

REREADING *METAPHYSICS* E2-3

ARISTOTLE'S ARGUMENT AGAINST DETERMINISM, AND HOW AVERROES TWISTED IT IN HIS LONG COMMENTARY

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Abstract. In the fresh reading proposed here of the still not satisfactorily interpreted passages in *Metaphysics* E2-3, Aristotle emerges as making a case against determinism based on a robust notion of the accident. Accidental beings are uncaused causes and have their rightful place in Aristotle's ontology. The resulting physical indeterminism is here used as a litmus test for the exegetical practice of the great Commentator, Averroes, whose self-proclaimed, and later proverbial, loyalty to Aristotle's text will be shown to give way to idiosyncratic interpretations at times. His explanations of *Metaphysics* E2-3 are sparse and no less obscure than Aristotle's text. It is only when read together with his commentaries on the *Physics*, to which he explicitly refers twice in his Long commentary on *Metaphysics* E2-3, that a surprising picture emerges. Averroes recycles the notion of the accident, now reconceptualised in cosmological terms, and – putting it to the opposite use of Aristotle's – weaves it into an original theory of motion that integrates both supra- and sublunar realms into a deterministic framework of uninterrupted causal chains, thus safeguarding the principle of Divine providence.

Résumé. Par la nouvelle lecture de *Métaphysique* E2-3 – un morceau de texte toujours manquant une interprétation satisfaisante – qui est proposée ici, l'argument d'Aristote ressort comme une défense de l'indéterminisme se fondant sur une notion solide de l'accident. Les êtres accidentels comme causes non-causées ont leur place légitime dans l'ontologie d'Aristote. L'indéterminisme assez radical qui en résulte est utilisé comme une mise à l'épreuve de la démarche exégétique d'Averroès : Il sera montré que la fidélité proverbiale du Grand Commentateur au texte du Stagirite parfois laisse place à des interprétations idiosyncratiques. Ses explications de *Métaphysique* E2-3 sont plutôt clairsemées et non moins obscures que le texte d'Aristote, mais si on les lit à la lumière de ses commentaires à la *Physique*, à laquelle il se réfère explicitement deux fois dans son Grand commentaire à *Métaphysique* E2-3, une image surprenante se fait jour. Averroès recycle la notion de l'accident, cette fois conceptualisée en termes cosmologiques, en l'employant contrairement à Aristote dans une théorie originale et idiosyncratique du mouvement qui fait intégrer les domaines supra- et sublunaires dans un seul cadre déterministe des chaînes causales ininterrompues, entièrement pénétrable par la providence Divine.

1. INTRODUCTION

Aristotle's *Metaphysics* E2-3 features a substantial, if somewhat laconic, discussion of being *per accidens*, followed by something that very much looks like an argument against determinism.¹ Although there have been quite a few more recent attempts² to come to grips with these curious passages, Kirwan's verdict that "[t]he chapter has not yet received a satisfactory interpretation"³ essentially still holds true. In the first part (2-4) I argue that by including an argument against determinism that *prima facie* is not required by the overall argumentative structure, Aristotle wants to get across an additional and substantial point about indeterminism based on a conception of accidental beings as uncaused causes. If we take this argument seriously, Aristotle cannot usefully be labelled a relative determinist, or a compatibilist, for that matter, but has to be acknowledged as a staunch defender of anti-determinism.⁴

It is remarkable that Averroes, after his prolonged toil of continuously revising his commentaries on Aristotle's notorious succession argument *ex parte motus* in *Physics* VIII.1, eventually shifts the ultimate explanatory burden onto the notion of the accident.⁵ It is only when read

¹ William D. Ross, *Aristotle's Metaphysics: A revised text with introduction and commentary*, 2 vol. (Oxford, 1924), p. 357-364, calls the argument obscure and leans toward a deterministic interpretation; Christopher Kirwan, *Aristotle's Metaphysics. Books Γ, Δ and E*, translated with notes (Oxford, 1971, 2nd ed. 1993), p. 192-198, criticises Ross and suggests a non-deterministic reading, without however making a case for it.

² See a recent contribution on the topic for a bibliography: Christos Panayides, "Aristotle on incidental causes and teleological determinism: Resolving the puzzles of *Metaphysics* E.3," *Journal of philosophical research*, 37 (2012), p. 25-50. Additionally, for general studies on necessity in Aristotle, see Jaakko Hintikka, *Time and necessity. Studies in Aristotle's theory of modality* (Oxford, 1973), Richard Sorabji, *Necessity, cause and blame. Perspectives on Aristotle's theory* (London, 1980); more detailed studies on the notion of the accident in Aristotle are Alban Urbanas, *La notion de l'accident chez Aristote* (Montreal, 1988) and, more recently, John Dudley, *Aristotle's concept of chance* (New York, 2012), especially chapter 3.

³ Kirwan, *Aristotle's Metaphysics*, p. 198.

⁴ Most scholars agree that Aristotle is not a full-hearted determinist, but quite how little determinism this argument allows for has hitherto, to my knowledge, not been appreciated.

⁵ This has been presented in a recent study by Ruth Glasner, *Averroes' physics. A turning point in medieval natural philosophy* (Oxford, 2009), especially in chapters 6 and 7. But see also, for a slightly different reading: Cristina Cerami, "L'éternel par soi. Averroès contre al-Fārābī sur les enjeux épistémologiques de *Phys.* VIII 1," in *Averroes' natural philosophy and its reception in the Latin West*, ed. P. Bakker (Leuven,

together with the explicit reference to Physics II.4-6 as well as with the different versions of his commentaries on Physics VIII.1, that the obscure comments on E provide a picture of Averroes' cosmological system in which the accident is reconceptualised to take on a crucial role in his theory of causality as a determinism of uninterrupted causal chains.⁶ In the second part (5-7) I first outline Averroes' discussion of the accident in the context of natural causality (Physics II.4-6). Second, I sketch Averroes' struggle against al-Fārābī, Ibn Bāğğā and Avicenna on the argument in Physics VIII.1. Eventually, I consider how the comments from the "Long commentary on the Metaphysics" (LCM) on E2-3 make sense against this backdrop.

In this way I hope to show that Averroes is best understood not as trying to establish the scientific foundations of indeterminism as a response to the Aš'arī occasionalism of the *kalām* tradition, as Ruth Glasner put it,⁷ nor as the unsystematic determinist that Catarina Belo takes him to be,⁸ but as putting forward an original and idiosyncratic interpretation of Aristotle's notion of the accident that on the one hand solves the great riddle of Physics VIII.1, and on the other hand allows every event to be causally retraceable to God without therefore having to deny chance events. This serves as a powerful example of the sophistication with which the Commentator was able to subsume potentially delicate positions of the First Teacher under an original and compelling interpretation of his own.

2. METAPHYSICS E2-3: TWO NOTIONS OF ΣΥΜΒΕΒΗΚΟΣ

Aristotle's overall project in the Metaphysics is to investigate the first causes (ἀρχαί) of being *qua* being. Metaphysics E, the shortest of the fourteen books, has been suspected by some to be spurious or a later addition to the work,⁹ but it is in fact pivotal to the overall structure of the

2015), p. 1-36; and *ead.*, "A map of Averroes' criticisms against Avicenna: Natural philosophy I," in *The Arabic, Hebrew and Latin reception of Avicenna's physics and cosmology*, ed. A. Bertolacci and D. N. Hasse (Berlin/Boston, 2018), p. 163-240.

⁶ Cf. Glasner, *Averroes' physics*, p. 82-3.

⁷ Glasner, *Averroes' physics*, p. 63 and *passim*; Glasner departs from unwarranted assumptions about Aristotle's commitment to determinism (or later attributions thereof to his text) so that for Averroes "[e]stablishing indeterminism as a scientific doctrine with Aristotelian foundations was a difficult task" (p. 63).

⁸ Catarina Belo, *Chance and determinism in Avicenna and Averroes* (Leiden, 2007), p. 232.

⁹ See Emmanuel Martineau, "De l'inauthenticité du livre E de la *Métaphysique* d'Aristote," *Conférence*, 5 (1997), p. 445-509.

inquiry into the first causes of being *qua* being.¹⁰ It concludes the preliminary methodological discussions of books ABΓΔE1, and by dismissing from the inquiry two of the four senses of being distinguished in Δ7, being *per accidens* (E2-3) and being-as-truth (E4), paves the way for the positive investigation into the causes of being *qua* being through the remaining two senses: being-as-substance (ZH) and being-as-potentiality-or-actuality (Θ). The problem with the discussion of being *per accidens* in E2-3, and one of the reasons why book E may be considered spurious, is that E3 seems out of place, not required by the overall argument, and foreign to the issues discussed. Here is a short summary of E2-3.

