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A More Orderly Nature: Stoic Meteorology and Tides in Seneca's *De providentia*[1]

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This paper argues that Seneca's *praeteritio* on the *kosmos* at the opening of *De providentia* suggests that much of the disorder that we detect in the world is a product of our own spatially and temporally limited perspective. To demonstrate this point, Seneca focuses on meteorological phenomena, arguing that even seemingly chaotic occurrences, like earthquakes, obey some order. By drawing an analogy between these events and tidal activity, Seneca suggests that the temporal logic underpinning these phenomena has simply eluded us, and provides valuable insights into the significance of tides for the development of Stoic meteorology.

Keywords: Seneca, Stoicism, tides, *kosmos*, *De Providentia*.

Introduction

In the treatise *De providentia*, Seneca tries to answer a particularly difficult question posed by Lucilius, namely 'why many evils befall good men, if the universe is governed by Providence' (*quid ... si providentia mundus ageretur, multa bonis viris mala acciderent*, *Prov.* 1.1), as the Stoics claim.[2] We instantly recognize this issue as a variation on the prob-

[1] The main title is a reference to Arist. *Mete*. 1.1.338b2 and its adoption as a subtitle by Wilson (2013).

[2] The text used throughout is that of Reynolds (1977); I have translated the tenses of the indirect question as they would have appeared in Lucilius' direct question. All translations are mine, unless noted otherwise, though I have consulted Basore (1928)

lem of evil, namely how to reconcile the reality of suffering and evil more generally with the existence of an entirely good, omnipotent and omniscient God.[3] Before elaborating his own answer to this question, however, Seneca embarks upon a description of the *kosmos* and the various phenomena contained therein as proof of Providence's existence. Though Seneca acknowledges that it is superfluous to the discussion of Lucilius' question 'to demonstrate that such a great work does not endure without some guardian' (*ostendere non sine aliquo custode tantum opus stare*, *Prov.* 1.2), Seneca's *praeteritio* on this subject continues for some time before he returns to the task at hand.[4]

Within this article, I argue that Seneca's *praeteritio* is not as irrelevant to the central question as it first appears but suggests that the apparent disorder that we detect in the world is a product of our own spatially and temporally blinkered perspective.[5] Given enough time or a wide enough view, even something that initially seems out of place or unfair may actually play a role in the order of the larger whole.[6] To demonstrate this point, Seneca focuses on meteorological phenomena within his *praeteritio*, arguing that even seemingly chaotic occurrences, like earthquakes, obey some order, though it may not be readily apparent to us. In arguing that this is the purpose of the meteorological

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and found his interpretation helpful on several obscure points. I refer to the treatise as *De providentia* or *On Providence* by convention. The copy of Lactantius clearly bore the title 'Why many evils happen to good men, although Providence exists' (*Quare bonis viris multa mala accidant, cum sit providentia*, Lact. *Inst.* 5.22.11), and the *Codex Ambrosianus* has a similar title in its index that speaks of 'some misfortunes' (*aliqua incommoda*). Cf. Reynolds (1977) viii-ix, 1.

3 For a brief history of the problem, see Hickson (2013). For a synthetic and less historical treatment, see Tooley (2019). For an overview of Stoic physics, albeit with little attention paid to Seneca, see Algra (2003).

4 For the formulaic announcement of the *praeteritio*, see Niem (2002) 125 *ad Prov.* 1.2. The rhetorical analysis of the first chapter by Grimal (1950) 242-243, 247 as an *exordium* aiming at *captatio benevolentiae* does not appear to me to be a particularly compelling interpretation of the *praeteritio*, though he is correct that it defines the problem more exactly, even if it does so at unnecessary length. Abel (1967) 106-109 claims that the first two chapters (the proem) are intended to inspire us with love of the *kosmos*, God, and fate, but, if that is the purpose, it is striking that Seneca acknowledges that Lucilius may even find fault with the physical order of the world.

5 Grilli (2000) 263 assumes that the praise of Providence is so irrelevant to the treatise that it can only be explained by Seneca's complete divorce from politics and retreat into a contemplative life.

