DIODORUS CRONUS AND THE LOGIC OF TIME

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THIS PAPER ADDRESSES A DEBATE sometimes referred to as logical fatalism. It brings together three majors ancient texts: the "fatalist argument" discussed by Aristotle in *De interpretatione* 9, the claims attributed to the Megarians in *Metaphysics* 9, and, my main concern, Diodorus Cronus's master argument reported by Epictetus in *Discourses* 2.19.[1] By "logical fatalism" I mean the claim according to which it can be shown, on the grounds of logic alone, that the course of events in the world is governed by necessity. Most contemporary efforts have focused on reconstructing the unstated reasoning that led Diodorus to his conclusion, even though such an argument—as Epictetus himself suggests—probably never existed.[2]

In this paper I argue that the efforts to formalize the argument forget its ontological nature. Diodorus was engaged neither with a problem of formal logic nor, it should be added, with a critique of freedom. Rather, the master argument must be recast, along with other extant fragments, as part of Diodorus's critical engagement with Aristotle's ontology. More specifically, Diodorus does away with

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[1] Other important sources are found in Sextus Empiricus's *Adv. Math.* X, Cicero's *De fato*, and Boethius's *Commentary on De Interpretatione.*

[2] The main contributors are Arthur Prior, *Time and Modality* (Oxford: Oxford University Press, 1957); Robert Blanché, "Sur l'interpretation du κυρεύων λόγος," *Revue Philosophique de la France et de l'Etranger* 155 (1965): 133–49; Frederick S. Michael, "What Is the Master Argument of Diodorus Cronus?" *American Philosophical Quarterly* 13, no. 3 (July 1976): 229–35; R. McKirahan, "Diodorus and Prior and the Master Argument," *Synthese* 42, no. 2 (October 1979): 223–53; Michael J. White, "Facets of Megarian Fatalism: Aristotelian Criticisms and the Stoic Doctrine of Eternal Recurrence," *Canadian Journal of Philosophy* 10, no. 2 (June 1980): 189–206; Richard Gaskin, *The Sea Battle and the Master Argument: Aristotle and Diodorus Cronus on the Metaphysics of the Future* (Berlin: Walter de Gruyter, 1995); Susanne Bobzien, *Determinism and Freedom in Stoic Philosophy* (Oxford: Oxford University Press, 1998); Susanne Bobzien, "The Megarics," in *The Cambridge History of Hellenistic Philosophy*, ed. Keimpe Algra, Jonathan Barnes et al. (Cambridge: Cambridge University Press, 1999), 83–92; Hermann Weidemann, "Aristotle, the Megarics, and Diodorus Cronus on the Notion of Possibility," *American Philosophical Quarterly* 45, no. 2 (April 2008): 131–48.

Aristotle's δύναμις understood as a power oriented toward being which nevertheless retains the possibility of not being. It proclaims that possibilities that fail to actualize are simply nothing. The debate opens fundamental ontological questions: Can there be a coherent concept of being without the assumption of immutability? In what sense of being can we say that there *are* unactualized possibilities? Aren't determinacy and the corresponding exclusion of alternative possibilities necessary conditions for being and being true?

Even though, according to Diodorus, nonactualized possibilities are devoid of any ontological weight, his so-called fatalism doesn't assume that the future course of events is already established. The world of temporal becoming may stand in opposition to eternity, but it is not incompatible with necessity. I argue that Diodorus's main contribution resides in the invention of an ontologico-temporal concept of possibility. While Aristotle finds in present activities and actual performances the utmost manifestation of being, Diodorus's ontology privileges the past, for only what has been is fully complete and achieved; it is the finished statue, rather than the actual process of chiseling, that truly is. As for the future, since all that what will be is destined to become past, it can never harbor possibilities that will not obtain. Thus, any futural possibility that does not actualize is neither futural nor even possible.

To support this interpretation, I will first discuss some difficulties associated with the concept of δύναμις. I will then examine the master argument itself in order to show that it is not reducible to Diodorus's teaching on hypothetical implication and modalities but depends on his conception of time and being. Finally, in section III, I explore Diodorus's ontology in light of a conception of time that envisions the future *sub specie praeteriti* and makes of the past the time of truth. This, however, contains an aporia which, I submit, prevents Diodorus from offering a viable alternative to Aristotle's δύναμις.

I

The Ontological Ambivalence of δύναμις. It is said that Diodorus Cronus's master argument (κυρεύων λόγος) was a famed topic of discussion among ancient philosophers. Yet what it is supposed to

establish remains disputed. Even the meaning of its enduring name is uncertain.[3] It is often read, along with *De interpretatione* 9, as an argument about fatalism and free will, and there is no doubt that it raises far-reaching moral questions. Yet the practical import is mostly stressed by its opponents who didn't fail to protest its "absurd consequences." Thus, as Cicero argues, should the Megarians be correct our existence would be ruled by an inflexible fate:

> while the statement: "This man will die of this disease" is true in the case of a man who is suffering from a deadly disease, if this same statement is made truly in the case of a man in whom so violent an attack of the disease is not manifest, nonetheless it will happen. It follows that no change from true to false can occur even in the case of the future. For "Scipio will die" has such strength that although it is a statement about the future it cannot be converted into a falsehood, for it is a statement about a human being who must inevitably die. If the form of the statement had been "Scipio will die by violence in his bedroom at night," the statement in that form would have been a true one, for it would have been a statement that a thing was going to happen that was going to happen, and that it was going to happen is a necessary inference from the fact that it did happen.[4]

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[3] Was it called "master argument" because it was the most impressive and hardest Megarian paradox? As with all trilemmas, it is open to various resolutions. Diodorus's solution (for which he gave no reason beyond its plausibility) is simply one among others. Furthermore, in terms of difficulty and reputation, the liar paradox seems at least as deserving of the title. The epithet "master" has also been interpreted as suggesting that the argument denies freedom and places human existence under the yoke of an unshakable necessity which "masters" our fate. Pierre-Maxime Schuhl, *Le Dominateur et les possibles* (Paris: Vrin, 1960), 8–10. Yet, at best, this account is derived; grammatically κυρεύων can only qualify λόγος. According to Robert Muller, *Les Mégariques*, *Fragments et Témoignages* (Paris: Vrin, 1985), 158, and Gaskin, *The Sea Battle*, 222–24, the name derives from the particular example of Cypselus's rule in Corinth (mentioned by Cicero in *De fato* VII, 13). This too is unlikely. Besides the fact that the example doesn't appear in any other fragment, Cicero places it in the mouth of Diodorus's opponent who declares that the rule of the tyrant was not necessary, even if it had been predicted by the oracle a thousand years ago. Finally, it has been interpreted as suggesting that (in the eyes of its proponents at least) it successfully defeated Aristotle's conception of δύναμις. While I do not believe that the argument defeats Aristotle, this seems to me the most plausible interpretation of its name.

[4] Cicero, *De fato*, IX, 17–18. Translation from *Cicero*, vol. 4, trans. Harris Rackham (Cambridge, Mass.: Harvard University Press, 1982), 211–13. Translation revised.

Thus, a future statement about Scipio that (a) stipulates the particular condition of his death and (b) is not grounded on the present observation of his condition (as in seeing now that Scipio is afflicted with a deadly disease) would be no less necessary than a universal truth about the common lot of human beings. This explicitly contradicts *De interpretatione* 18a28–33 where Aristotle maintained, on the contrary, a distinction between "particulars that are going to be" (for instance, a prediction concerning Scipio's particular condition of death) and the case of a universal taken universally (for instance, "man is a mortal animal").

Yet nothing suggests that the purpose of the master argument was to demonstrate fatalism. In fact, what we usually understand by "fatalism" doesn't seem to be implied. It is significant that Cicero doesn't call it the "master argument" but mentions that it was known by the name: "*Peri Dunaton*, in which the meaning of the term 'possible' is investigated."[5] Even though the expression "master argument" remains in use, "On the Possible" could be a more accurate title. A proponent of Diodorus's argument need not interpret events as signs, as many a fatalist does; one need not assume that a plan is secretly woven in the fabric of reality or that there is a reason for everything that happens. Furthermore, the argument doesn't depend on a commitment to any particular conception of causality. Diodorus doesn't stipulate how, why, or through which causes the future will occur; he is neutral as to whether we should admit final or efficient causes or some combination of both; he advocates neither divine predestination nor physical determinism. The necessity Diodorus proclaims is not a decree that welds events to an implacable verdict. Rather, its primary concern is to refute a conception of potency understood as a power oriented toward the future that nevertheless retains the possibility of not actualizing, that is, the very ambivalence that Aristotle placed at the heart of δύναμις when he declared that "a thing may be capable of being something and yet not be it, or it may be capable of not being something [else] and yet be it."[6] In that respect, Diodorus's thesis would perhaps be more accurately described as actualism rather than fatalism.

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[5] Cicero, *De fato*, IX, 17.
[6] *Metaphysics* 9.3.1047a21–22.

Today, we often assume that actuality and possibility are modalities of judgments, taking for granted the shift that occurred with modernity when, as Heidegger observed in *Nietzsche* 1:

> the determination of being, *potentia* and *actus*, slip into the vicinity of the basic forms of thought and judgment. Possibility, actuality, and necessity along with them become modalities of being and of thinking. Since then the doctrine of modalities [became] a component part of every doctrine of the categories.[7]

Thus, a statement expresses actuality when it reports some fact, whereas possibility connotes what is counterfactual (or even fictional).

The first difficulty is of a linguistic nature. It is well known that the terms δύνασθαι, δύναμις, and δυνατόν are not univocal. Depending on the context they may designate a disposition, a capacity, a power, a tendency, a license, or a skill. To this Aristotle adds two further distinctions, between (a) a rational and an irrational potency and (b) an active and a passive one. Despite the equivocation, however, Aristotle identifies the "chief sense" of δύναμις as the "principle of change in something else or in itself *qua* something else."[8] The link with motion is further confirmed by the fact that motion is defined as "the actuality of that which is in potency, as such."[9] Thus, motion is potency at work; it is the fulfillment of a "not yet" since it actualizes not the form that motion strives to accomplish but potency as such. Motion is a doubling of potency: it is achieved when it remains in potency, not when it results in a final form.

The issue is not to demonstrate the existence of motion (which is phenomenologically indisputable) but to do so without violating the Parmenidean principle (which is conceptually indisputable). This leads Aristotle to extend ontology beyond the consideration of actual entities and activities. When he claims that motion "is," Aristotle doesn't declare that it is simply observable but that is has a *nature*. As Rémi Brague has argued, Aristotle's definition of motion is not construed for the sake of "demonstrating" that it exists (this would be better done by induction) but to show that "the manifest reality of motion possesses a consistency of its own. . . . [I]f Aristotle has to display this consistency, this is so

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[7] Martin Heidegger, *Nietzsche*, vol. 1, trans. David Farrell Krell (New York: Harper & Row, 1979), 64.

[8] *Metaphysics* 9.1.1046a12.

[9] *Physics* 3.1.201a11.

owing to its having been denied—above all by Parmenides."[10] But how can what constantly ceases to be what it was to become but is not yet harbor permanence, consistency, and identity? So long as they are moving, bodies in motion do not coincide with themselves. Even mobiles that change only their location but (seemingly) retain their substantial identity are not, on closer examination, immune to the paradox; as Massumi puts it: "[a body in motion] coincides with its own transition: its own variation. The range of variations it can be implicated in is not present in any given moment, much less in any position it passes through. In motion, a body is in an immediate unfolding relation to its own nonpresent potential to vary."[11] To be in motion is to belong simultaneously to what is no more and what is not yet; it is to occupy a space between potency and actuality. Doesn't motion then violate the Parmenidean principle—being is, nonbeing is not?

Aristotle's solution proposes that being is not reducible to actuality but encompasses potentiality. It is difficult to see how an account of motion wouldn't presuppose δύναμις in some form, since to deny it would entail that everything is either actual or unable to be actual, thus, that nothing can be in the process of actualizing.

> If, therefore, it is impossible to possess technical skills without having at some time learned and mastered them and subsequently not to possess them without having lost them at some time either through forgetting or misfortune or through time (for certainly the objects cannot be destroyed since they always exist), whenever someone stops building, he will no longer know how to build; but then, when he starts building again, how will he have mastered that knowledge?[12]

Experience shows the opposite: change is real; activities do not suddenly burst out of nothing; skills must be learned first, and when they are not exercised, they are not *ipso facto* lost. If it weren't the case, the ability to resume an interrupted action would be miraculous.

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[10] Rémi Brague, "Aristotle's Definition of Motion and its Ontological Implications," *Graduate Faculty Philosophy Journal* 13, no. 2 (1990): 3.

[11] Brian Massumi, *Parables for the Virtual, Movement, Affect, Sensation* (Durham, N.C.: Duke University Press, 2002), 4.

[12] *Metaphysics* 9.3.1046b36–1047a4.

While the connection with motion indicates the chief sense of the term, Aristotle declares it "not useful" for the present inquiry.[13] This doesn't mean that what Aristotle is seeking will be found outside motion, but rather that it requires a deepening of the "chief" sense. Yet it proves elusive, and Aristotle, instead of providing a definition, invites us to grasp it by analogy.[14]

> What builds is to what can build, as someone waking is to someone sleeping, as someone seeing is to a sighted person with his eyes closed, as that which has been shaped out of some matter is to the matter from which it has been shaped, and as what has been finished off to what hasn't been formed. Of these let actuality be defined by one part and what is potential by the other.[15]

If being is not limited to the actually present entities and their properties, nonbeing must likewise not be limited to unqualified nothingness.[16] As Stanley Rosen observed: "Nonbeing must be a form of being. Nonbeing cannot be found in *energeia*; complete presence cannot be marked by partial absence. It appears, therefore, that nonbeing must be in *dunamis*."[17] Borrowing from Duns Scotus's terminology, we can distinguish *nihil absolutum*—the absolute nothingness prohibited by Parmenides—from *nihil relativum*—the nonbeing of absence, negation, and privation without which there couldn't be change, difference, or plurality.[18] While the former is an

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[13] This is surprising since the purpose of this section is to exhibit the fundamental sense of δύναμις. Heidegger attempts to resolve the difficulty by interpreting κυρίως as "most common." This translation, however, is not justified. In fact, as Boutot observed, in another lecture course in which he also refers to book 9 (==*Vom Wesen der menschischen Freiheit*, *G. A.* Bd. 31, 84–85[PLS PROVIDE FULL BIBLIOGRAPHICAL DETAIL]==) Heidegger declares the opposite: κυρίως does not refer to the frequency of a term but to its "proper and authentic signification." Alain Boutot, "Heidegger et les Mégariques," in *Socrate et les Socratiques*, ed. G. Romeyer-Dherbey and J. B. Gourinat (Paris: Vrin, 2001), 438.

[14] In a similar fashion, Aristotle mentions in the *Physics* a difficulty that hampers his project from the beginning: How does one define (ὁρίζειν) the indefinite (ἀόριστον)? *Physics* 4.4.211b24–28.

[15] *Metaphysics* 9.6.1048b1–3.

[16] What Plato in the *Sophist* 237b refers to as τὸ μηδαμῶς ὄν (that which in no way is/what is not at all).

[17] Stanley Rosen, "La critique Aristotélicienne des Mégariques," *Les Etudes Philosophiques* 3 (1982): 310.

[18] *In Lib. Sentent.* I, d. 43.

ontological and conceptual impossibility, *nihil relativum* can be compatible with being.

Yet, the concept of δύναμις raises many conceptual difficulties. First, consider Aristotle's own example in *Metaphysics* 9.3:

> There are some, such as the Megarians, who say that a thing only has potency when it is active (ἐνεργῇ) and that when it is not active it has no potency. They say, for instance, that a man who is not building cannot build but only the man who is building and at the moment when he is building.[19]

Aristotle regards this view as absurd. Yet it seems to agree with his own definition; if motion is "the actuality of that which potentially is, as such," [20] then δύναμις is most manifest when it is fully active. Furthermore, Aristotle himself admits that unless an appropriate patient is also present, the agent "will not be able to act according to its capacity."[21] If so, as Nicholai Hartmann objected, although the claim "Dio can build a house" identifies Dio as one who has a potency, it still remains that without land, capital, workers, building material, tools, and so forth, the builder is de facto unable to build anything. These, of course, are external conditions, but they are necessary nonetheless. In that case δύναμις would rather express a "partial possibility" (*Teilmöglichkeit*)—an incomplete and therefore powerless ability, not a total one (*Totalmöglichkeit*)—that is, a possibility that is such that all the conditions for its actualization are fulfilled.

> Ontologically speaking, the possibility to build consists precisely in an interrelation of external and internal conditions and in such a way that, in truth, a possibility occurs only when both kinds of conditions are simultaneously fulfilled.[22]

While not insurmountable, Hartmann's objection highlights the difficulty of claiming that a being has a potency when it is actually incapable of actualizing it on its own.

Second, δύναμις designates power and capacity but also indeterminacy and indecision. The material component of a hylomorphic substance, for instance, retains the possibility of

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[19] *Metaphysics* 9.2.1046b28–31.
[20] *Physics* 3.1.201a11.
[21] *Metaphysics* 9.6.1048a16.
[22] Nicolai Hartmann, "Der Megarische und der Aristotelische Möglichkeitsbegrieff. Ein Beitrag zur Geschichte der Ontologischen Modalitäts Problems," in *Kleinere Schriften*, Bd. 2 (Berlin: Walter de Gruyter, 1957), 94.

actualizing some other forms. The bronze of this dagger could be melted to smith a bracelet. Potentiality introduces alterity; it shows that actually present beings are constantly open to being otherwise than they are. Yet, these apparently contrary characteristics (power and indeterminacy, capacity and indecision) must be held together. The power to accomplish something, insofar as it is a power, holds within itself the possibility of not being deployed.[23]

Finally, what and where are these possibilities before they actualize? Is, for instance, the potency to be a statue already "in" the block of marble along with its other properties (its size, color, weight)? This is ruled out. Aristotle's ontology distinguishes being as articulated in the categories from being qua potency and actuality, and doesn't reduce the second to the first one. As Brague puts it:

> the buildable will appear as such only *in between* the point of departure (the material as stone or bronze) and the point of arrival (the house or the statue), and it will be neither of these two points. This in-between is motion.[24]

Does the world, in addition to the actual entities it contains, also harbor a latent reserve of beings? If so, the same entity would conceal infinitely many potential beings. To admit such an indefinite plurality that can never actually be seen and may never be realized is to open the door to an indeterminateness that threatens the identity of substances. This populates ontology with an infinite number of invisible and intangible potential beings and violates the principle of parsimony according to which entities must not be multiplied beyond necessity (*entia non sunt multiplicanda praeter necessitatem*).

No doubt, an a fortiori inference applies from actuality to possibility (whatever is actual is a fortiori possible) and it seems to even extend into the past (whatever is now actual was possible before it happened). Yet, it is not obvious that the possibilities that are not and never will be should still be granted being.

These are some of the reasons why Diodorus (and his Megarian predecessors) concluded that possibilities that never occur or

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[23] In a prephilosophical (and military) sense of the term, Xenophon uses δύναμις to describe pedestrian, equestrian, and naval forces (*Anabasis* 1.3.12). These "forces" are fully themselves when they are held on reserve at the general's disposal. To command these forces is to be capable of using them at any point.

[24] Brague, *Aristotle's Definition of Motion*, 12. Emphasis added.

capacities that never produce anything are simply nothing. What then is a real possibility? What else but an actualized possibility? Thus, Diodorus concludes that being is actuality or is not. To grant being to unactualized potentialities would ultimately amount to granting being to nonbeing. On a Megarian interpretation, Parmenides' injunction "being is, nonbeing is not" entails the identification of being with actuality and the rejection of any shadowy virtuality that would posit indeterminacy at the heart of being.[25]

II

The Master Argument. The goal of this section is to examine the master argument in order to establish (a) how it is related to the Megarian teachings on hypothetical implication and modalities but cannot be reduced to them, and (b) that it depends on a specific metaphysical interpretation of time. The text is preserved in Epictetus's *Discourses* 2.19, where it appears in the form of a trilemma, that is, a dilemma composed of three claims, each one seemingly true (or at least plausible), but such that their juxtaposition yields a contradiction:

> The master argument appears to have been proposed on premises of this sort: since there is a mutual contradiction among the three following propositions: (a) all past truth is necessary, (b) the impossible doesn't follow the possible (τῷ δυνατῷ ἀδύνατον μὴ ἀκολουθεῖν) and (c) the possible is what is neither true nor ever will be, Diodorus, realizing the contradiction, appealed to the credibility of the first two to establish that *that which is neither true nor ever will be is not possible* (τοῦ μηδὲν εἶναι δυνατόν, ὃ οὔτ᾽ ἔστιν ἀληθὲς οὔτ᾽ ἔσται).[26]

It seems likely that in the *Metaphysics* Aristotle examined a claim made by some unnamed Megarian and that Diodorus's trilemma is a

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[25] It is not obvious at all that Parmenides identified being with actuality (he may very well not have had any concept of actuality). Yet, frag. 6.1–3 of Parmenides' *Poem* have often been read as making an inference from possibility to necessity (the possible must be) and from nonexistence to impossibility (what is not cannot be). See Alexander Mourelatos, *The Route of Parmenides* (Las Vegas: Parmenides Publishing, 2008); and Jonathan Barnes, *The Presocratic Philosophers* (New York: Routledge ,1983).

[26] Epictetus, *Discourses*, trans. William Abbott Oldfather (Cambridge, Mass.: Harvard University Press, 1925), 359. Translation revised.

subsequent response to Aristotle's objections, for, as Schull observed,[27] the trilemma is entirely composed of Aristotelian claims: the necessity of the past is stated in *Nicomachean Ethics* 6.2.1139b7–9; the principle according to which if something is possible then nothing impossible should follow from it is stated in *Metaphysics* 9.41047b10–11; so is the claim "nothing prevents a thing which is capable of being or coming to be from neither being nor being likely ever to be."[28]

Three things can be observed from the outset: First, the argument posits a universal principle; it applies to entities, events, actions, states of affairs, properties, and so forth. Second, (*pace* Gaskin) "truth" and "being true" refer to statements as well as to the very objects denoted by these statements. It is a consequence of the correspondence theory that truth posits necessity (if it is true that p, it cannot be that ~p; thus Tp ⊃ □p).[29] Finally, the conclusion affirms the principle of plenitude: the real contains all that is possible and, conversely, all that is possible must, at some point of time, be realized.[30] Thus, a future actuality, rather than the continuity of a nonmanifest potency, is enough to warrant possibility.

Usually, the solution of a trilemma consists in rejecting one of the premises. In this case, Diodorus abandoned the third one, (c): "the possible is what is neither true nor ever will be," and replaced it with (c'): "that which is neither true nor ever will be is not possible," which can be rephrased in the affirmative as: "the possible is either what is or what will be." Thus, instead of identifying possibility with actuality, as the fatalist portrayed in *Metaphysics* 9 did, Diodorus posits that the possible coincides either with a present or a future. This solution

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[27] Schull, *Le Dominateur*, 34.

[28] *Metaphysics* 9.4.1047b8–9.

[29] Gaskin assumes a mutually exclusive dichotomy of logos and being and claims that "the modalities are attached to linguistic items . . . *rather than* states of affairs." Gaskin, *The Sea Battle*, 243 n. 3, emphasis added. This not only is not justified by the text, but it conflicts with Gaskin's own understanding of "necessity" in the first premise as meaning that "there is nothing anyone can do about the way the past was" as well as his interpretation of δυνατόν as "contingent rather than possible." Gaskin, *The Sea Battle*, 282, 286.

[30] As Bobzien puts it: "Diodorus's definition of that which is possible can be split into two distinct claims: first that everything that is or will be true is possible, and second, that everything that is possible either is or will be true." Bobzien, *Determinism and Freedom*, 88.

wouldn't abolish δύναμις but would recast it as a futural actuality.[31] As for what is neither true nor ever will be, it is not possible at any time. Diodorus doesn't give any reason in support of his solution beyond the fact that the first two premises seem "credible" (πιθανότης).

Future events appear to be possible in the sense that their occurrence or nonoccurrence seem to be in a state of equilibrium; so long as they are undecided, one doesn't cancel the other. But Diodorus's argument is not concerned with the way things appear to us; the future strictly designates what will be; it corresponds to the segment of actuality which, relative to the present, hasn't yet occurred. In that sense, undecidability is not a property of the future itself but a mark of our ignorance. What will be is no less closed than what has been; accordingly, the future doesn't have any special ontological status.

Depending on when they are stated and on the temporal location of their referent, the truth value of many statements (for example, "Today is Monday" or "Lauryn visited Tokyo") will change.[32] Many commentators[33] have proposed to relate the master argument to Megarian propositional logic and Diodorus's account of modalities.[34] As with

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[31] Heidegger stresses an important problem to which we will return in the last section. In Aristotle's formulation, actuality is activity (one is fully a builder when one is actually engaged in the activity of building); to be actual is to be at work. The Megarians, however, wouldn't have accepted such a definition, which assumes the coincidence of actuality and motion. Heidegger notes that the Megarians did not understand actuality as accomplishment (thus as movement or process) but as "being accomplished." (*GA* Bd. 33, 172) [FULL CITATION?]

[32] This introduces some ambiguity in several respects; as Gerhard Seel observed: "1) it is ambiguous because of the relativity regarding the time of the speech-act. Since in written formulations of the sentences the speech-act is not identified, written sentences are in principle ambiguous in this respect; 2) the past and future inflections of verbs contain—because of the relativity regarding what is in each case the present time of the speech-act—not one, but two indications of time, the second of which concerns not a point of time but a period of time; 3) because of the ambiguity of the copula, it is undecided whether these time indications represent a temporal characterization of the state of affairs itself or whether they delimit the time at which the state of affairs is the case." Gerhard Seel, *Ammonius and the Seabattle, Texts, Commentary, and Essays* (Berlin: Walter de Gruyter, 2001), 5–6.

[33] Blanché, *Sur L'Interpretation*, 138–41; Bobzien, *The Megarics*, 102–08.

[34] The master argument must, of course, agree with Diodorus's teaching on logic (although this raises some difficulties). Whether it can be reduced to it, however, is another issue. A hypothetical implication (συνημμένον) links two unrelated propositions *p* and *q* (for example, "it is day" and "I speak"). The

Stoic logic, a Megarian conditional doesn't require any connection between antecedent and consequent. It simply designates any implication in the broadest sense that is open to a truth-functional interpretation. Thanks to Sextus Empiricus we know of a controversy between Diodorus and his student Philo:

> Philo claimed that the hypothetical is true when it doesn't begin with what is true to conclude to what is false; thus there is, according to him, three ways for a hypothetical to be true [TT, FT, FF] and one to be false [TF].[35]

Philo's conditional (which is analogous to the modern material implication) can be represented in the following manner:

p	q	p ⊃ q
T	T	T
T	F	F
F	T	T
F	F	T

The consequence, however, is disconcerting. To take Sextus's example: "if it is night, it is day," will be false if it is night [TF] but it would have to be true if it is day [FT]. In response to this difficulty, Diodorus corrected Philo by rephrasing the rule of implication in the following manner: "an implication is true which *neither admitted nor admits* of beginning with what is true to conclude to what is false."[36] Philo would

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master argument, however, does not link dissimilar and simultaneous propositions but bears on the connection between what was, what is, what will be, and (as we shall see) what will be past (what will have been) in a temporal continuum. *Contra* Michael, *What is the Master Argument?* 232; and Muller, *Les Mégariques*, 144.

[35] Sextus, *Adv. Math.* VIII, 113.

[36] Sextus, *Adv. Math.* VIII, 115. It is important to note that Philo and Diodorus use ἐνδέχεσθαι (to accept, admit, grant) in their accounts of the rules of implication (hence my translation by "admits" rather than "is possible"). The argument about conditional is concerned with what follows

consider that the implication "if it is day, I speak" is true if it is actually day and I am actually speaking. Diodorus, on the contrary, sees it as false because it is possible that the antecedent be true but the consequent false, "since before I began to speak the antecedent 'it is day' was true, but the consequent 'I speak' was false."[37] Thus, Diodorus's solution corrects Philo by taking into account the consideration of modality and time.[38] That is, modalities can be translated in the temporal equivalents of "never" (for the impossible), "always" (for necessity), and "sometime" (for possibilities). The concern that guides Diodorus is whether the truth-value is mutable or immutable when the proposition is specified by a date. As Bobzien observes, "for Diodorus a conditional cannot change its truth value. If it is true (false) at one time it is true (false) at all times."[39] The hypothetical $p \supset q$ is valid if there is no time t in which p could be true and q false. An inference which at times obtains and at others doesn't is treated as a false inference.

This means that modalities can be expressed in terms of temporal frequency. According to Boethius, "Diodorus defines the possible as what is or what will be; the impossible as what is false and will not be true; the necessary as what is true and will not be false; and the non-necessary as what is already false or will be."[40] Necessity expresses what is temporally always and impossibility what is never at any point of time. Truth and falsity are determined by temporal occurrences and modalities by temporal frequency. This produces a modal square that makes room for what is possible (redefined as what is true or will be true) and for what is not necessary (redefined as what is already false or will be false) and can be represented in the following manner (using F to denote the future):[41]

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from whatever is posited; it has no bearing on a metaphysical critique of Aristotle's δύναμις.

[37] Sextus, *Adv. Math.* VIII, 116. This solution arises from a concern to avoid the paradoxes of material implication; in that respect it is akin to the strict conditional in modern logic.

[38] Blanché, *Sur l'Interprétation*, 140; Bobzien, *The Megarics*, 85.

[39] Bobzien *The Megarics*, 85.

[40] *In Arist. De int.* 3.9.234.22–25. Translation from Boethius, *On Aristotle on Interpretation* 1–3, trans. Andrew Smith (London: Bloomsbury Academy, 2010), 141. Translation modified.

[41] Joseph M. Bochenski, *Ancient Formal Logic* (Amsterdam: North Holland Publishing, 1951), 86; Blanché, *Sur L'Interprétation*, 142.

Necessity: T $\wedge$ FT	Impossibility: F $\wedge$ FF
Possibility: T $\vee$ FT	Nonnecessary: F $\vee$ FF

Yet does Diodorus's doctrine on implication and modalities truly preserve contingency and possibility? One could suspect that even though possibility and nonecessity are now construed as intermittent truths, the solution conceals what, in fact, turns out to be a bleak alternative of necessity or impossibility. Three problems arise at this juncture:

(1) How can Diodorus make room for a modal category of possibility as something that would supposedly be distinct from necessity, when his argument affirms that whatever will be must be? Although an event may occur only once, it nevertheless cannot be otherwise. Thus, in a sense, it is both possible (since it doesn't always happen) and necessary (since it has to happen). Although it occurred only once, prior to 49 B.C. "Caesar will cross the Rubicon" was a future truth (which is not the same as being a truth about the future),[42] and it will be true forever afterward. Even propositions that are sometimes true but not always (for instance, "it is day") must fall under this rule. In other words, so long as they are specified, indexical expressions can be translated into atemporal truths.

Bobzien has attempted to exonerate Diodorus from the accusation of construing an empty concept of possibility by declaring that

> it is not the case that for Diodorus every proposition is either necessary (and possible) or impossible (and non-necessary). There

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[42] Should we align the master argument with the fatalist position exposed in *De interpretatione* 9? Bobzien thinks so since in her reconstruction she adds the premise "if something is the case now, then it has always been the case that it will be the case," which she borrows from *De interpretatione* 9. Bobzien, *The Megarics*, 91. If so, we should say that truth was already determined before the occurrence of the corresponding state of affairs. By talking of "future truth," on the contrary, I am suggesting that the proposition becomes true only with the occurrence of the event. I think this second version is the correct one, and it avoids the connotation of a foreordained history. There is, furthermore, another crucial issue that I reserve for the next section: the time of truth is the past.

are propositions that are contingent in the sense of being both possible and non-necessary, namely all those which will change their truth values at some future time. The proposition "it is day" is such a case.[43]

Yet this doesn't show that the so-called nonnecessary assertions are truly contingent; it simply shows that they are intermittent. Intermittence, however, even if it admits of chance and randomness at the causal level, cannot save contingency since at each instant nothing other than what must be can be.[44]

(2) Temporal frequency by itself is not enough to establish necessity and impossibility. The fact that some things never happen doesn't prove that they are impossible; just as always seeing things happen in the same manner doesn't prove that they are necessary. In order to establish necessity, what needs to be demonstrated is that other possibilities (those that do not actualize) are truly prevented from happening; but this is something the modal table alone cannot do.

(3) Any attempt to treat the argument as an application of Megarian propositional logic[45] assumes a modern representational interpretation of possibility. In so doing, it ignores the metaphysical question raised by the concept of δύναμις, that is, the existence of an ambivalent power to be that is simultaneously a power not to be. Most of us believe that many things that did not occur could nevertheless have occurred. We think so because we do not see any contradiction in their occurrence; they are conceptually consistent, even though they didn't happen. A Diodorean impossibility, however, is not a matter of inconsistency. In most instances there is nothing logically impossible in my doing something else (or nothing at all) rather than what I am doing, and

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[43] Bobzien, *The Megarics*, 88.

[44] Bobzien maintains that Diodorus doesn't preclude contingency even though "it doesn't follow that because of this his modal theory is also indeterministic." Bobzien, *Determinism and Freedom*, 105. She doesn't explain, however, how determinism (which, by definition, excludes the possibility of being otherwise) is compatible with contingency and seems to assume that contingency is identical with (or at least sufficiently captured by) temporal intermittence. Yet, this is the very issue at the center of the debate; "contingency" translates Aristotle's ὁπότερ' ἔτυχη, which literally refers to what is "in-either-of-two-ways, as-it-chances" (in Boethius's Latin, *utrumlibet*). It designates an indeterminate openness to alternative—which is exactly what Diodorus denies.

[45] Michael, *What is the Master Argument?*; McKirahan, *Diodorus and Prior*; Bobzien, *The Megarics*; and Bobzien, *Determinism and Freedom*.

Diodorus doesn't deny our imagination's ability to entertain all sorts of counterfactual scenarios and alternative histories. The concept of δύναμις we are dealing with, however, belongs to the ontological-temporal plane, not the logico-semantic plane where "possible" means conceivable and where the impossible is determined by contradiction (square circles, married bachelors, or time-travel paradoxes). The kind of impossibility that is defined by the internal contradiction of incompatible features (incompossibility) treats as possible whatever is conceivable so long as no contradiction results from the combination of various components. The issue raised by the master argument, however, concerns real futural possibilities. The question is not whether we can conceive other universes but whether we should grant being to possibilities that will not actualize. Alexander of Aphrodisias's examples clearly demonstrate this point:

> Diodorus claimed that that alone is possible which either is or at all events will be. On his view, for me to be in Corinth was possible if I was already in Corinth or if I were at all events going to be there; if I were not to be there, then it was not possible either. And it was possible for a child to become literate if he was at all events going to become so. Diodorus puts forwards the master argument in order to establish this principle.[46]

Diodorus's contribution resides in the creation of an ontologico-temporal concept of possibility and impossibility. Nonactualized possibilities are impossible because they are achronic; there is no time in which it could occur. On an actualist view, no alternative to what is can occur at the time it occurs. Temporal necessity posits that at each instant, things are what they are and it is too late for them to be otherwise. This thesis appeals to an atomistic conception of time that Diodorus probably developed in the context of a critical engagement with Aristotle's *Physics*. Diodorus is credited for having coined the term "bodies without parts (ἀμερῆ)" to describe the absolute simplicity of elemental beings and avoid the infinite divisibility of matter, space, and time.[47] Simplicius reports that for Diodorus not only bodies but

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[46] *In An. Pr.* 183.36–184.6. Translation from Alexander of Aphrodisias, *On Aristotle's Prior Analytics*, *1.14–22*, trans. Ian Muller and Joshua Gould (London: Duckworth, 1999).

[47] At *De sensu* 445b13–20 Aristotle mentions (critically) the idea that the ultimate components of matter would be imperceptible corpuscles endowed only with the mathematical reality of a geometric point. It may be surprising

"instants too are without parts, and so are units, so that even if some declare that there are bodies without parts (as Diodorus thought) the same assertions would have to be made about instants."[48] Thus, a body without parts occupies a space without parts in an instant-without-parts.

In the Physics Aristotle confronted a famous aporia: if the past is no more and the future not yet, the whole reality of time must depend on the present instant. But how can we make sense of this? If it wholly coincides with itself, the temporal flow is broken and instants become fixed and immutable. If it doesn't, intermediate instants can always occur between the prior and the posterior ad infinitum, and we fall into Zeno's paradoxes. Aristotle concluded that a continuum cannot be composed of actually indivisible units. Rather, instants must be grasped both as repetition and difference ("the now is in a way the same, in another sense not; insofar as it is always somewhere else, it is different"[49]). As structural, the now is always the same; as prior and posterior, it is always different. Diodorus, on the contrary, pursued the first branch of the dilemma. As a consequence, he accepted the discontinuity of time, the absolute coincidence of the instant with itself, and of being with punctual actuality.

> A body without parts [ἀμερῆ] must be contained in a place without parts, and for this reason it cannot move, neither in it (for it fills it up totally and what moves requires a space larger than itself), nor in the

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to find this doctrine here since the negation of the sensible world was a Megarian hallmark (at least according to Plato's portrayal of the—presumably Megarian—"friends of the forms"). Muller has suggested two hypotheses: (a) The bodies without parts could represent a theoretical model rather than a material reality, or (b) Diodorus could have maintained that these bodies have reality but that the physical world they compose, because of its diversity and mutability, lacks substantial reality. Muller, *Les Mégariques*, 134. Muller embraces the second interpretation. I am not convinced, however, that Diodorus is committed to a form of materialist atomism. It seems likely that, in the spirit of Megarian paradoxes, the "bodies without parts" designate a branch of a dilemma: either we deny their existence, in which case we encounter the paradox of infinite division, or we assume them, in which case movement is impossible.

[48] *In Phy.* 926, 19–21. Translation from Simplicius, *On Aristotle Physics 6*, trans. David Konstan (London: Bloomsbury, 1989), 18. Translation modified.

[49] *Physics* 4.11.219b10.

place where it isn't, since it isn't yet there to move. Consequently, nothing is in motion.[50]

In agreement with the Eleatic exclusion of becoming from being, Diodorus appeals to the ultimate spatiotemporal indivisibility of the ἀμερῆ to reject motion. Unactualized possibilities didn't occur in the past, cannot occur in the present, and will not occur in the future.

Yet is this enough to rule out alternative courses of events? Wiggins envisions the following counterscenario: suppose that the kingdom is lost for want of a battle that is lost for want of a message that is lost for want of a rider that is lost for want of a horse, and so forth. One could still argue that although

> whatever the defenders do or achieve or fail to achieve by way of preparation at instant t_3, it is necessary at t_3 for them to achieve or fail to achieve at t_3. But this doesn't count against the fact that they *could have done* differently and better at t_3. And there is nothing comical or irrelevant in stressing this ability.[51]

Wiggins's objection is that even though at each instant what is cannot be otherwise (thus, at t_3 an alternative wasn't possible), the sequence as a whole could still have been different (it would have been possible for the army to prepare for battle differently such that another outcome would have resulted). However, I do not think that this objection is adequate and sufficient. Wiggins's distinction between "what was possible" and "what would have been possible" doesn't eliminate the fact that if time contains only actualized instants, the series of what would have been possible is composed of what never was. In other words, the sequence in which t_3 is otherwise is not the sequence that contains t_3. Its possibility simply expresses its hypothetical status: if something else had happened at t_1 (when a nail could have been found to shoe the horse), something else could have happened at t_3 (the rider would have delivered the message), and so on until t_{10} (the kingdom would have been saved). But the alternative events belong to a parallel narrative—a fully conceivable one, no doubt, but one that is powerless (ἀδύνατον) in the actual world.

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[50] Sextus Empiricus, *Adv. Math.* X, 86.
[51] David Wiggins, "Temporal Necessity, Time and Ability: A Philosophical Commentary on Diodorus Cronus' Master Argument as Given in the Interpretation of Jules Vuillemin," in *Causality, Method, and Modality*, ed. G. G. Brittan Jr. (Dordrecht: Kluwer, 1991), 200.

We can now return to the master argument and consider its foremost current interpretations. It is presumably because the incompatibility of the three premises is not immediately evident (at least for modern readers) that many reconstructions of the alleged Diodorean argument have appealed to additional (although unstated) premises. Thus, Bobzien (following Prior) adds, "if something is the case now, then it has always been the case that it will be the case," and "if something now neither is nor ever will be the case, then it has by now been the case that it will never be the case"; [52] Vuillemin adds the necessity of the present and the "principle of synchronic contraction," which states that "if there is an instant t_0 such that it is possible at t_0 that p at t, then there is on the interval t_0-t an instant t_1 where $t_0 \leq t_1 \leq t$, such that it is possible at t_1 that p at t."[53] In so doing, they forget that Epictetus tells us where we should be looking: Diodorus realized (a) that the claims of the trilemma form a contradiction, and (b) that accepting the first two (on the ground that they seem plausible) leads to the negation of the third one. Furthermore, (c) as with all trilemma, other solutions are open (thus Cleanthes rejected the first claim while others rejected the second one). The task is therefore to elucidate the premises themselves in order to exhibit the contradiction.[54]

The first premise is ambivalent. The claim "all past truth is necessary" could designate an objective necessity (in which case "past truth" refers to past events of which it is said that they had to be); or it could mean that, insofar as all that is past is achieved and complete, what is true about it is necessarily so (in which case "past truth" refers to a now irrevocable fact which, nevertheless, prior to its occurrence, didn't have to be). In agreement with Cicero I believe we must retain the second reading: "all things true in the past are necessary . . . because they are immutable (*immutabilia*) and because what is past cannot turn from true to false."[55] Although no alternative could have happened at the time it happened, the argument need not assume the fatalist

[52] Prior, *Time and Modality*, 87; Bobzien, *The Megarics*, 91.

[53] Jules Vuillemin, *Nécessité ou Contingence, L'Aporie de Diodore et les Systèmes Philosophiques* (Paris: Editions de Minuit, 1984), 32, 39. Vuillemin's premise is (rightly) rejected by Wiggins, *Temporal Necessity*, 197–99.

[54] I agree with Gaskin's effort to reconstruct the master argument on its own grounds without introducing unmentioned premises. Gaskin, *The Sea Battle*, 292. The whole point of a trilemma is that the three claims are sufficient to generate an incompatibility.

[55] Cicero, *De fato*, VII, 14.

undertones of the first version. Truth requires that the corresponding state of affairs be determinate; it excludes alternative possibilities, but it need not do so in advance. By virtue of being bygone, whatever happened, even if causally random or statistically unlikely, has become unassailable.

Of course, what is necessary is a fortiori possible; and we could say that, in a sense, the past contains former possibilities. This point, however, is not in dispute. Rather, the first premise excludes contingency from the past. In *De caelo* Aristotle claims that: "no potentiality is of the past, but only of the present and the future."[56] The purpose of the first premise is to exclude possibilities of being that are equally possibilities of nonbeing. As Gaskin observed "ἀναγκαῖον in premise 1 of the Master Argument is functioning not so much in its role as the dual of possibility, but rather as the negation of contingency."[57] Necessity extends to the whole of the past because the passing of time creates an inalterability that excludes the possibility of not having been (or of having been otherwise).

The second premise ("the impossible doesn't follow the possible") explains why unactualized possibilities are ruled out. Impossibility is the strict complement of necessity since what is necessary excludes otherness and difference. This premise, once again, appeals to a rule introduced by Aristotle himself:

> The possible is such that if that of which it is said to have the potency becomes actual, nothing impossible will result. I mean, for instance, if it is in something's power to sit (δυνατὸν καθῆσθαι) and it is permissible (ἐνδέχεται καθῆσθαι), then should it sit, there will be nothing impossible.[58]

The second premise posits a formal condition for δύναμις: if something is possible, its actualization cannot yield impossibility. Thus, not everything is possible. Among the innumerable things that are not actually the case, those are possible for which no impossible outcome

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[56] *De caelo* 283b13–14.

[57] Gaskin, *The Sea Battle*, 283.

[58] *Metaphysics* 9.3.1047a24–28. Aristotle uses two distinct expressions: δυνατὸν καθῆσθαι (which I translated as "it is in something's power to sit") and ἐνδέχεται καθῆσθαι (which I translate as "it is permissible to sit"). The first expression refers to the agent's own ability and the second to the conditions which allow him to exercise his power; see Gaskin, *The Sea Battle*, 286–88; and Weidemann, "Aristotle, the Megarics, and Diodorus," 132.

would follow should they be actualized. By contrast, an impossible outcome shows that it wasn't a real possibility in the first place, as we can see with the example of the incommensurability of the diagonal of a square to its side.

> I mean, for example, someone who doesn't take into account the impossible could assert that it is possible for the diagonal [and the side of a square] to be measured by the same unit (although it will not be measured) on the ground that nothing prevents what is possible from being out of nonbeing or from becoming out of non-becoming. But from what has been laid down, it is necessary that if we were to assume that something which is not [actual] but possible, is or has become, nothing will be impossible. Yet, in this instance there will be something impossible, namely, for a common unit to measure both the diagonal and the side.[59]

Following Aristotle, Diodorus appeals to the fact that if the consequent of an inference is impossible, the antecedent is also impossible.[60] Thus, the maximum extension of all that is possible is ultimately governed by the principle of noncontradiction.[61] This provides us with "a method for deciding whether something which is not actually the case could possibly be the case or not."[62] It is unwarranted, however, to turn this principle into a definition of δύναμις (as Weidemann suggests). The principle of noncontradiction provides a criterion of consistency that delimits the largest extension for the exercise of δύναμις, but contradiction doesn't define it. Furthermore, as the previous example of someone sitting demonstrates, the inconsistency exemplified by the geometric example doesn't cover the full extent of Diodorus's second premise. It is not enough that the

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[59] *Metaphysics* 9.4.1047b6–12.

[60] Whereas the converse, as Alexander of Aphrodisias mentions, is not true: "If it is impossible that the consequent comes to be, it is also impossible for the antecedent to do so. . . . For, as we have said before, the implication is in the reverse direction. For the possible in all its meanings has its implication from the antecedent, the impossible from the consequent. For if the antecedent is impossible, the consequent is not prevented from being possible, as in the case of 'if you are a centaur you are an animal.' But if the consequent is impossible it is necessary that the antecedent also be impossible, whatever meaning of impossibility is taken." *In An. Pr.*, 183, 8–17.

[61] Aristotle's distinction between ἐνδέχεθαι and δύναμις suggests that, at least in the case of rational potency, δύναμις is not exhausted by the presence of the necessary conditions that are required for its exercise (as Hartmann would have it).

[62] Weidemann, "Aristotle, the Megarics, and Diodorus," 132.

possible contains no intrinsic contradiction, it must also agree with the circumstances. Thus, "Socrates can sit" means not only that there is no contradiction between the subject "Socrates" and the predicate "is sitting" (Socrates belongs to the class of things that can sit), but that in his present circumstances nothing forbids him to sit (Socrates is not forced to stand, he is not tied down to a tree, and so forth). In other words, the second premise stipulates as conditions of possibility for the exercise of δύναμις that neither contradiction nor constraint be present. But the Megarian opponent of Aristotle in *Metaphysics* 9 (and presumably Diodorus) extend the condition one step further, positing what Makin dubs an "extremely isolationist" requirement according to which "the truth of p should be assumed in complete isolation from anything else."[63] Thus (on the Megarian view) if I am sitting, my actual position contradicts a putative possibility to be actually standing, thereby making it impossible.

It is tempting to appeal to the principle of the extension of truth to the totality of time and declare that if something is the case now, it has always been true that it would be and, similarly, that if something neither is nor will be, it has always been true that it will never be. This would make the master argument depend on an inference from truth to necessity. Diodorus would probably not have ignored this option, which is at the core of the fatalist's argument in *De interpretatione*; but it is nevertheless not a premise of the master argument (*contra* Bobzien). By contrast with the fatalism discussed in *De interpretatione* 9, the master argument doesn't depend on any prior truth to establish the necessity of the future.[64]

The difficulty arises because of an ambiguity in Diodorus's solution according to which something is possible if it becomes actual in the

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[63] Stephen Makin, *Aristotle, Metaphysics Book Theta* (Oxford: Clarendon Press, 2006), 75.

[64] Weidermann also appeals to anterior truth when he declares that "if it is impossible that it is and *always has been true* that the thing in question [that is, a possibility that doesn't and will not actualize] happens and will happen what this impossibility follows from, namely that it is the case that the thing in question happens, is impossible too because what is impossible doesn't follow from something possible. Hence, nothing that neither is not will ever be the case is possible." Weidermann, "Aristotle, the Megarics, and Diodorus," 139. My emphasis. The tacit assumption is that the statement "it is the case that x happens" entails "it has *always has been true* that x happens or will happen"; N ($p \rightarrow HFp$).

future (x is potentially y if y becomes actual). One could in effect understand the claim as stating that:

(a) Prior to its actualization, y is already a possibility for x in the sense that it is a real attribute. Thus, if "Lauryn will travel to Tokyo" is true, Lauryn already possesses the potentiality to travel to Tokyo.

(b) Or we could think that Diodorus's solution doesn't grant any potency to the subject because only an actual predicate can be had by an actual subject. Thus, x will be y when y is actualized in the future.

The first case (a) assumes that the possibility of a future actuality already exists, that in some sense it already belongs to the present. But the idea that the possible could have some ontological standing independently from actuality is the very thing that Diodorus's argument denies. Thus, when claiming that possibilities are what will become actual, Diodorus doesn't mean that they are already here. Rather, just as there is in the present instant only one state of affairs in which the possible coalesces with the actual, there will be only one state of affairs in the future.

Thus, on the ground of the first two premises, we obtain the following:

(a) Whatever doesn't become actual neither is not ever will be.
(b) All past truths are necessary.
(c) All that is or will be must eventually become necessary (by virtue of the necessity of the past alone, not on the assumption of an antecedent truth about the future).
(d) Necessity entails the impossibility of the contrary.

Since the future will become past and since "all past truth is necessary," all future events will become necessary in a more distant future. In other words, it is not just that a possibility that doesn't actualize doesn't belong to any temporal point (by itself, this wouldn't generate necessity), but (a) what will be will, at some ulterior point, be past (thus, it will be immutably and irreversibly true), and (b) the necessity of a proposition entails the impossibility of its contradictory. If we assume two mutually exclusive possibilities, whichever occurs becomes necessary; consequently, the alternative becomes impossible. If so, however, this alternative wasn't truly possible, since otherwise an impossible would follow from a possible.

III

Motionless Time and Ontological Modalities. There remains in this last section to explore the metaphysical assumptions that sustain the master argument. Although the remarks that follow are admittedly speculative, I believe they offer a plausible account. Superficially, Diodorus's construal of necessity as what is always true and of nonnecessity as what is intermittent seems to overlap with the distinction between a temporal realm that contains all that is transient and mutable and an everlasting realm that contains all that cannot fail to be. In this view, time denotes deficiency and negation; it is the reason why beings do not remain, why all is impermanent. Yet this seems to apply more fittingly to earlier Megarian thinkers (Euclid in particular) than to Diodorus. For what is carried by temporal flux and irrevocably passes away is also transfigured into an immutable truth. What was, even if it was only once, will forever have been. Even death and its nevermore cancels the possibility of never having been. The past may be ignored, denied, or distorted, but its occurrence cannot be undone. The passage of time entails simultaneously the loss of presence and the gain of immutable determinacy. Truth depends on this transmutation whereby necessity arises out of temporality.

The so-called necessity-of-the-present thesis claims that whatever holds at instant t cannot but hold at t since whatever actualizes at a given instant cancels any alternative. In that sense, *what is* has already fallen into the past. As Cicero observed, the argument shows that "no change from true to false can occur even in the case of the future."[65] Since the future will, at some point, become past, the truth about the future must be as immutable as the truth about the past; or, as Cicero puts it, *it was going to happen* is "a necessary inference from the fact that it did happen."[66]

If, in agreement with common practice, we represent time as a linear vector, the future appears as the mirror image of the past on the other side of the point that stands for the present and divides the line into two segments (past/present on the left and present/future on the right). In this guise, the future is a one-dimensional series of not-yet actual instants that prolongs the linear series of the no-longer actual

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[65] Cicero, *De fato*, IX, 17.
[66] Ibid.

instants of the past. Symmetry demands that just as there is no room in the past for any alternative course of events, the future cannot admit of any alternative to what will be. It is strictly identical with what will have been. The function of the master argument is to warrant this symmetry. Since what is true about the past is necessary and since there cannot be a future which at some subsequent time will not have been, all that is future is destined to become an immutable past truth. Thus the future is what, at some ulterior point, will have been. The necessity of the past is not just a feature of bygone history; it is the fate of all that is still to come. Diodorus invites us to conceive of the future as a past that is still to come, that is, to envision the future *sub specie praeteriti*. This complicates the common linear representation of time, which understands the past as something that is "behind" us. Conceived *sub specie praeteriti* there can be only one future. Alternative possibilities, insofar as they do not actualize, will never have been true.

The grammar of tenses provides a clue. The preterit denotes the past and stresses that an action or state of affairs is no more. We can, however, give to the future a similar expression. In that case, the future is not simply what will be but what will have been; thus, what will be past. The future perfect expresses this grammatical aspect. When we say, "Tomorrow I will have completed this task," we describe a future event (F_1) in the language of the perfect; we envision this future from the standpoint of some even more remote future F_2 ($F_2 > F_1$) in relation to which F_1 will be over; we envision tomorrow from the standpoint of the day after tomorrow. Thus, the master argument requires that we translate all imperfective verbs (verbs that express a progressive, habitual, or iterative aspects) into perfective descriptions (as a series of bounded and unitary events).

We often think of causality as having a past-to-future orientation, since the causes of actual events are mostly behind us, while their effects are still to come. The master argument invites us to reverse this order. The "being past" of a future event follows its actual occurrence. The past is the future of the future. This demands that we envision the three dimensions of time in reverse order: just as the past was—at some still anterior point—future, the future will—at some further point—be past. In a sense, it is our usual chronology with its flow from past to present and future that distorts the future-to-past direction of time. But

doesn't this conflict with our experience? In response to Diodorus, Wiggins suggests,

> We must take continuous and imperfective verbs for what they are; as irreducible to punctual or perfective vocabulary; and we must describe within our empirical experience not only events but also continuous and irreducible states and processes, not only instants but also intervals—or (as I find it so natural to say) times.[67]

This clearly states a fundamental problem; it does little, however, to resolve it, since the fact remains that all that is and will be is translatable into perfective language. It is true that, for what is still to come, this translation hasn't occurred yet, but (as argued earlier) the master argument need not assume the anteriority of truth. All that matters is that this translatability is inscribed in the nature of time. Truth requires accomplishment, and only what is accomplished can be said to be. If eternity contains time in its entirety, the accomplished is the translation of any temporal event into the language of eternal truth.

What happens when the imperfective is eliminated or, to restate the question in ontological rather than grammatical terms, what is excluded from being? The argument doesn't deny time (if by this we mean the order of juxtaposition in which beings present themselves); rather, what it eliminates is mobility and transition, the very passing of time, the fluidity of a multiplicity without juxtaposition (in short, what Bergson calls "duration"). In the fragments that deal with motion Diodorus seems to assume its existence and, simultaneously, to exclude it from being. "One can say that something *has moved*, but not that *it is moving*."[68] Motion can be acknowledged in retrospect: we are forced to admit that things are not identical to what they were; but motion itself can never be caught in the act. This is why Sextus lists Diodorus (along with Parmenides and Melissus) among those who deny movement, but distinguishes him as one who acknowledged that motion has occurred:

> He shows that nothing at all *is* moving, and yet, that *there has been* motion. . . . [I]t follows from reason (κατὰ λόγον) that there has been motion for what was then observed in this place is now observed in that place; which couldn't have occurred if it hadn't moved. . . . However, to demonstrate that nothing moves, he submits the following argument: 'if something moves, it does so either in the

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[67] Wiggins, *Temporal Necessity, Time and Ability*, 202.
[68] Aetius, *Placita*, I, 23, 5; Muller, *Les Mégariques*, frag. 121, 43.

place where it is or in the place where it is not; but it moves neither in the place where it is (since it remains there), nor in the place where it is not (since it is not there); therefore nothing moves.[69]

The paradox rests on a conflict of reason with itself rather than with sensory appearance. Reason, not perception, bears testimony to the fact that motion must have occurred; motion is deduced, it is not experienced. Yet, the same reason that concludes that there has been motion demonstrates the impossibility of its actuality.

Isn't Diodorus led to admit that something impossible (since there is no instant in which it could have taken place) nevertheless just happened? One could object that if something is true once it has been accomplished, it cannot be false when it was in the process of being accomplished. Sextus, who reports these arguments, vents his frustration: "in trying to support his own dogma this man has professed an absurdity; for how is it not absurd that while nothing moves something has moved?"[70] Yet the metaphysical question is whether motion possesses the subsistence and reality that is required to deserve of being called "being." Diodorus can claim that there has been motion without thereby granting it any ontological status. When reason concludes that there has been motion, it acknowledges a difference, it doesn't posit a being. Thus, it is misleading to say that Diodorus acknowledges past motion; it would be more accurate to say that he acknowledges the prior existence of a different (but equally determinate) order of things. Nor can we object that motion must have happened between these determinate moments, since the question concerns the reality of this mediation. The leaf that was green yesterday is now yellow. To acknowledge this is to acknowledge two distinct and complete states of affairs. The transition from the first to the second, however, is not itself a third state. If we cut shorter and shorter intervals until we reach the "instants-without-parts," we only find further determinate states of affairs, each one equally achieved and complete.[71]

As mentioned earlier, the necessity-of-the-present principle posits that whatever holds at t must hold at t; but for this reason, change itself cannot happen in the present. While this principle is, for Aristotle,

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[69] Sextus, *Adv. Math.* X, 85–87.

[70] Sextus, *Adv. Math.* X, 86.

[71] Wiggins, in a striking formulation, talks of "a world shifting as if stromboscopically from a state of being frozen stiff in one way to being frozen stiff in another way." Wiggins, *Temporal Necessity, Time and Ability*, 196.

compatible with activity (the builder actually engaged in the activity of building), Diodorus sees the necessity of the present as incompatible with motion. For Aristotle ἐνεργεία expresses the coalescence of activity and outcome, production and product; for Diodorus, however, ἐνεργεία can refer only to the accomplished result severed from any accomplishing. The Diodorean account of the necessity-of-the-present principle excludes process and equates being with what has ceased to become. Accordingly, one cannot talk of the actuality of motion without expressing a contradiction.

The privilege Diodorus grants to the past is a consequence of the requirement of truth. Insofar as it is achieved, the past truly is; it has escaped becoming and possesses the immutability that is the condition of possibility of true statements. This is why the fatalism of the master argument doesn't need the assumption that the future is already set in stone before it occurs; all that matters is that the future will possess the same determinateness as the past; as a consequence, any possible that doesn't actualize is necessarily excluded from the chain of being and is deemed impossible. Logos is recollection; as soon as we acknowledge what is, it is no longer occurring but has occurred.[72] The so-called metaphysics of presence is thus a metaphysics of the past for *what truly is* is what is wholly accomplished.

Diodorus's privilege of the past is further supported by the observation that a past statement can be true even if there is no corresponding true proposition in the present tense.

> It is possible then for the present to be false when the preterit is true. Of the same sort is the proposition: "Helen had three husbands" for neither when she had Menelaus as a husband in Sparta, nor when she had Paris in Ilium, nor finally when, after his death, she married Deiphobus was the present "she *has* three husbands" true; and yet, the preterit "she *had* three husbands" is true.[73]

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[72] Perhaps this is how we can understand Diodorus's example of the ball: while "at the point of time that is mid-way the proposition: 'the ball touches the roof' is false; since it is still to come, when it has touched the roof, the preterit 'the ball has touched the roof' becomes true; therefore, it is possible for the preterit to be true when the present is false, and therefore possible for a thing not to be moving in the present but to have moved in the preterit." Sextus, *Adv. Math*. X, 101. Touching is not truly a process; as soon as it occurs it is already past.

[73] Sextus, *Adv. Math*. X, 98.

One could object, as Sextus does, that "Diodorus is using sophistry and wishes to deceive us by ambiguity."[74] Indeed, the claims: "Helen *had* three husbands" and "Helen *has* three husbands" do not differ simply with respect to their tenses but in their meaning, since in the present tense the proposition means that Helen practiced polyandry, which is not what the preterit suggests. Yet, Sextus's objection misses the point. The example shows that the truth of an assertion doesn't depend on its coincidence with a present state of affairs but on the completion of its subject matter. This further illustrates the claim that an unachieved process, so long as it is unachieved, cannot be the object of a true statement.

In conclusion, it appears that the debate between Aristotle and Diodorus is concerned with two alternative attempts to resolve the same issue. Aristotle and Diodorus aim at maintaining the fullness of being. Diodorus's admission of temporal discontinuity, however, renders his ontology quite paradoxical. Even though difference itself has no substantial existence, to acknowledge that there has been motion is to admit difference. There cannot be any gap between the "instants-without-parts," and yet each one must be a discrete reality. In order to avoid granting being to nonbeing Diodorus ends up with a discontinuity for which there is no possible account. For Aristotle, being is differentiated and multifarious, but it is continuous. This is why negation exists only in logos; a negative proposition doesn't translate into an affirmation of nonbeing anymore than the absence of something designates an actual cut in the fabric of reality. Predicative discourse is, of course, articulated and, as such, it must dissociate; but it doesn't thereby tear apart the continuum of reality. Aristotle's admission of δύναμις is another way of maintaining that there cannot be gaps of nonbeing within the fabric of reality ("nature abhors a vacuum"). The unactualized, the latent, and the virtual guarantee the continuity of being; thus, being and indeterminacy can belong together. The builder who is not exercising his skills retains something that is not actualized; he has his power in reserve, even if he will never use it again. Likewise, matter guarantees that an underlying substratum remains that guarantees continuity between the various forms that nature and art are capable of bringing forth.

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[74] Ibid., 99.

By contrast, Diodorus's ontology must assume gaps since time is a juxtaposition of infinitesimal but determinate and immutable units of being. Yet there is no possible account for these gaps since there is no ontology of the between. The Diodorean concept of being cannot be reconciled with what is unachieved or indeterminate any more than it could grant being to nonbeing. Time is the ordering of what was, what is, and what will be. These are determinate, complete, and achieved units. Insofar as they are complete, they are finite and differentiated states of affairs. Yet the very logic of discrete temporal grains of reality demands a separation that guarantees the fullness of each individual moment but for which there cannot be any account. Thus, Diodorus cannot avoid the paradox of saying that between what was, what is, and what will be there *is* nothing.

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