In E2, Aristotle explains that there can be no theoretical inquiry (θεωρία) of being *per accidens* (1026^b4). He first gives examples to show that in practice no science is concerned with the accidental properties of its object of study: when a builder creates a house there will be innumerable accidental properties that accrue to the house (e. g., it may be agreeable to some people and not others; it will be distinct from every other thing), yet none of these properties is part of the subject-matter of architecture (1026^b6-10). The same holds for other sciences, like geometry (1026^b10-13), and it would seem that no science investigates accidental properties (1026^b5). And how could it? Accidental properties don't undergo a process of generation and corruption – they are accidental (1026^b22-24). In fact, Aristotle says, the accident is but a name and close to non-being, which is why Plato was right to associate non-being with the sophists, for they discuss the accident more than anyone (1026^b16-21). Here Aristotle presents what I take to be a sophistic argument that capitalises on a misguided understanding of the accident.¹¹ Even if perhaps not perfectly clear, E2 should have sufficed to establish that the science of being *qua* being need not be concerned with being *per accidens*. For it shows that there cannot be any science of the accident, because the accident does not come to be by a process of generation and is close to non-being.

But then there follows E3, in which Aristotle continues to talk about being *per accidens* and presents what I take to be an argument against determinism followed by an enigmatic passage which I shall call the *causa* Nicostratus.¹² He presents the following argument: “That there

¹⁰ Stephen Menn, *The aim and scope of Aristotle's Metaphysics*, forthcoming; cf. the draft at Ig1: the senses of being and the causes of being, 17-19, at www.philosophie.hu-berlin.de/lehrbereiche/antike/mitarbeiter/menn/texte/ig1ab.

¹¹ Discussed in section 4.

¹² Nicostratus is the name habitually given to the anonymous man who eats spicy food

are principles and causes which can appear and disappear without ever coming-to-be or passing-away, is obvious. Otherwise, everything would be of necessity."¹³ Denying that there are such causes would lead to the absurd picture that Nicostratus' accidental death was necessary all along:

Accordingly, someone will die by disease or force if he goes out; and this if he gets thirsty; and this if something else; and this way it will come to what is the case now, or to something that has already come to be the case. Like when he is thirsty, this will happen when he eats spicy food, and this is either the case or not. And thus, of necessity he will either die or not die. Likewise, if someone leaps to what came to be the case in the past, the principle is the same: for that which has come to be the case was already present in something. Then, everything that is going to be is already necessary.¹⁴

It is the relation between E2, featuring the argument for the dismissal of being *per accidens* from the inquiry on the one hand, and the anti-determinist argument of E3 together with the *causa* Nicostratus on the other hand, that has not yet been satisfactorily explained. Other than by the enigmatic nature of the text in E3, scholars have been especially puzzled by the fact that, even though at the end of E2 Aristotle declares that the issue of the accident has now been comprehensively dealt with, in E3 he seems to be happily continuing his discussion on the self-same subject.¹⁵

There is a straightforward solution, I think. Aristotle talks about two different things in E2 and E3: he distinguishes actual "accidental be-

and is then killed by the well; first attested in Alexander of Aphrodisias, *In Aristotelis metaphysica commentaria*, CAG, p. 454.36; see also Walter Mesch, "War Aristoteles ein Determinist?", *Zeitschrift für philosophische Forschung*, 67 (2013), p. 125.

¹³ 1027^a29-32: "Ὅτι δ' εἶσιν ἀρχαὶ καὶ αἴτια γενητὰ καὶ φθαρτὰ ἄνευ τοῦ γίγνεσθαι καὶ φθείρεσθαι, φανερόν. εἰ γὰρ μὴ τοῦτ', ἐξ ἀνάγκης πάντ' ἔσται. The argument will be discussed in section 4. Translations in this paper are all mine.

¹⁴ 1027^b1-9: ὥστε ὁδὶ ἀποθανεῖται νόσῳ ἢ βίᾳ, ἐάν γε ἐξέλθῃ: τοῦτο δὲ ἐάν διψήσῃ: τοῦτο δὲ ἐάν ἄλλο: καὶ οὕτως ἦξει εἰς ὃ νῦν ὑπάρχει, ἢ εἰς τῶν γενομένων τι. οἷον ἐάν διψήσῃ: τοῦτο δὲ εἰ ἐσθίει δριμύα: τοῦτο δ' ἦτοι ὑπάρχει ἢ οὐ: ὥστ' ἐξ ἀνάγκης ἀποθανεῖται ἢ οὐκ ἀποθανεῖται. ὁμοίως δὲ κἂν ὑπερπηδήσῃ τις εἰς τὰ γενόμενα, ὁ αὐτὸς λόγος: ἦδη γὰρ ὑπάρχει τοῦτο ἔν τινι, λέγω δὲ τὸ γεγονός: ἐξ ἀνάγκης ἄρα πάντα ἔσται τὰ ἐσόμενα.

¹⁵ At the end of E2 (1027^a26-28), Aristotle writes: τί μὲν οὖν ἐστὶ τὸ συμβεβηκός καὶ διὰ τίν' αἰτίαν καὶ ὅτι ἐπιστήμη οὐκ ἔστιν αὐτοῦ, εἴρηται. Technically, this suffices to dismiss being *per accidens* from the metaphysical inquiry, and *prima facie* there is nothing in the overall structure of the argument that would require Aristotle to supply E3. For worries about this incoherence, see Arthur Madigan, "Metaphysics E.3: A modest proposal," *Phronesis*, 29 (1984), p. 127-8 and particularly Filip Grgić, "Aristotle against the determinist: Metaphysics 6.3," *International philosophical quarterly*, 38 (1998), p. 128.

ing,” an example of which would be the referent of “musical Coriscus,” from the “accident *tout court*,” which refers to the phenomenon that some predications are true neither always, nor most of the time, but only rarely. This distinction is borne out by Aristotle’s language, as I will show, and it helps us to better appreciate the structure of the argument: the second half of E2 (1026^b24-1027^a28) is set off as an excursus that deals with the nature and the causes of the accident *tout court*, which is framed by the more general discussion of actual accidental beings and why they are not a good candidate for the study of the causes of being *qua* being. E3 just picks up again the train of thought abandoned immediately before the excursus.

3. THE STRUCTURE OF THE ARGUMENT IN E2-3

This reading is rendered plausible by two textual observations. First, just after the excursus at 1027^a29-31 the thesis that for accidental beings there is no generation or corruption, introduced immediately before the excursus begins (1026^b22-24), is taken up again almost *verbatim*. This strongly indicates that instead of the alleged misfit of E3, the argument for the dismissal of being *per accidens* from the inquiry is just briefly interrupted by a parenthetical justification of the claim that there is no science of the accident *tout court* (1026^b4-5). The reason for there being no science is that the nature of the accident *tout court* is such that the beings of which it is the sole cause – i. e., accidental beings – defy the causal explanation by which science is defined and taught (1027^a20-22). The second claim, namely that the accident has so feeble an ontological status due to the fact that there is no generation or corruption of it (1026^b21-24), is quite logically taken up again at the beginning of E3.

Second, the unity of the excursus is clearly evinced by the fact that it begins by explicitly setting out what it wants to achieve (1026^b24-26), namely precisely what is summarised at the end of E2 (1027^a26-28): to clarify, as far as possible, the nature and causes of the accident *tout court*. Yet if there is no science of accidental beings, it would be grossly incoherent for Aristotle to conclude that he positively explained what the accident is and what its causes are. Therefore, all that Aristotle can have claimed to have successfully defined in the excursus, is the accident *tout court*, not accidental being; strictly speaking it is only the latter of which there cannot be *any* science, because its sole cause is the accident *tout court*.¹⁶

¹⁶ Note also the telling use of particles: ἀλλ’ ὁμῶς (1026^b24) introduces a new subject

The unity of E2-3 and the excursus contained in it is reinforced by Aristotle's language distinguishing between accidental beings and the accident *tout court*. First, in E2-3 Aristotle uses two expressions that square well with the proposed distinction: τὸ συμβεβηκός, which corresponds to the accident *tout court*, and τὸ ὄν τὸ κατὰ συμβεβηκός, which corresponds to accidental being.¹⁷ The way these expressions are employed reflect the unity of the excursus: at the beginning of E2, where accidental being is enumerated as one of the four principal senses of being, and then announced as the subject of the following two chapters that frame the excursus, the expression τὸ ὄν τὸ κατὰ συμβεβηκός is used (1026^a34, 1026^b3), just as it is in the general conclusion of E2-3 at the beginning of E4 (1027^b17). The simple expression τὸ συμβεβηκός is notably used at the beginning of the excursus: "but we equally have to say about the accident *tout court* as far as it is possible, what its nature is and on what grounds it exists" (1026^b24-25) as well as in the conclusion at the end of it: "It has now been said, then, what the accident *tout court* is, on what grounds it exists and that there is no science of it (1027^a26-28)."

Second, in cases where Aristotle uses τὸ συμβεβηκός in his discussion of accidental being more generally, it is fairly clear that he intends to speak of the accident *tout court*. One such example is his claim that the accident *tout court* is but a name and close to non-being (1026^b13, 21). It would be absurd to say this of a man in the flesh whose name is Coriscus and who is musical, for if he exists, he surely does so with full-fledged ontological prowess. Aristotle here speaks of the accident *tout court* as the name of this particular kind of predication which says that Coriscus is musical – and not of the accidental being, i. e., the musical man himself. Another example, this time a usage of τὸ ὄν τὸ κατὰ συμβεβηκός from within the excursus, can be adduced: "For, as far as accidental beings or accidental comings-to-be are concerned, their cause, too, is accidental (1027^a7-8)." Here Aristotle distinguishes two levels, one of accidental beings, and another of their causes. It will turn out that the cause of an accidental being just is the accident *tout court*. Let us see how we can further illuminate the distinction.

The accident *tout court*, so Aristotle, is only a name and close to non-

and ἅμα γὰρ δῆλον ἴσως (1026^b26) prepares the conclusion clearly marked as such by μὲν οὖν (1027^a26-27), with ὅτι (1027^a27) hearkening back to ἅμα γὰρ δῆλον ἴσως; the *reprise* is indicated by a strong ὅτι δ'εἰσὶν ἀρχαὶ [...] (1027^a29).

¹⁷ For τὸ ὄν τὸ κατὰ συμβεβηκός, or grammatical forms thereof, see: 1026^a34, 1026^b3, 25-6, 1027^a7, 8, 10-11, 17, 1027^b17; for τὸ συμβεβηκός: 1026^b11, 13, 21, 24-5, 31, 32-3, 1027^a1, 14-15, 20, 26, 27; sometimes verb forms are used, e. g., 1026^b34, 35, 1027^a2.

being. But what does it name and how is it supposed to be close to non-being? In the excursus, Aristotle says that the principle and the cause for the existence of the accident *tout court* is the fact that there is a class of beings that exist for the most part, but not always. Whenever such a being fails to exist, like when heat fails to come about during the dog days, this is what we call an accident. The accident *tout court*, then, is simply the designation of a true predication at a certain time *t*, conjoining predicates with a variable such that this conjunction is not usually true. Let us say, it is this:

$$\exists x(\phi(x)_t \wedge Px(\phi) \leq q \wedge q < 0.5).$$

Then συμβεβηκός is but the name for this formula taken to be true. It is in this way that Aristotle could say that it is close to non-being. The possibility of the conjunction of predicates to a variable so specified is explained, and now sufficiently so, by the indeterminacy of matter at 1027^a14 (ὥστε ἡ ὕλη ἔσται αἰτία ἢ ἐνδεχομένη παρὰ τὸ ὡς ἐπὶ τὸ πολλὸ ἄλλως τοῦ συμβεβηκότος).¹⁸

As far as accidental being is concerned, we now have no trouble in asserting its full-fledged ontological status and its unimpaired causal force.¹⁹ For an accidental being is the referent of Matthen's "accidental predicative complex"²⁰ of which the conjunction of its components is truly predicated, yet not always or usually so. Examples would be the referents of "literate musical Coriscus," "thirsty Nicostratus," "yellow table." Their cause, insofar as they have the accidental property that may be predicated of them, in turn, is nothing but the accident *tout court*.²¹ For if an accidental being were caused in any other way, this

¹⁸ Contrary to Ross, *Aristotle's Metaphysics*, p. 364, and Madigan, "Metaphysics E.3," p. 129, I don't think that Aristotle in E3 comes back to this proposition in order to add to a deficient answer given here to the question of the cause of the accident. It is true that Aristotle does not explain here why *accidental beings* come about. But this is not his intention here. All he wants to give an answer to is the question "Why can $\exists x(\phi(x)_t \wedge Px(\phi) \leq q \wedge q < 0.5)$ be true?" To this question the answer he gives is satisfactory. He notably uses the feminine substantive instead of the substantivized form of the neuter adjective to indicate the general manner of being responsible for the possibility of a phenomenon; see Jaume Casals and Jesús Reynés, "A note on the use of 'aitia' and 'aition' in the Metaphysics of Aristotle," *Rivista di cultura classica e medioevale*, vol. 37, no. 1 (1995), p. 89-95.

¹⁹ For such troubles see Kirwan, *Aristotle's Metaphysics*, p. 171.

²⁰ Mohan Matthen, "Greek ontology and the 'is' of truth," *Phronesis*, 28 (1983), p. 113-35, who rightly points out that accidental predicative complexes for both Plato (as immanent characters) and Aristotle (as non-substantial individuals) are a third class of entity, in addition to that of bearers of properties and that of properties borne, as in the example of "largeness-in-Simmias" from *Phaedo* 102^d5ff.; see p. 129-130.

would amount to a *per se* cause, and thus would have to be necessitated by a causal chain that would make it a necessary being.²² For Aristotle, accidental beings are not just substances under a specific description; they are beings, albeit “kooky” beings, with their own place in his ontology.²³

Aristotle has thus established in the excursus why there cannot be any science of being *per accidens* and, by implication, that being *per accidens* can be safely disregarded in the inquiry of the ἀρχαί of being *qua* being. For to have a scientific grasp of what *X* is, is to give an account of the cause of *X*; but in the present case, the cause of accidental beings is the accident *tout court*, conceived as a predicative complex the unity of which is grounded in an uncaused conjunction, true at *t* for indefinitely many predicates, so that there is no further answer to a “What is *X*?” question, except the generic one that the condition for the possibility of this phenomenon is given by the indeterminacy of matter. If there are no further causes to be specified for accidental beings, then by purely pragmatic considerations, for an inquiry into the first causes of being *qua* being this path is a *cul de sac*. Even if it were the right track, it would be impassable and must be abandoned.

Aristotle could have left it at that, but he chose to make a point in refuting a certain sophist position. For, based on this reading, we have to construe the first half of E2 that features the reference to Plato and the sophists as standing in much closer proximity to E3 and the *causa* Nicos-

²¹ τῶν γὰρ κατὰ συμβεβηκός ὄντων ἢ γιγνομένων καὶ τὸ αἰτιόν ἐστι κατὰ συμβεβηκός (1027^a7-8). Similarly, in Δ30 οὐδὲ δὴ αἴτιον ὀρισμένον οὐδὲν τοῦ συμβεβηκός ἀλλὰ τὸ τυχόν: τοῦτο δ' ἀόριστον (1025^a24-5) and K8 ὅτι δὲ τοῦ κατὰ συμβεβηκός ὄντος οὐκ εἰσὶν αἰτίαι καὶ ἀρχαὶ τοιαῦται οἵαιπερ τοῦ καθ' αὐτὸ ὄντος, δῆλον (1065^a6-8). Whatever the relation between books E and K, it seems clear that for Aristotle accidental beings do not have *per se* causes. See also Urbanas, *La notion de l'accident*, p. 160.

²² For a discussion of accidental vs. *per se* causes, see Dudley, *Aristotle's concept of chance*, p. 292.

²³ This has been argued most notably by Matthews and then taken up by Cohen, who conceives of particulars in the non-substantial categories as having a dual nature: they are particulars in their category, but accidents of their substance. In the latter sense they are restricted in time and thus become essentially like events in character. See: Seth Cohen, “Accidental beings in Aristotle's ontology,” in G. Anagnostopoulos and F. Miller (ed.), *Reason and analysis in ancient Greek philosophy: Essays in honour of David Keyt* (Dordrecht, 2013), p. 231-242; Gareth Matthews, “Accidental unities,” in M. Schofield and M. Nussbaum (ed.), *Language and logos: Studies in ancient Greek philosophy* (Cambridge, 1982), p. 223-240. Neither of the two has however expounded the implications of their observations for Aristotle's stance towards determinism.

tratus than most commentators have assumed.²⁴ Aristotle's grounds for dismissing being *per accidens* from the inquiry rest on the claim that it is ἀόριστον (E4 1027^b34) and thereby utterly *unscientific*. By ἀόριστον he means causal inscrutability, and as such this claim depends crucially on a robust notion of the accident. This is why the excursus is key to understanding the overall argument.

4. THE FUNCTION OF THE NOTIONS OF ΣΥΜΒΕΒΗΚΟΣ IN THE ARGUMENT AGAINST DETERMINISM

Right before the excursus Aristotle says that since the accident is nothing but a name, Plato did well to classify the sophists as dealing with what is not, for they talk about the accident more than anyone else.²⁵ The sophistic puzzle he then mentions, and against which I think E3 is directed, wrongly presupposes that an identity relation holds between certain accidental predications. The sophists' argument supposedly went something like this:

P₁: Everything that is, but has not always been, has come to be (1026^b18).

P₂: Musical Coriscus has come to be literate (1026^b19).

P₃: Musical Coriscus is identical with literate Coriscus (implicit).

C: Literate Coriscus has come to be musical (1026^b19-20).

Immediately after the excursus, Aristotle presents the anti-determinist *tollendo tollens* argument of E3, which takes up again the sophistic puzzle and of which on our reading the following *causa* Nicostratus has to be seen as an illustration. The argument is supposed to show the falsity of the sophists' premise by the absurdity of its logical consequence:

If all ἀρχαί and αἴτια undergo a process of generation and corruption (=reformulation of P₁),

then everything will be of necessity.

But not everything is of necessity.

²⁴ Most scholars have focused almost exclusively on E3 and the *causa* Nicostratus, so e. g. Heinemann, Madigan, Weidemann, Grgić, Kelsey, Panayides and to some extent Sorabji. Williams treats E2 and E3 together but does not make explicit the important connection between the sophistic argument preceding the excursus and the formulation of the anti-deterministic position after it. But see Roland Polansky and Mark Kuczewski, "Accidents and processes in Aristotle's *Metaphysics* E3," *Elenchos*, 9 (1988), p. 295-310.

²⁵ 1026^b14-16. The reference is likely to *Sophist* 254a.

Therefore, not all ἀρχαί and αἴτια undergo a process of generation and corruption.²⁶

Aristotle seems – *prima facie* – to take for granted that it is absurd that everything is of necessity. However, Aristotle is not begging the question here: he has good reason to think that the sophist position entails a certain kind of determinism, and for this reason in the excursus offers the robust notion of the accident just sketched as an argument for his premise that not everything is of necessity, in order to block not only this but *any* kind of determinism.

Aristotle's worries about determinism are rooted in the monism of the Eleatics, according to which, precisely on grounds of their denial of coming-to-be and passing-away, it is not true that “many things are,” but “only what is itself is.”²⁷ Such denial of coming-to-be and passing-away is, according to Aristotle, also entailed by Megarian logical determinism, because by conflating actuality and potentiality it blocks unactualised possibilities.²⁸

Like Kelsey, I think the way Aristotle understands the sophist position may be taken to entail as much:²⁹ for principles and causes to be, is

²⁶ 1027^a29-32. These lines have caused commentators much trouble. There are different ways of translating them, and especially the force of the infinitives γίγνεσθαι καὶ φθείρεσθαι has given rise to divergent interpretations, see Madigan, “Metaphysics E.3,” p. 125-6. I acquiesce in Ross's translation, for the same reasons as Polansky and Kuczewski, “Accidents and processes,” p. 299 note 6. There is no need, however, on this basis to interpret accidents as coming to be instantaneously, as some have done (cf. Christopher Williams, “Some comments on Aristotle's Metaphysics E.2,3,” *Illinois classical studies*, 11 (1986), p. 181-183). Another issue is how to take εἰ τοῦ γιγνομένου καὶ φθειρομένου μὴ κατὰ συμβεβηκὸς αἰτιὸν τι ἀνάγκη εἶναι: what is qualified by μὴ κατὰ συμβεβηκὸς? There is no *ultima ratio* here, but based on our interpretation, we want to read it with αἴτιον: If everything that appears or disappears has to have a non-accidental cause, everything will be of necessity.

²⁷ Physics I, 191^a31-33, 191^b11-13. Cf. Timothy Clarke, “Aristotle and the ancient puzzle about coming to be,” *Oxford studies in ancient philosophy*, 49 (2015), p. 129-150, especially p. 131 where he argues that it is likely that Aristotle had Parmenides in mind here.

²⁸ Cf. *Met.* Θ 1046^b29-1047^a4.

²⁹ On the question what Aristotle takes the sophist position to be I roughly agree with Sean Kelsey, “The argument of Metaphysics VI.3,” *Ancient philosophy*, 24 (2004), p. 125-127. More precisely, I agree with Kelsey and the majority of commentators (e. g. Ross, Kirwan, Sorabji; against Williams) that Aristotle is concerned with principles and causes that make their transition from not-being to being and back without literally undergoing the process of generation and corruption in the usual Aristotelian sense. Further, I agree with Kelsey: that for principles and causes to be, means for them to be causes and as such to be causing; that Aristotle assumes that the principle of transitivity applies; that there is a teleological element in the notion

to be in the process of causing; if *Y* is causing *Z* but has not always done so, *Y* has to have come into being; since (at least on Aristotle's reading in 1027^a29-30) P_1 stipulates that what comes into being must undergo a process of (non-accidental, *per se*) generation, *Y* has to be caused (*per se*, i. e. *qua* cause for *Y* to cause *Z*) by something else *X*, and so *ad infinitum*. By the principle of transitivity, any present or future event *Y* and *Z* will be caused by the causing of a causing...of a cause X_n in the past, so that at any time *t* X_n is the transitive *per se* cause of *Y* and *Z*, inasmuch as its causing a cause in order to cause a further cause etc. is always underway.

If we now think of the totality of events, all of which must per P_1 be caused in this way, there is no room for possibility. Possible events, in the sense that they might or might not come about, would have to have causes that are already underway, but then, if they come about, the possible event was necessary all along, or, if not, there must be causation underway also for all things that are not.³⁰ But if everything that is and is not is thus *per se* generated, this amounts to the denial of unactualised possibilities of Aristotle's Eleatics / Megarians. Based on the criticisms of his predecessors, it is plausible that Aristotle takes P_1 to imply a form of causal determinism that is problematic for some of his most cherished philosophical tenets in his theory of change and causality. What, then, is wrong with the sophists' argument? The sophists avail themselves of a double application of the Leibnizian law of the substitutivity of identicals (P_3) and, somehow fallaciously, produce a paradoxical conclusion (C contradicts P_2). I think there are two issues for Aristotle here.

First, I agree with Williams that one major worry of Aristotle's is about such obstacles to substitution in predication theory,³¹ and that

of *per se* generation; and that for Aristotle causing and coming to be are flip sides of the same phenomenon. I do not agree with Kelsey that Aristotle does not really mean at 1027^b12-14 that there are things that have no causes (the accident *tout court* does not have any), and the general interpretation that results.

³⁰ This is roughly what Kelsey suggests as the only alternative way out for Aristotle's opponent, see Kelsey, "The argument," p. 130.

³¹ This a speciality of the sophists, e. g., the "hooded man" in *De sophisticis elenchis*, 24. Another context pertinent to sophistic fallacies is suggested by Polansky and Kuczewski, "Accidents and processes," p. 301: in a passage of the *Theaetetus* (154^b1ff.) dealing with sophistic arguments concerning generation, Socrates points out a phenomenon that has come to be called "Cambridge change." This is an apt parallel, because when Theaetetus grows taller than Socrates by a head, the generation Theaetetus is undergoing is predicated non-accidentally, whereas the Cambridge change that Socrates is undergoing by becoming shorter than Theaetetus by a head is predicated accidentally.

his approach and solution is in spirit perhaps not too far from the idea behind Russell's theory of descriptions.³² Aristotle has denied elsewhere the applicability *salva veritate* of Leibniz's law to predications concerning "kooky" accidental beings.³³ "Musical Coriscus" may be the logical subject of a proposition, but its unity as such is merely accidental and thus it cannot be substituted *salva veritate* for "literate Coriscus," even though the subject "Coriscus" is identical in both accidental expressions.

Second, however, Aristotle is here especially concerned with the threat of Megarian determinism (or ultimately Eleatic monism), which he takes to be entailed by the seemingly analytic truth of P₁. The problem here concerned is one that Aristotle also wrestles with in Physics I.7-9 and *De generatione et corruptione* I.3: the puzzle of coming-to-be from not-being.³⁴ On the metaphysical level relevant to the context of E2-3, he now denies the validity of P₁ on grounds of his stochastic model of the accident that casts the predicative restrictions of this sense of being in the temporal-causal context of his physical notion of generation *simpliciter*.

Consider: if Coriscus is musical and literate and has necessarily become so in the way the sophists would have it, there would have to be a single *per se* cause whose completion is "literate musical Coriscus." As any number of accidental attributes can be truly predicated of a given being, by P₁ any such (non-eternal) being would have come to be so by a process of generation, i. e., would have been caused by a *per se* cause for the totality of its conjunctions with truly predicated attributes. But then, if any arbitrarily complex accidental being has a specific *per se* cause, this cause would also determine the falsity for the negations of all truly predicated attributes, and thus everything that is or is not would be efficiently caused at any time *t*. In that case, there would be no point in speaking of the phenomenon of coming-to-be / causation at all, because what we mean by such talk is that something *rather than something else*

³² Christopher Williams, "Aristotle's theory of descriptions," *The philosophical review*, vol. 94, no. 1 (1985), p. 63-80.

³³ The *locus classicus* is *Analytica posteriora* 83^a4-14; but also *De interpretatione* 11, 20^b31-21^a32, where Aristotle discusses multiple predication. The passage is difficult, but it is clear that Aristotle warns that you cannot, for example, infer from "He is a good cobbler" that "He is good" and "He is a cobbler" are both true. The same may be taken to apply to "literate musical Coriscus"; see Hermann Weidemann, "Die Variabilität von Wortbedeutungen im Satzkontext bei Aristoteles," *Incontri linguistici*, 31 (2008), p. 121-135. Cf. also Williams, "Aristotle's theory," p. 64.

³⁴ The solution to the puzzle is that any motion occurs in a *hupokeimenon* (i. e., matter), and it occurs so accidental to it; see Clarke, "Aristotle and the ancient puzzle," p. 147-148.

is come to be / caused.³⁵ In other words, if the distinct roles the notion of cause plays in the respective semantics of εἶναι and γινέσθαι is not properly appreciated, the sophists commit themselves to the Eleatic / Megarian denial of coming-to-be.

But, so we have to understand Aristotle, “literate musical Coriscus” is an accidental conjunction of two predicates with an underlying logico-physical subject that is true neither necessarily nor mostly, and there is no other cause for it than the accident *tout court*. Thus, for “literate musical Coriscus” to have come to be accidentally is to have come to be without any cause, which is the same as to say that this being did not undergo a process of generation in the usual sense. Certainly, there are *per se* causes for each of the elements in the conjunction, but this, Aristotle’s claim must be, does not amount to a cause for the kooky being “literate musical Coriscus.”

The *causa* Nicostratus, then, is an illustration of how a series of accidental comings-to-be can retrospectively add up to an explanatory causal chain that however does not give us any clue about being *qua* being, because for each of the elements in the causal chain, for lack of *per se* causes no substantial scientific description can be given. Complex accidental beings, of which “literate musical Coriscus” is only a simplified token, exhibit all sorts of forms and combinations and, having full-fledged causal force, they can bring about all sorts of things, without having been caused themselves.³⁶ This is what Aristotle asserts at the beginning of E3: “That there are principles and causes which can appear and disappear without ever coming-to-be or passing-away, is obvious” (1027^a29-30).

In the concluding paragraph to the entire argument of E2-3 Aristotle writes that in remounting a causal chain we come to a halt where the accident *tout court* (ἡ τοῦ ὁποτέρῳ ἔτυχεν αὐτῆ; literally, the “whichever way”) is the ultimate cause of generation we can make out; and that we must carefully investigate to what kind of cause, material, final, or efficient, such a tracing back leads.³⁷ This passage has especially troubled commentators. But on the reading so far presented the only possible interpretation is that Aristotle’s exhortation regards not the generic cause

³⁵ Cf. Kelsey, “The argument,” p. 129.

³⁶ Cf. Sorabji, *Necessity*, p. 8-10.

³⁷ δῆλον ἄρα ὅτι μέχρι τινὸς βαδίζει ἀρχῆς, αὐτὴ δ’ οὐκέτι εἰς ἄλλο. ἔσται οὖν ἡ τοῦ ὁποτέρῳ ἔτυχεν αὐτῆ, καὶ αἴτιον τῆς γενέσεως αὐτῆς ἄλλο οὐθέν. ἀλλ’ εἰς ἀρχὴν ποίαν καὶ αἴτιον ποῖον ἢ ἀναγωγὴ ἢ τοιαύτη, πότερον ὡς εἰς ὕλην ἢ ὡς εἰς τὸ οὐ ἔνεκα ἢ ὡς εἰς τὸ κινήσαν, μάλιστα σκεπτέον (1027^b11-16).

of the accident *tout court* (nor of accidental being), because he has just stated that it is the indeterminacy of matter (and the accident *tout court* respectively), but that for each such tracing back, we must figure out of what sort the decisive triggering cause was.³⁸

In conclusion, Aristotle in E2-3 goes out of his way to point out the fallacy of the seemingly analytic truth of what likely was a popular sophistic argument. He pauses over this, because he not only takes it to violate the syntactical laws of predication theory, but also to show a relevant deeper metaphysical confusion about the semantic distinction of "being" and "becoming" that happens to result in a form of determinism he is eager to refute. In order to do so, he presents the robust stochastic notion of the accident, so that accidental beings can be conceptualised as uncaused entities that however possess full-blown causal force.³⁹ He thereby not only refutes what he takes to be the threat of Eleatic / Megarian monist necessitarianism, but also the weaker form of its underlying causal determinism, because any one of indefinitely many accidental beings can deploy its causal force while not being caused itself. The picture we should get from this is not that of a world rigidly ordered by an all-encompassing causal structure that allows for the odd exception as fall-out of the system. It is rather that of a world in which indefinitely many things are not entirely graspable by the causal structure, but in which a certain regularity reliable enough for us to build our causal structure on holds sway over critically large domains. The upshot of this is a physical indeterminism additional to metaphysical libertarianism.

5. AVERROES' REFERENCE TO PHYSICS II.4-6: THE ACCIDENT IN THE CONTEXT OF NATURAL CAUSALITY

As Glasner and Cerami have recently brought to attention, Averroes went to considerable lengths in order to present a unified interpretive system of Aristotelian causality that steers clear of occasionalist *kalām*

³⁸ This is also Dudley's interpretation, see Dudley, *Aristotle's concept of chance*, p. 297 and note 109. Polansky and Kuczewski, "Accidents and processes," p. 309, suggest the same interpretation.

³⁹ Sorabji's interpretation seems right in that he stresses that Aristotle's point is to show that there are uncaused causes and to thereby refute determinism, but not in that he postulates a subclass of accidents that are uncaused coincidences, cf. Sorabji, *Necessity*, p. 8-10; Heinemann's criticism of Sorabji does not seem to have any grip on the reading here proposed, because he entirely neglects the composite nature of the logico-physical accident relevant to the metaphysical context of this chapter; see Robert Heinemann, "Aristotle on accidents," *Journal of the history of philosophy*, vol. 23, no. 3 (1985), p. 311-324.

positions of his time as well as of the Avicennian “Giver of Forms” and other interpretations of his philosophical predecessors he judged misguided; a major concern in this enterprise was to ascertain the rational intelligibility of a world structured by God’s providence.⁴⁰ The notion of uncaused causes and continuous accidental causation that Aristotle puts forward in his refutation of determinism cannot be but detrimental to this project, and Averroes has a way to wring himself out of this by reading this passage through the lens of his interpretations of Physics II and VIII.

In his commentary on E2-3 Averroes seems puzzled about the concluding passage where Aristotle says that we must investigate to what kind of cause the tracing back of a causal chain eventually leads us (1027^b11-16) and refers explicitly to the Physics:

He means: We have to inquire especially about that which is by accident, whether it goes back to the material, the final or the efficient cause. But he has already explained in the second book of the Physics that it goes back to the efficient cause. And it seems that that place is more adequate than mentioning it here. It is however possible that this has come before and that he inquired into this in the part of this book that has been lost, and that what he says about it here is a confirmation of it within the inquiry about this notion of what is by accident.⁴¹

He takes the passage in the way we have argued it should not be taken and identifies – in line with his reading of Physics II.2-4 – the cause of the accident with the efficient cause. There is a textual explanation for this. The considerations of textual criticism voiced here indicate that Averroes entertains the possibility that the relevant discussion could have featured in a lacuna of his translation. There is such a lacuna marked out in the MS right in the middle of the excursus.⁴² Averroes’ translation misses a crucial bit of information: the word ὕλη is not translated in the preceding sentence that gives the αἴτια of the accident *tout court*; consequently, the translation up to the lacuna is distorted and has little

⁴⁰ Glasner, *Averroes’ physics*; Cristina Cerami, *Génération et substance. Aristote et Averroès entre physique et métaphysique* (Boston, Berlin, 2015). They disagree, however, on whether and to what extent Averroes’ system is to be seen as deterministic.

⁴¹ Averroes, Long commentary on the Metaphysics (LCM) = *Tafsīr mā ba’d at-tabī‘at*, ed. Maurice Bouyges (Beirut, 1991), p. 738.9-15.

⁴² The lacuna marked out by *nāqis min al-yunānī* (LCM 723.5) in fact only comprises 1027^a16-19: [...], πότερον οὐδέν ἐστιν οὔτ’ αἰεὶ οὔθ’ ὡς ἐπὶ τὸ πολὺ. ἢ τοῦτο ἀδύνατον; ἔστιν ἄρα τι παρὰ ταῦτα τὸ ὁπότερ’ ἔτυχε καὶ κατὰ συμβεβηκός. ἀλλὰ πότερον τὸ ὡς ἐπὶ τὸ πολὺ, τὸ δ’ αἰεὶ οὔθενι ὑπάρχει [...], but judging from the poor translation in its vicinity, it seems likely that the surrounding lines on the Greek manuscript were damaged as well.

to do with the Greek. It reads: "And there would be for the accident another cause, not the 'for the most part possible' (*aktar dalika al-imbān*), in another way. And this must be grasped first, if there is not something other than this. [lacuna]."⁴³

Averroes, not having read that the *αἴτια* of the accident *tout court* is matter, in retrospect naturally assumes that Aristotle could have carried out at this point the discussion of whether there is another cause of beings *per accidens* than simply the "for the most part possible." He seems confident, however, that the discussion would only have confirmed Physics II.2-4, which he thinks is also the more appropriate context. Thus, he reads E2-3 with the idea in mind that chance is a cause accidental to the efficient cause; by conflating the notions of chance and accident, he seems to think that the cause of accidental beings (*mā bi-l-‘arad*) is an efficient cause. Aristotle in Physics II.2-4 is open to interpretation with regard to what kind of cause he takes chance to be accidental to.⁴⁴ But Averroes' reading of chance as accidental to the efficient cause in these chapters of the Long commentary on the Physics (LCP) is crucial to his approach to E2-3.⁴⁵ Three points will serve to characterise his outlook on the matter.

First, in opposition to Avicenna's well known modal convictions according to which everything that is has an efficient cause and is thus necessary, Averroes conceives of necessity as "that which is always in the same state" and thus views Aristotle's essentially temporal stochastic model of the accident in predominantly modal terms.⁴⁶ For him only supralunar beings are necessary, while everything that is in the sublunar world is possible in that it changes from being into not-being and back. Hence, for Averroes to say that everything is necessary boils down to saying that everything is always in the same state, which is pretty

⁴³ LCM 723.3-5.

⁴⁴ For a discussion, see Lindsay Judson, "Chance and 'always or for most part' in Aristotle," in *id.* (ed.), *Aristotle's Physics: A collection of essays* (Oxford, 1991).

⁴⁵ Averroes, Long commentary on the Physics (LCP) = *Aristotelis de Physico auditu libri octo cum Averrois Cordubensis variis in eosdem commentariis*, vol. IV of *Aristotelis opera quae extant omnia*, Venetiis apud Junctas, 1562 (Frankfurt a. M., 1962), 54E-98C.

⁴⁶ LCP, 66F. In commenting on both parallel passages on the distinction according to the frequency of events (always, for the most part, rarely) in Physics 196^b10-13 and Metaphysics 1026^b27-33 Averroes distinguishes between necessary, possible for the most part, and not possible for the most part (LCP, 66F: *possibilis*; LCM, 724: *mumkin*). See also Belo, *Chance and determinism*, p. 125-127. Averroes uses a singular for necessary being, although the lemma has a plural. This perhaps indicates that he is thinking of God.

close to the Aristotelian worries about Eleatic / Megarian determinism. We shall see that Averroes thinks that all that Aristotle wants to refute is this strong monist necessitarianism of the Eleatic / Megarian type, and not the weaker causal determinism.

Second, again against Avicenna, Averroes enters a lengthy discussion on the question whether chance also resides in the *possibile aequaliter*.⁴⁷ He reports that, contrary to Themistius' position that chance is only found in that which is rarely (*minori parte*) possible, Avicenna held that chance is also found in that which is equally (*aequaliter*) possible. To Averroes this must have threatened the scrutability of the causal structure, as he argues that if it is equally possible for something to exist or not, there is nothing for it to push it either way, so that the equally possible can only exist in potentiality.⁴⁸ In this way nothing uncaused ever causes anything.

Third, in his general outlook on the role of chance and accidental causation, Averroes not only asserts that every chance event or accidental causation also has an efficient cause but emphasises the supremacy of the final cause specifically with respect to the perpetuation of species. Explaining the Aristotelian principle that nature does nothing in vain, in his commentary to the second part of Physics II, he writes:

Since the agent follows the form, it necessarily also follows the nature of matter. If that weren't so, something could come into being by chance, but then there would be no agent, or if there were one, it would be in vain.⁴⁹

For Averroes, nothing substantial comes into being by chance: in the generation of species all agents act according to the form, which in nature is the respective agent's own essence. This is why in natural causation the final aspect is the most important as it guarantees that every species engenders a similar species, and that more generally the generation of animals works as a necessary non-accidental *per se* causation by virtue of the sperm's being for the sake of the animal.⁵⁰ Hence, for Averroes the only cause of the accidental being is the "for the most part possible:" since the accidental being itself lacks a species, it does not have causal force itself.⁵¹

⁴⁷ LCP, 66G-67M.

⁴⁸ LCP, 66I-L. Cf. Belo, *Chance and determinism*, p. 147-150.

⁴⁹ LCP, 75M. Cf. Cerami, *Génération et substance*, p. 668, where she rightly points out that Averroes thinks that "si l'on supprime la nécessité qui lie la cause agente à son effet et que l'on admet l'existence d'un hasard, force est de nier aussi l'existence d'une finalité naturelle."

⁵⁰ LCM, 868.15-869.4 and LCP, 80D.

⁵¹ LCM, 868.15-17: "Every species engenders another species similar to it. Man, for

By opposing the idea of the supremacy of final causation in the generation of species to the thin notion of the accident in E2-3, which given his conception of necessity and of the impossibility of the *possibile aequaliter* he cannot construe as the argument against determinism sketched above, the Commentator takes away significantly from the force this notion has against causal determinism: an accidental being for him is an exception to the rule of final causation, always graspable in terms of efficient causation, and without any causal force of its own.

6. AVERROES ON PHYSICS VIII.1: ACCIDENT AND COSMOLOGY

Related to this is another reference to the *Physics*, in which Averroes points out that the cause of accidental being does not have an actuality by nature:

He means: If that which is by accident weren't existent, then all existing things would be by necessity. And there would be for that which is by accident a cause other than the cause of *the possible for the most part* (*'illat al-mumkin al-aktarī*). He only says this because the cause of that which is by accident is the cause of *the possible for the most part*. Therefore, it does not have an actuality by nature, but another actuality about which he has explained himself in the *Physics*.⁵²

It is possible that the reference here is to the discussion of *Physics* II.6 where Aristotle says that the "spontaneous" is the case when something else happens, but the thing itself happens in vain,⁵³ but given that no book is specified, it is also possible that Averroes here refers to the *Physics in toto*, and the use to which he believes Aristotle to put the notion of accident more generally. As Glasner has convincingly argued, Averroes struggled with the succession argument in *Physics* VIII.1 like with no other in the Aristotelian corpus – partly, because he was first worried that the argument was not watertight (a *declaratio diminuta*)⁵⁴ and partly, because he saw it as playing a pivotal role in Aristotle's overall system that had been misconstrued by his predecessors such as al-Fārābī, Ibn Bāḡḡa and Avicenna and thus exposed them to the attacks of al-Ġazālī.⁵⁵ More specifically, he reproaches al-Fārābī and his followers

example, engenders man, lest the generation come about by accident and against nature, as is the case with the mule that is born from horse and donkey."

⁵² LCM 726.10-14.

⁵³ *Physics* 187^b 18-36.

⁵⁴ LCP, 339C. In fact, it is the only argument for which we have, if Glasner is right in identifying two strata of composition for the LCP (Glasner, *Averroes' physics*, p. 92), two versions for all three types of commentary.

for not having succeeded in linking up horizontal / sublunar and vertical / supra-lunar causality.⁵⁶

Applying the distinction between continuity and contiguity of Physics V.3 to motion generally he infers from Physics V.2, where Aristotle says that a motion can cause another motion only accidentally, that the succession argument only establishes the eternal succession of successive motions of horizontal causality, accidentally causing one another, whereas the continuous motion of the heavenly spheres guarantees the transfer of the continuity of motion from vertical to horizontal causality, and this, again, accidentally.⁵⁷ In construing the two missing links, that between sublunar motions and that between horizontal and vertical causation, Averroes makes use of Aristotle's notion of the accident as the guarantor of the possibility of change as well as of a form of causal determinism. He argues that sublunar motions cause one another accidentally, because

[From the succession argument] it does not follow that the second movement is contiguous to the first, but just that it is successive; I mean that there is time of rest in between. And that is where *the possible* is.⁵⁸

⁵⁵ Glasner, *Averroes' physics*, p. 85 and chapter 6 *passim*. "This is what al-Fārābī thought in his treatise *On changeable beings* [that Aristotle's intention was to establish that before any motion there is a motion and that he adduced the definition of motion], as did others who followed him, such as Avicenna and Ibn Bāḡḡa. Philoponus saw this before them and endeavoured to answer Aristotle, because he assumed that a motion is preceded by a motion *essentially*," *Epitome of the Physics*, Arabic 134.7-135.2, Hebrew 40^b11-18; cf. Glasner, *Averroes' physics*, p. 85.

⁵⁶ He gives a pretty clear explanation of this at LCP, 339A-F. Averroes refers to what he thinks is a faulty argument in the lost treatise "On changing beings" by al-Fārābī that he says was directed against Philoponus, cf. Herbert Davidson, *Proofs for eternity, creation, and the existence of God in medieval Islamic and Jewish philosophy* (New York, Oxford, 1987), p. 43-44. We know little about the content of this treatise, but see Marwan Rashed, "Al-Fārābī's lost treatise on changing beings and the possibility of a demonstration of the eternity of the world," *Arabic sciences and philosophy*, vol. 18, no. 1 (2008), p. 19-58, for a reconstruction of its philosophical tenor.

⁵⁷ This is the "turning point" for Glasner, *Averroes' physics*, p. 79, who could have adduced further support for her argument from the two versions in the Averroes' epitome of the *Metaphysics* (see Rüdiger Arnzen, *On Aristotle's Metaphysics: An annotated translation of the so-called Epitome* (Berlin, Boston, 2010), p. 171-174). There are of course ample textual grounds for such an interpretation: *De generatione et corruptione*, *De partibus animalium* and the *Physics* itself. It was, however, and still is, a highly original interpretation, not least because Averroes thus safeguards divine providence and avoids a theodicy.

⁵⁸ LCP, 342D14-E7. Glasner, *Averroes' physics*, p. 78, explains the "time of the possible" thus: "According to Averroes Aristotle proved that there must be infinite successions of sublunar events, and that the linking between successive motions cannot

The idea is that to any given motion there are in theory indefinitely many accidental motions that can be caused by it. And this is why things could have been other than they are, i. e., this is why not everything is always in the same state. But such a world would be completely arbitrary, and it is obvious that in our world there is a certain regularity as to which motions cause which other motions:

However, it does seem to follow from this argument that *the possible* must be contiguous, i. e., that the non-contiguous must be contiguous because of a motion that is itself continuous.⁵⁹

The continuous circular motion of the heavenly spheres causes the contiguity of the linear motion in the sublunar realm and thus guarantees that all efficient causation ultimately responds to the principle of final causation for the sake of God. What Averroes means by saying that without the accident everything would be necessary is that if the heavenly spheres could not cause motions in the sublunar realm accidentally (or God the heavenly spheres), then there would be no movement at all, and everything would be necessary in the sense of always being in the same state.

It is thus plausible to read Averroes' reference to the *Physics in toto*. For the succession argument gives the cause for *the possible for the most part*, which is also the cause of the accident, namely the successive character of sublunar motion enhanced to contiguity caused by the heavenly spheres that results in his *forma fluens* theory of motion according to which there is a time of rest between sublunar motions in which the *possible (for the most part)* resides.⁶⁰ In this *time of the possible*, everything has, theoretically, an actuality other than its natural actuality.

be essential. Therefore the time between two consecutive motions is the time of the possible. The argument, however, is not yet complete. The structure of a successive chain is too loose. It remains for Averroes to 'close the gaps,' that is, to establish that this succession must be contiguous, without giving up 'the times of the possible.' To this end he turns to the heavens: the contiguity of sublunar chains is not essential but consequent upon another motion that is truly continuous, namely the celestial motion."

⁵⁹ Middle commentary on the *Physics* VIII.2.2 version A, anonymous translation: New York MS 67^a6-14, Oxford MS 96^a21-^b2; Zerahya's translation 112^a12-23; cf. Glasner, *Averroes' physics*, p. 79.

⁶⁰ Glasner, *Averroes' physics*, p. 120-124 argues that Averroes partly gets to his *forma fluens* view of motion by his reinterpretation of Aristotle's notions of continuity and contiguity. This is in sharp contrast with Avicenna's *fluxus formae* view; see: Jon McGinnis, "A medieval Arabic analysis of motion at an instant: The Avicennan sources to the *forma fluens* / *fluxus formae* debate," *British journal for the history of science*, vol. 39, no. 2 (2006), p. 1-17.

Similarly, the heavenly spheres have an actuality that is not in their nature: while their natural actuality is the eternal circular movement for the sake of God, their accidental actuality is the regular movement of the perpetuation of species.

7. AVERROES ON THE ACCIDENT IN METAPHYSICS E2-3: ONTOLOGICAL STATUS, GENERATION, AND DETERMINISM

Given his cosmological assumptions, it is not surprising that Averroes is convinced that the problem Aristotle wants to tackle in E2-3 is limited to the determinism of the Eleatic / Megarian type: “The consequence of this [that every principle and cause comes to be by a process of generation] is Monism and this is contrary to what one thinks or perceives.”⁶¹ All that Averroes needs Aristotle to refute, then, is that everything is always in the same state, so that it will suffice to show that not every principle or cause comes to be only as causing its natural actualisation, but that they can also have other non-natural actualisations.

His commentary on E2-3 can be divided into three argumentative steps. First, concerning Aristotle’s claim that the accident is close to non-being, another peculiarity of the translation eases the way for Averroes to bring to bear the notion of species from the Physics on the argument of E2-3:

*For the accident is seen as close to what does not exist as a species (bi-naw^ci translates τῷ). He means: What is not existent as one of the species. And this is also clear from arguments which are similar. Things that pertain to another species (bi-naw^ci aḥari translates ἄλλον τρόπον) do have generation and corruption. But as for that which pertains to the species of the accident, it does not have that. He means: the fact that the generation of things that exist per accidens is counted among that which is not existent is shown by the things that persist. For things that are existent per se have one of the species, and in them there is generation and corruption, i. e. in their individuals. As for the things that are existent per accidens, they don’t have one of the species, and therefore there is no generation and corruption in them. He only meant that there is no species per accidens.*⁶²

Averroes mistakenly reads the Arabic homonym *naw^c* as the technical term for “species” and advances a plausible interpretation that is

⁶¹ LCM, 733.16.

⁶² LCM, 721.4-13. Aristotle does not use εἶδος (species) even once in E2-3. Uṣṭāt translates both τῷ (1026^b21) and ἄλλον τρόπον (1026^b22-23) with *naw^c*, one of the stock translations for εἶδος. Averroes assumes, from the context, and with Physics II.2-4 in mind, that Aristotle must be speaking about the perpetual generation of species as set out *De generatione et corruptione* and *De partibus animalium*.

however not supported by the Greek text. The distinction between the individuals of the eternally persisting species that undergo generation and corruption and accidental beings that do not is significant for his original interpretation of the *causa* Nicostratus:

It has become clear from this [the *causa* Nicostratus], then, that that which comes-to-be and that which passes-away have causes, and that those causes respond, terminate in and ascend to a First Cause. Even if it is impossible that the causes of [both] coming-to-be and passing-away continue *ad infinitum*, the difference between the two is however that passing-away is something that comes to be necessarily, whereas coming-to-be is something that does not come to be necessarily. If that were the case, then everything would exist necessarily. And if that were so, coming-to-be would be something existing in the essence of things in which there is coming-to-be, like the quiddity of passing-away is existent in their essence.⁶³

Averroes clearly thinks that everything that has a species is causally retraceable to God. But, and for him this is the crucial point of the argument and his second argumentative step, contrary to the necessary corruption of all sublunar things, their generation is not necessary. This is reminiscent of the *time of the possible* between two successive movements. For if the actualisation of the essences of things possible would include bringing about their coming-to-be, in the fullness of time everything would come to be and Eleatic monism were true. But, the argument seems to be, this is not the case, because between two events there is a time in which it is possible that the second be different from what was to be expected from the first. Averroes rescues unactualised potentialities. However, he does not go as far as entertaining the idea that accidental beings as such are causally impenetrable. This is how he paraphrases the critical sentence at the beginning of E3: "That there are causes that come to be and then pass away *without generating anything but themselves and without corrupting anything but themselves*, this is evident."⁶⁴ Averroes does not think that there are uncaused causes, but that accidental beings are causally mute, like the sterile mule whose cause is a horse's semen that is however actualised in a non-natural way.⁶⁵

⁶³ LCM, 735.6-13.

⁶⁴ LCM, 730.10-11, reading: *ʿan hāhunā ʿillalan tatakawwinu tumma tafsidu min ḡayri an takūnu li-ḡayrihā ʿaw tafassidu ḡayrihā fa-bayyinun.*

⁶⁵ Cerami, *Génération et substance*, p. 616; and, in general, Cerami overall argues that for Averroes "[l]'étude de la génération nous montre ultimement que ce n'est qu'en réinstaurant l'absolue nécessité de la causalité sensible et en la nouant à la nécessité de l'action céleste qu'on peut montrer l'existence de Dieu et en expliquer la nature.

This is Averroes' third argumentative step, illustrated by yet another peculiarity of the textual transmission. Averroes cuts in half what in Greek is clearly meant as one sentence, so that we have the following translations:

ἔσται οὐδὲν ἢ τοῦ ὁποτέρῳ ἔτυχεν αὐτῆ, καὶ αἴτιον τῆς γενέσεως αὐτῆς [ἄλλο]⁶⁶
οὐθέν. ἀλλ' εἰς ἀρχὴν ποίαν καὶ αἴτιον ποῖον [ἢ ἀναγωγὴ ἢ τοιαύτη, πότερον
ὡς εἰς ὕλην (...)] (1027^b12-14).

This will be, then, the “whichever-way,” and the cause of its generation will be nothing. But to what kind of principle and what kind of cause [such a tracing-back leads, whether to the material cause, or...].

Averroes, LCM, *HĀ'*, Textus 7 730.5-7:

واما ان يأخذ الى ما أدرك بالبخت فلا يكون علة لحركة البتة ولاكن الانتهاء الذي يكون مثل
هذا يكون الى ابتداء ذي كيفية وعلة ذات كيفية.

If one takes that which is perceived to be by chance, this is not at all the cause of movement, but the end which, like this, is towards a principle with a quality and a cause with a quality [*finis textus*].

Averroes explains this barely understandable passage by simply reiterating: “what happens by chance is not the cause of natural motion,” because it “does not have a species”; and that “it only comes from a principle of a definite nature and a cause of a definite nature, so that what is by accident only supervenes on what is *per se*.”⁶⁷ Because of the faulty translation Averroes is induced to directly contradict the Greek text here, clearly showing that he does not accept the causal inscrutability for accidental beings that are at the core of Aristotle's argument against causal determinism in *Met.* E2-3.

In sum, then, we may say that Averroes, consciously or not, bypasses what on our reading must be the consequences of Aristotle's claims in *Met.* E3 by transposing an argument that operates on the level of events in the world of generation and corruption to the level of cosmology. With this cosmological twist, Averroes is able to safeguard the principle of divine providence. The following chart recapitulates where precisely Averroes diverges from Aristotle in the course of the argument as we have reconstructed it.

Seule cette interconnexion causale, en effet, peut garantir à Dieu sa nature absolument divine et à l'univers sa nature essentiellement bonne. C'est le trait essentiel du néo-aristotélisme averroïste” (p. 673).

⁶⁶ The ἄλλο is only attested in A^bM, from the same family of which Us ā 's translation must have been made, and in Alexander. Our interpretation can accommodate the much better attested reading (EJ Asc. Lat_g) in which ἄλλο is omitted.

⁶⁷ LCM, 735.15-736.8.

Aristotle	Averroes
Def1 An <i>accidental being</i> is a being whose only cause <i>qua</i> such a being is the accident (e. g. the referent of "literate musical Coriscus," i. e. Coriscus <i>qua</i> having those two properties).	Averroes does not systematically distinguish between accident <i>tout court</i> and accidental being.
Def2 The <i>accident tout court</i> is the possibility of a truly predicated combination of subject and predicates, such that it is true neither always nor mostly, so that there is no scientifically accessible cause for it. (There is no <i>per se</i> cause for the combination of "literate musical Coriscus," even though there are causes for Coriscus (his father), as well as for his musicality and his literacy (presumably his teachers); but the combination can be a cause for a song that Coriscus recites from his notes.)	An <i>accident</i> for Averroes is when something happens counter to final causation, i. e., counter to the realisation of a thing's essence. The <i>being</i> so engendered always has an efficient cause, but never any causal power itself (like a mule). (In his theory of movement, there is a "time of the possible" between two contiguous movements, where things follow final causation, as they usually do, and may cause something that is not in their essence, which then however cannot cause anything further.)
P1 There are accidental beings in the above sense	There are accidental beings in the above sense
P2 Such beings do not have a cause, but can cause something else (by Def1 and Def2)	Such beings always have at least an efficient cause, but never cause anything else (by Def1 and Def2)
P3 If everything comes to be by a <i>per se</i> cause, then everything is necessary (i. e., then necessitarianism is true) (e. g., if "literate musical Coriscus" had a single <i>per se</i> cause, then he could never have been otherwise)	If everything comes to be by a final cause, then everything is always in the same state (i. e., then monism is true) (e. g., if God and the Intellects only realized their essence, there would be no world of generation and corruption)
P4 Not everything comes to be by a <i>per se</i> cause (by P1 and P2)	Not everything comes to be by a final cause (by P1 and P2)

Continued on next page

	Aristotle	Averroes
C1	Not everything is necessary (necessitarianism is false) (by P3 and P4)	Not everything is always in the same state (monism is false) (by P3 and P4)
P5	In remounting a causal chain, we may come to an end where the last identifiable cause is an accident (by P2)	In remounting any causal chain, we always ultimately reach God (by P2)
C2	Any kind of determinism is false, physical indeterminism is true	Some variant of theological determinism is true

8. CONCLUSION

A close textual analysis of *Metaphysics* E2-3 has brought to light that Aristotle, by drawing a conceptual distinction between the accident *tout court* and accidental beings, advances a theory of accidents as uncaused causes. On this reading, the peculiar argumentative structure of E2-3 can be shown to make sense as an anti-determinist argument, responding to a sophistic puzzle of which the *causa* Nicostratus is an illustration. Aristotle emerges, at least in these chapters, as rejecting not only necessitarianism, but also the weaker causal determinism in favour of a strong physical indeterminism.

This position must have threatened Averroes' overall exegetical project. Averroes in his Long commentary at times squarely contradicts the Greek text, sometimes induced by faults or lacunae in Uṣṭāṭ's translation, sometimes in plain sight of the contradiction. He rejects the existence of uncaused causes, and instead subsumes the discussion of being *per accidens* in E2-3 under his comprehensive theory of *forma fluens* movement, the material for which he mainly draws from the *Physics*. On his interpretation, E2-3 is of little interest (which explains his sparse comments), because all he takes Aristotle to argue against is (Eleatic) monism, a position that seems implausible to him from the start.

However, Averroes' cosmological notion of the accident as the "time of the possible" between two contingent movements, the second of which can theoretically be different from what was to be expected from the nature of the first, is a highly sophisticated solution to the threat of Eleatic monism. First, it allows him to give an account of the accident that is strong enough to explain what we would usually call a coincidence, e. g. finding a treasure when planting a tree. Second, since for Averroes accidental beings are causally mute and always fully graspable in terms of

efficient causation, he can guarantee that everything is causally retraceable to God and thus keeps intact a theory of causation that is entirely structured by God's providence.