6 This brings my approach somewhat in line with Abel (1967) 97-123, who shows that the treatise is not a systematic theodicy but an attempt to re-educate Lucilius and remove those false impressions that set him at odds with Providence and Fate.

content, I demonstrate that Seneca provides valuable insights into the central importance of tides to the Stoic reinvention of a branch of philosophy that had previously been dominated by the Peripatetics.

To mount this argument, I have divided the article into three sections. In the first, I explain why the Stoics avoided meteorology prior to Posidonius, drawing attention to how the more disorderly nature of the sublunary world in Peripatetic thought did not cohere easily with their understanding of a world ordered by Providence, and how Posidonius' interpretation of tides might have changed the Stoics' relationship to the meteorological tradition. In the second, I demonstrate that Seneca responds quite deliberately to this earlier tradition of Peripatetic meteorology and offers some insight into how the order of the tides provided the Stoics with an alternative way of understanding the sublunary realm. In the final section, I offer reflections on how several aspects of the *praeteritio* anticipate and reinforce various elements of his argument in the rest of the treatise. The unexpected relevance of what was initially presented as a *praeteritio* means that the very structure of the dialogue reinforces Seneca's central contention that everything happens to us for a reason, even if we cannot immediately understand that reason.

Stoic meteorology

Meteorology was a remarkably static area of ancient philosophy.[7] Many of our surviving texts, such as Seneca's *Natural Questions*, clearly follow the definition of the field used in Aristotle's *Meteorologica* and echo the scope of its content, embracing phenomena as disparate in our minds as comets and earthquakes.[8] Though we might consider some of these phenomena to be astronomical or geological rather than meteorological, ancient readers by the time of Seneca would not have been surprised by volcanic eruptions and sea currents rubbing shoulders with precipitation and rainbows in a work of meteorology.[9] In ex-

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7 Mourelatos (2005) 285.

8 Graver (2000) 48-49, Taub (2003) 125, Hall (2024) 1-3.

9 For the development of meteorology as a term and Aristotle's decisive role, see Capelle (1912), who helpfully points out that μετεωρολόγος was initially used to denote any type of natural philosopher prior to Aristotle (428). For further evidence of the capacious definition of meteorology in antiquity, consult the authors in the previous note.

plaining this wide variety of phenomena, Aristotle already attests to a long pre-existing tradition of speculation upon their causes, and largely makes use of the same explanatory tools, namely the exhalations produced by the sun's heat.[10] Within that larger context, the discovery and explanation of tides are somewhat exceptional. In the Mediterranean sea, tides are largely invisible and consequently attracted little explicit attention from pre-Hellenistic philosophers. Those few areas in the Mediterranean where tidal activity was noticeable, such as the Syrtes and the straits of Euripus or Messina, were often analyzed in isolation, as though peculiar circumstances rather than a more general phenomenon were under discussion.[11] The voyages of Alexander's fleet in the Indian Ocean and of Pytheas in the Atlantic and northern seas, however, made the Greeks aware of tides as a global phenomenon that invited explanation.[12] That relatively late awareness of tides is amply demonstrated in the doxographical tradition: the chapter of Aëtius (*Plac.* 3.17) concerned with the causes of low and high tides, for instance, lists a disproportionately large number of Hellenistic thinkers and non-philosophers compared to other entries.[13]

Within that later tradition, though Posidonius was not the first to offer a theory of tidal activity that explained it by reference to the moon, he may have been the first to undertake 'investigations [that] established the theory in detail.'[14] According to Strabo, Posidonius spent 30 days at Gadeira (Cadiz) observing the tidal activity (Strabo 3.5.1 = Posidonius T15 EK); as a result of these observations, he concluded that 'the movement of the ocean undergoes a cycle similar to that of a heavenly body, showing diurnal, monthly, and annual movement in sympathy with the moon' (τὴν τοῦ ὠκεανοῦ κίνησιν ὑπέχειν ἀστροειδῆ περίοδον, τὴν μὲν ἡμερήσιον ἀποδιδοῦσαν, τὴν δὲ μηνιαίαν, τὴν δ᾽ ἐνιαυσιαίαν συμπαθῶς τῇ σελήνῃ, Strabo 3.5.8 = Posidonius F217

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10 Kahn (1985) 98-106. For a more balanced and extended analysis of Aristotle's engagement with his predecessors and use of exhalations, see Wilson (2013), especially 35-72.

11 Kosmin (2024) 201-202.

12 Kosmin (2024) 202-204.

13 Mansfeld and Runia (2020) 1330-1346.

14 Kidd (1988) 762-763 *ad* F214. Clearly, Posidonius' linking of tides to the motions of the moon had been anticipated by Pytheas (Aët. *Plac.* 3.17.3) and Seleucus of Seleucia (Strabo 3.5.9, Aët. *Plac.* 3.17.9).

EK).[15] Though the full passage of Strabo from which this quote is taken is complex and lengthy (Strabo 3.5.7-8), the precision that Posidonius brought to the interpretation of the diurnal and monthly cycles is notable. For instance, he observed that the ebb and flow of the tides on a daily basis corresponded to the moon's elevation relative to the horizon, and that the greatest tides in a month occurred during a full moon and a new moon.[16] Such close correlations between the movements of the moon and ocean would have allowed individuals to predict within the context of a day or a month whether the tide would continue to rise or begin to fall at any given time. For Stoics the predictability and regularity of such changes was a powerful proof that the *kosmos* was ordered and governed by Providence.[17] Not only did it seem impossible that such order would arise by chance, but the co-ordination of these regular changes between such disparate parts of the *kosmos* as the ocean and the moon suggested that the *kosmos* formed some unified and coherent whole ordered and governed by a single will.[18]

One wonders whether it was partly this capacity of the tides to present a distinctively Stoic perspective on meteorological phenomena that inspired Posidonius to engage with this branch of philosophy. Meteorology appears to have been largely neglected by the Stoics before Posidonius: though there was the occasional explanation of some meteorological phenomenon here or there, no Stoic before him is known to have written a treatise on meteorology.[19] Even Stoics writing later than him found his interest in the causes of such phenomena somewhat baffling: Strabo accused him of 'Aristotelizing' with his inquiry into obscure causes (Strabo 2.3.8).[20] To some extent, such antipathy to meteorology reflects the decisive shift in the focus of the philosophical systems of the Hellenistic Period away from the inquiry into nature that had characterized the initial phase of philosophy's development

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15 All references to the testimonia and fragments of Posidonius are to the edition of Edelstein and Kidd (1989), i.e., EK.

16 Kidd (1988) 767-776 *ad* F217 provides a detailed explanation of the passage's complexities.

17 Hall (2024) 133 with Cicero *N.D.* 2.19.

18 Kosmin (2024) 204-207.

19 Hall (2024) 26-30.

20 When remarking on the difficulty of the enterprise he has undertaken in the *Natural Questions*, Seneca acknowledges that causes and secrets (*causas secretaque, Q. Nat*. 3. *pr.* 1), *i.e.* hidden causes, are one notable problem. Cf. Inwood (2000) 26-27.

and towards the study of humanity and our place in the world above all.[21] Nevertheless, it is likely that Aristotle's own understanding of meteorology and its place within the study of nature posed particular problems for the Stoics. First, Aristotle's *Meteorologica* is concerned almost exclusively with the study of efficient and material causes: despite the fact that Aristotle himself was a teleological thinker, there is barely a hint of the final cause or of the larger teleological design of the *kosmos* to be found in this work.[22] Secondly, Aristotle's understanding of the natural world is built around a formal division between the heavens, which are composed of aether, the primary element, and the sublunary world, composed as it is of the four more familiar elements: the absolute order of the former is stable and unchanging over the course of eternity, but the same level of order cannot be ascribed to the latter.[23] Indeed, in introducing his own *Meteorologica*, Aristotle acknowledges that the so-called *meteora* 'happen according to a nature, but one more disorderly than that of the primary element of bodies' (συμβαίνει κατὰ φύσιν μέν, ἀτακτοτέραν μέντοι τῆς τοῦ πρώτου στοιχείου τῶν σωμάτων, *Mete.* 1.1.338b). Each of these features of Aristotle's meteorological thought would have been hard to reconcile with the Stoic belief in the existence of a divinity that permeates and orders the entirety of the *kosmos*.[24]

Moreover, these elements of Aristotle's meteorology seem even more pronounced in the Peripatetics' subsequent development of this branch of philosophy. In the case of meteorology, Aristotle's immediate successors, Theophrastus and Strato of Lampsacus, doubled down on the focus on material and efficient causes.[25] In his *Metaphysics*, for instance, Theophrastus raises the question of whether there are limitations to the identification of a final cause and uses meteorological phenomena, such as some sort of ebb and flow of the sea, as the example *par excellence* of something that resists teleological explanation (*Metaph*.

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21 Kahn (1985) 23-24.

22 Taub (2003) 80-84

23 See Solmsen (1960) 253-318 for how Aristotle elaborates this view of the *kosmos* in *On the Heavens*.

24 For an overview of the Stoic view of god, the *kosmos*, and their relationship, see Long and Sedley (1987) 1.274-279, 2.271-277.

25 See Rodier (1890) 123-128 for Aristotle's methodology in the *Meteorologica* being particularly close to the general approach of Strato.

10a22-10b7).[26] Elsewhere in a portion of his *Metarsiologica* that survives in abridged form in Syriac and Arabic, Theophrastus even appears to have offered a theological excursus attacking the notion that god could be responsible for thunderbolts. Theophrastus argues that, because thunderbolts strike things with which god could not be angry (*e.g.* the sea, trees, irrational animals), strike the best people but not their evil counterparts, and are more common in specific places at specific times of year, they clearly have naturalistic causes rather than being the product of divine will (*Metars.* 14.18-25). The content of this argument is somewhat predictable, but it is still surprising to find it articulated by a philosopher who held a teleological view of the *kosmos*. That we can find a reworking of this very passage in Lucretius (*DRN* 6.357-422) points to the fact that Peripatetic meteorology found a readier home in Epicureanism than Stoicism.[27] As Sedley observes, this is 'one of those rare topics on which Epicureans and Aristotelians could see eye to eye - the exclusion of direct divine causation from the sublunary world.'[28] In light of these aspects of Peripatetic meteorology and their embrace by the Epicureans, it is likely that previous Stoics had thought this particular branch of natural philosophy was not a promising way for them to argue for their own providential view of the universe.

Within that context, it seems to me that Posidonius and subsequent Stoics must have felt that the obvious order exhibited by the predictability and regularity of the tides was a useful tool for pushing back against the Peripatetic and Epicurean visions of the world. That certainly seems to be the implication behind Strabo's claim that Posidonius ascribed 'a cycle similar to the heavenly bodies' (ἀστροειδῆ περίοδον, Strabo 3.5.8 = Posidonius F217 EK) to the ocean, as though the philosopher denied the Peripatetics' formal division between the heavenly and sublunary realms. In tracing these themes within *De providentia*, however, my aim is not to engage in an aggressive form of *Quellenforschung* that reduces Seneca's *praeteritio* to a cipher of Posidonius' meteorological works nor to read the *praeteritio* as a mere addendum to, or summary of, the *Natural Questions*. Such an approach would underestimate the extent to which Seneca has reworked the meteorological tradition for his own

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[26] Cf. van Raalte (1993) 485-498 for discussion of the passage, particularly on whether αἱ ἔφοδοι καὶ ἀνάρροια θαλάττηςι reflects awareness of the ebb and flow of tides.

[27] Mansfeld (1992) 326-327. For the Epicurean associations of meteorology prior to Seneca, see Graver (2000) 50-51.

[28] Sedley (1998) 181.

particular ends in this treatise.[29] Even so, in what follows we will see that Seneca appreciates the significance of tides for a Stoic understanding of the sublunary world, according to which one can insist that the world is more orderly than it may first appear.

Stoic meteorology and tides in the *praeteritio*

In many ways, the structure of Seneca's *praeteritio* seems informed by the Aristotelian understanding of meteorology, even though he does not subscribe to it. To advance his argument that the *kosmos* cannot be the product of chance, as the Epicureans claim, Seneca begins with the evident order of the heavenly bodies. He draws attention to the fact that, whereas 'those things which chance sets in motion are often thrown into disorder and quickly collide, this rapid movement [of the heavenly bodies] continues uninterrupted due to the command of eternal law' (*quae casus incitat saepe turbari et cito arietare, hanc inoffensam velocitatem procedere aeternae legis imperio*, *Prov.* 1.2). The regular motions of the heavenly bodies, whose predictable order has endured over recorded time, are the surest sign that the *kosmos* is ruled by Providence. Such enduring regularity would arguably be impossible for anything that has come about by chance.[30]

As Seneca's gaze proceeds downwards through the *kosmos*, however, he notes that individual phenomena observed in the sublunary world do not exhibit the same obvious regularity as the heavenly bodies (*Prov.* 1.2-3):[31]

> *Supervacuum est in praesentia ostendere… non esse materiae errantis hunc ordinem nec quae temere coierunt tanta arte pendere ut terrarum gravissimum pondus sedeat inmotum et circa se properantis caeli fugam spectet, ut infusa vallibus maria molliant terras nec ullum incrementum fluminum sentiant,*

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[29] This largely explains the obvious difference between the much simpler view of the natural world and meteorology presented here, as opposed to the *Natural Questions*: Seneca is glossing over difficulties and problems in this *praeteritio* in a way that would be unsuitable for a work concerned with the complexities of meteorology.

[30] Cf. Cicero *N.D.* 2.88, Man. 1.474-531 for similar Stoic arguments about the regularity of the heavens proving the existence and rule of Providence. Sedley (1976) 31-43 demonstrates that Epicurus himself questioned the validity of mathematical astronomy and its physical models as a way of claiming that this apparent order was largely a fabrication rather than a reality.

[31] Abel (1967) 109 notes a similar divide between the supra- and sublunary realms at *Marc.* 18.

> *ut ex minimis seminibus nascantur ingentia. ne illa quidem quae videntur confusa et incerta, pluvias dico nubesque et elisorum fulminum iactus et incendia ruptis montium verticibus effusa, tremores labantis soli aliaque quae tumultuosa pars rerum circa terras movet, sine ratione, quamvis subita sint, accidunt, sed suas et illa causas habent non minus quam quae alienis locis conspecta miraculo sunt, ut in mediis fluctibus calentes aquae et nova insularum in vasto exilientium mari spatia.*
>
> It is superfluous at the present moment to demonstrate that… this order is not the work of wandering matter and those things that have come together by chance are not suspended with such great artistry that the heaviest weight of the earth should remain unmoved and gaze at the sky that flies hurriedly around itself, that seas should soften the earth when poured into valleys and feel no increase due to the rivers, and that huge things should be born from the smallest seeds. Not even those things that seem disorderly and undetermined—I'm talking about rain, clouds, the casting of forcefully ejected thunderbolts, and fires poured forth from burst mountaintops, tremors of the shaking ground, and other things that the turbulent part of nature sets in motion around the earth—happen, however sudden they are, without reason, but even they have their own causes no less than those things that are looked upon as wonders by virtue of the strange places that they occur, such as hot waters in the midst of the waves and new land belonging to islands leaping up in the vast sea.[32]

In this passage, Seneca acknowledges that there is a long list of meteorological phenomena whose apparent disorder (*ne illa quidem quae videntur confusa et incerta*), as noted by Peripatetics and Epicureans, seems to contradict Seneca's belief in a teleological world. To challenge that faulty impression, Seneca focuses on one way in which Providence is manifested in the natural world.[33] According to him, the phenomena

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[32] I have used "undetermined" and "expanses of new islands" from Basore (1928) 5.

[33] Of course, there is another way that Providence can be manifested in the world, though Seneca almost entirely ignores it here. To serve its own purposes, Providence may simply suspend the regular and orderly functioning of the *kosmos*. Seneca himself acknowledges this in his account of the flood in the *Natural Questions*. There he observes that a normal tide in some places can reach as far as 100 miles inland but nevertheless subsides at that point because it 'maintains the correct order' (*ordinem servat*); by contrast, at the time of the flood, the tide, 'freed from its laws, advances without limit' (*solutus legibus sine modo fertur*, *Q. Nat.* 3.28.6-7). Lucilius is imagined to ask 'for what reason' (*qua ratione?*) this happens and is assured that it occurs merely because God thought it best for old things to end and new ones to begin (*Q. Nat.* 3.28.7). The will of God here seems to constitute a higher order at whose behest the lesser order of the *kosmos*' regular functioning can be suspended.

of the natural world exhibit providential order because they exist in harmonious balance, follow some kind of logical sequence and occur with a certain regularity. Several details of the passage dwell on these aspects of the *kosmos*. We are met with the co-existence of extreme opposites: the immobility of the weighty earth is contrasted with the rapid motion of the heavens. There is a dynamic equilibrium between land and sea: though rivers are continually emptying into the sea, the sea does not increase in size (*nec ullum incrementum fluminum sentiant*), because that input is compensated for by the water lost through evaporation that falls as rain on land.[34] Seneca's strange reference to rainfall as "seas… poured into valleys" (*infusa vallibus maria*) omits the stage of evaporation to insist that the various forms of moisture that we perceive in the world form part of the same system: seawater is evaporated, falls as rain, and drains from areas of high elevation into the valleys where it "softens," *i.e.* renders fertile, the lands that we inhabit (*molliant terras*) before the rivers formed in these valleys return again to a sea whose volume they do not increase.[35] The carefully choreo-

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In this treatise, however, Seneca largely ignores any possible conflict between the regular functioning of the *kosmos* and divine will because it does not serve his wider argument. One of his most compelling arguments for answering Lucilius' question is that each individual human is only a tiny cog in the broader machinery of the *kosmos* whose normal, orderly functioning Providence has to maintain. As such, the *kosmos* is not optimized for giving good and evil people their just deserts. Were Seneca to admit that sometimes Providence suspends that normal functioning, even if it does so rarely to allow for events that only occur once in each iteration of human history, such as the deluge or the conflagration, then he would compromise the persuasiveness of that argument. Cf. Fischer (2008) 19 for the idea that Stoic Providence does not intervene in this way for the benefit of individuals.

[34] Kahn (1985) 145-6 notes that some version of the rain cycle was recognized as early as Hesiod and continued to form part of Presocratic thought. Xenophanes claimed that the sea was the source of winds, clouds, rain, and rivers (LM 8 [Xen.] D46). In confronting certain Presocratic ideas about the consumption of moisture by the sun, Aristotle insisted that we see all evaporated moisture fall again as rain (*Mete.* 2.2.355a27-9).

[35] Lanzarone (2008) 100 *ad Prov.* 1.2 offers several parallels that point in opposite directions. On the one hand, parallels for the use of *infusa… maria* in Seneca and Pliny the Elder suggest that seas poured into valleys or land refer to deep inlets (*Q. Nat.* 3.8.1; *HN* 32.142). On the other hand, the use of *mollire* in similar contexts in Cicero and Seneca imply that the water in question renders the land fertile by softening it (*N.D.* 2.130; *Ben.* 4.25.2) and thus points to rainfall and rivers rather than the sea. I have opted for the latter option on the basis that it produces a stronger impression of balance and thus a more sensible parallel to the juxtaposition of the mobile sky and the immobile earth. If we opt for the former interpretation, we are left with the problem that, though we are told that rivers do not affect the size of the sea, the sea nevertheless erodes dry land (*molliant terras*) and thus intrudes upon it;

graphed maintenance of that equilibrium means that rainfall cannot be as disorderly (*confusa*) or undetermined (*incerta*) as it appears to us; by extension, the other meteorological phenomena, such as thunder and earthquakes, are unlikely to be as disorderly as they might appear. Whereas Aristotle and his successors claimed that meteorological phenomena were more disorderly than their heavenly counterparts, Seneca suggests that this disorder is only apparent (*videntur*).

The temporal logic that the various parts of the *kosmos* follow is anticipated by the growth of huge things from the smallest seeds (*ex minimis seminibus nascantur ingentia*): everything in the natural world has its own causes (*suas et illa causas habent*) that determine its growth, decline, or occurrence. For balance to be maintained, however, those cannot be separate chains of causation but must be interlinked. Here Seneca's claim that even meteorological phenomena, such as rainfall, obey some larger temporal order obviously has a strong relationship to the Stoics' belief in determinism, according to which Providence has organized the *kosmos* into a chain of causes.[36] