question: since the demiurge will create the cosmos in accord with the eternal paradigms, which animal paradigm will the demiurge use in the making the cosmos as a whole (30c2–3)? The answer gives more insight into the guiding principles of creation at this point. The demiurge looks not to any particular animal, but to the

animal that contains all other animals within itself – the class “animal” itself – as the model, because this is the most complete animal, all other animals being mere parts, and that which is incomplete could never become beautiful (30c4–7). Part of the standard of beauty which guides creation appears to be the perfection or completeness of the thing created. This aspect of the demiurge’s goal becomes especially clear in the creation of the cosmos’ body: the demiurge makes the cosmos a perfect sphere, with no matter outside it, and no organs on its outside; he makes it unsusceptible to sickness or old age; and he makes it move in a circular rotation, but with no translation (32c5–34a7). All of these choices seem based on the principle that the cosmos should be complete and self-sufficient.

This trajectory reaches its peak when Timaeus says that, having completed the body and soul of the cosmos, the god has made the cosmos “able to associate with itself and in need of nothing else on account of virtue, but sufficiently known and a friend to itself. Indeed, on account of all these things, he begot it a *happy god*” (34b-6–9 – emphasis added). We get a clearer picture of the cosmos’ “association with itself” later, when Timaeus explains how the soul of the cosmos looks within itself, sees the particular beings, understands them, and relates them to the eternal beings of which they are imitations, i.e. the cosmos engages in the activity of introspective contemplation (36d8–37c5). But this picture raises a problem for Timaeus’s earlier suggestion that the demiurge is contemplative: *this* picture of the cosmos, as a perfectly self-sufficient, introspective, contemplative being, would seem to describe a truly contemplative god. Indeed, this point is suggested by the fact that, when he describes the cosmos as happy, Timaeus calls it a “god” – a name that he gives it nowhere else. But if a contemplative god would be of this character, why would it ever create anything outside itself? Rather, such a god, insofar as it is perfectly satisfied with itself and its eternal contemplation, would seem to have no reason to make or interact with anything outside itself. This may then explain why Timaeus, although he here describes the model in which the demiurge is unlimited by matter, nevertheless claims that the demiurge begins from some disorderly moving visible matter. Perhaps the thought is that, if there were nothing outside the demiurge, he would have no reason to create, but given the existence of some disorderly matter, he is compelled to bring that matter into order by his concern with stability.¹⁴

¹⁴ In this case, the demiurge’s status as a craftsman would underscore his concern with the order and stability of the cosmos, especially when one considers similar passages in other dialogues. For example, consider Socrates’ description of craftsmen as those who are concerned with bringing order and harmony to their works at *Gorgias* 503e1ff. I thank an anonymous reviewer for suggesting this connection.

The other major problem with the attempt to say the demiurge is contemplative has already been suggested, and is based on the fact that only after the introduction of *themis* does the demiurge make mind and soul. Suppose that the demiurge is contemplative, and that due to the existence of disorderly matter outside himself, he is compelled to bring that matter into order: Why then would he be compelled to make any other intelligent beings? What benefit for his contemplative activity would these beings provide? Yet we human beings are intelligent beings, which suggests that we could not have been the product of a purely contemplative god.

To summarize this line of argument, in order to defend the stability of the cosmos as entirely the product of an omnipotent demiurge who creates all particulars in accord with eternally stable paradigms, it is necessary to articulate the demiurge's motive for creation and how this motive compels him to create in accord with the stable paradigms; otherwise, the demiurge remains mysterious, and one cannot be certain of the cosmos' stability. Timaeus first attempts to explain the demiurge as a contemplative being, and his creation as in the service of his contemplative activity. But this explanation seems to face insurmountable obstacles: first, why would the demiurge look to or do anything outside itself, when it could simply engage in introspective contemplation forever? Second, even if somehow the demiurge was compelled to order some matter outside himself, why would he ever create other beings with mind, whose consciousness does not seem to benefit his contemplative activity? These obstacles call into question the entire attempt to ground the stability of the cosmos by reference to an omnipotent demiurge.

Timaeus attempts another explanation of the demiurge's motives. Following the introduction of *themis*, Timaeus describes in detail how and why the demiurge created various aspects of the cosmos, like its body and soul, time, the stars and planets, and the other classes of animals, including human beings. There appear to be two primary motives guiding each of these stages of creation. The first is simply that the cosmos and the things in it should imitate the paradigms as closely as possible. This goal motivates, for example, the creation of time (37c6–d1) and of the other classes of animals (39e3–6). The second motive appears to be the good of the cosmos and of human beings as creatures with mind, whose greatest good is contemplative or philosophic activity. This motive was already seen in the creation of the cosmos as a whole: the demiurge makes the cosmos self-sufficient and capable of introspective contemplation, which makes the cosmos happy. But this motive is apparent also in the case of human beings, as becomes clear in the discussion of vision. After describing the material mechanism by which vision works, Timaeus turns to explain for what purpose the god gave vision to human beings. He explains that the god gave it to human beings as a gift, which benefits them insofar as it allows them to view the planets, ultimately making possible “the

inquiry concerning the nature of the whole” (47a7). The introduction of *themis*, and its requirement that the demiurge make the world beautiful, therefore appears to signal a new attempt to explain the demiurge and his motivation for creation: perhaps the demiurge can be understood as a being who is devoted to the happiness of intelligent beings, including the cosmos itself and human beings, whose greatest good is contemplation; in other words, the demiurge makes the cosmos most beautiful in the sense of being self-sufficient and in excellent condition. If it is true that the demiurge is concerned above all with making the cosmos and human beings capable of philosophy, then this would explain why he is compelled to create all particulars in accord with the eternal paradigms: only if he does so can human beings and the cosmos, in looking at the particulars, genuinely contemplate eternal truths.

But this explanation raises a major question: how exactly are we to understand the character of the god’s devotion? That is, why exactly does the god devote himself to the good of the cosmos and human beings? This question is important because, as noted before, unless we can give a rationally comprehensible account of the god’s motivation, the god will remain mysterious to us. And if we were simply to assert that the demiurge is devoted to the cosmos and human beings, without any further explanation, it is not clear that this would satisfy the standard of a full rational explanation of the god’s motives. We can glean some insight into Timaeus’s response to this question by examining a strange line in the account of creation. After explaining how the cosmos looks at and contemplates the things inside itself, Timaeus says this: “And when the father who begot it perceived that it moved and lived, having come to be a statue/image (ἄγαλμα) of the eternal gods, he was amazed at it and [was] gladdened” (37c6–7). This comment has troubled some modern commentators, some of whom try to emend the line despite the universal agreement of the manuscripts, because nowhere else in the speech are the eternal beings referred to as gods.¹⁵ Rather, the demiurge and the stars made by the demiurge are the only things usually referred to as gods. But we can make sense of this line if we consider the fact that Timaeus here articulates not his own claims, but rather the perspective of the demiurge himself. This line therefore suggests that the demiurge views the eternal beings as gods and his own creation of particular things as the creation of images of gods like votive statues (ἄγάλματα). Further, this claim comes immediately after the discussion of the cosmos’ own contemplation of the things within itself (37a2–c5). Timaeus may thereby signal the following complicated picture of the demiurge’s motives: the demiurge views the eternal beings as gods and feels compelled to serve them; his service consists first of all in creating particular perceptible things as imitations of those gods, just as we create statues of

¹⁵ See, e.g., Taylor (1928, 184–6).

the gods we believe in (e.g. Zeus, etc.); but further, that service consists in creating other beings with mind, who are able to recognize the perceptible particulars as images of the eternal beings, and thereby contemplate the eternal beings, which constitutes a further exaltation of the demiurge's gods. If this picture is correct, it would help to explain also why it is *themis* or divine law that is originally said to compel the demiurge to put mind into the cosmos and make it beautiful.

Though Timaeus may think this is a coherent account of a rationally comprehensible god who is compelled to create the world in a stable and consistent manner, it is necessary also to examine the evidence from the world we actually live in to see whether it is consistent with such an account. This need may help to explain why, in this section of the speech, Timaeus gives a long and detailed description of the genesis of different parts of the cosmos: he is in fact attempting to see whether, on the basis of the evidence of the world we live in, we have good reason to believe that such a demiurge exists.

We can evaluate Timaeus's view of the adequacy of this attempted explanation by noting that he states the mixed model of creation – that the cosmos comes to be “having been mixed from a composition of necessity and mind” (47e5–48a1) – immediately after he finishes the discussion of the demiurge's creation of particular aspects of the cosmos, and then launches into his discussion of the elements and the receptacle. He thereby suggests that limitations of the demiurge model lead one to consider the possibility that not the demiurge alone, but the demiurge working with some matter whose nature he cannot change, is the cause of the cosmos. In discussing the mixed model, Timaeus stresses that he is speaking about our cosmos, the one we actually live in, by speaking of “*this* cosmos” (ὅδε ὁ κόσμος) and “*this* whole” (τόδε τὸ πᾶν) (48a1, 48a5), which he substitutes for the phrases he more commonly uses, simply “ὁ κόσμος” and “τὸ πᾶν.” This usage suggests that his conclusion that the demiurge must work with some preexisting elements is based on his examination of the world we actually live in. The basic reasoning seems to be that, if the demiurge were truly omnipotent, and were truly motivated by his service to the eternal beings which he sees as gods, which service took the form of aiding the cosmos and human beings philosophize, he would not have created the world as it now exists; so, if there is a demiurge with these motives who created our world, his power to create must have been limited somehow; this limitation would come from his use of some matter, which possesses some nature he cannot change, to make the world.

To understand fully why Timaeus comes to this conclusion, one would have to examine all the specific details of his creation story. But here I suggest two main possibilities that seem to come out of that account. First, the world we live in does not seem to be simply good for human beings or for their ability to philosophize. As

Timaeus himself points out, only a subset of human beings are capable of philosophy: the god's gift of the eyes has provided us with "a class of philosophy" (47b1). And even for these, the world is often a difficult and dangerous place in which to philosophize – as Socrates' trial and execution attests. Accordingly, insofar as one of the demiurge's goals was said to be the benefit of those beings with mind in their contemplative activity, one would have to say the demiurge was limited in his ability to pursue this goal. Second, if the demiurge's goal was to create particular things that mimic the eternal paradigms as much as possible, why do we live in a world of growth, decay, and destruction? Even if one says that the cosmos had to come to be, if the demiurge were omnipotent, he presumably could have created images of the paradigms and then kept them stable for the rest of eternity. His inability to do so again suggests a limitation on his power. For these, and probably for other reasons too, Timaeus is forced to say that if there is a demiurge of the kind described, he cannot be omnipotent. There must be some preexisting matter that he works with, which has a nature of its own.

This conclusion poses a major problem for the whole goal of positing a demiurge as the cause of all things. As we noted earlier, Timaeus indicates that one would want to say mind, and mind alone, is the cause of all things so as to avoid the problems that arise from the existence of the mysterious receptacle: if a rational and consistent god is the cause of all things, we can do away with the uncertainty implied by such a substratum. But now Timaeus concludes that even if there is a demiurge, he must begin his creation from some matter, like fire and the other elements, whose nature he cannot change. But if these elements exist before his creation, and they transform into one another, then they present the same problems we encountered in the discussion of the receptacle: they are based on a mysterious and potentially unstable substratum.

4 Conclusion

We may now take a synoptic view of Timaeus' two models, their limitations, and how the limitations of each model make the other more attractive. First we considered the mixed model, according to which the demiurge made the cosmos by starting from some matter, namely the elements, whose nature he could not change. But since all these elements come to be and pass away by transforming into one another, they must come to be from some bodiless, wholly imperceptible substratum, which is capable of taking on all possible perceptible characteristics. But if such a thing exists, on what grounds can we be confident that the perceptible things that come to be from it will always behave in the same manner, insofar as its manner of taking on the perceptible forms is mysterious? Perhaps there are separate eternal

forms that affect the substratum, but they would always remain mysterious to us, and their existence would remain a mere assertion. This model therefore must ultimately say that the perceptible world, the matter used by the demiurge, comes to be from the mysterious substratum in a mysterious way. These limitations lead one to consider the demiurge model: perhaps an omnipotent god creates all perceptible things, without any limitations due to matter, always in accordance with eternally consistent paradigms, such that the world is stable. But for us to be confident in this, we would have to explain, in a rationally comprehensible way, why the god would always create things consistently. The analysis of the creation myth shows that Timaeus thinks that no such omnipotent and non-mysterious god can be posited whose existence agrees with the world we actually live in. The particular failures of this model – above all the defects in the world that we live in – lead one to consider the possibility that a demiurge orders the world but is limited in this creation due to the matter he works with. But this is then the mixed model again, which itself seems to face insoluble problems. The result of Timaeus' investigations therefore seems to be *aporia*: in his view, it is not possible to articulate certain eternal, stable, and knowable first principles of the cosmos. Any account of the cosmos will therefore have to resort to some mysterious mechanism by which the perceptible things come to be, whether this mystery lies in the demiurge's motivations or in the manner in which the receptacle takes on the perceptible forms of the elements.

I conclude with a remark on how reading the *Timaeus* in this way, as an aporetic dialogue aimed at showing the limitations of different natural scientific accounts of the cosmos, helps us to understand the rest of the Platonic corpus, in particular Socrates' early development as described in the *Phaedo*. First we note Socrates' high praise for Timaeus. Before Timaeus' speech Socrates claims that, in his opinion, Timaeus has “reached the peak of all philosophy” (20a4–5). After the speech, Socrates adds to this initial praise when at the opening of the *Critias* he says Timaeus has become “wondrously esteemed (ἡδδοκίμηκεν)” as a result of his speech, and so Critias will be in need of “some altogether great sympathy” if he is going to speak (108b4–7). We are therefore led to expect some kinship between Socrates and Timaeus. In the *Phaedo*, Socrates gives an account of his own intellectual activity as a young man, which consisted first in natural scientific investigations (96a6ff.). What is remarkable is the great similarity between the two models of creation presented by Timaeus and the different stages of Socrates' own intellectual development. For his part, Socrates was first interested in materialistic accounts, followed by his excitement at and then disappointment in Anaxagoras' theory that mind is the cause of all things. These two types of account – materialist and teleological – map onto the two kinds of models presented by Timaeus: one in which the demiurge is cause of all things, and one in which there is some matter

too.¹⁶ As we saw, Timaeus found both types of model lacking. But Socrates, after engaging in these two types of inquiry, had what he called a “second sailing for the sake of the inquiry into the cause” (99c9–d1), which resulted in a new approach of investigating speeches instead of the beings themselves. The account in the *Phaedo* is challenging insofar as, though we learn Socrates was disappointed with the first two types of investigation, we do not see exactly why. I suggest that the *Timaeus* then fills the role of showing more clearly what exactly is limited in materialist and teleological accounts of the world and therefore what compelled Socrates to take a new approach to philosophy.

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¹⁶ Mason (2013) also notes the similarity between Anaxagoras' doctrine as described in the *Phaedo* and the account of the demiurge in the *Timaeus*. However, I depart from his analysis in taking the treatment of this doctrine in the *Timaeus* not as a rehabilitation but as a fuller elaboration of the problems that Socrates saw in the doctrine.

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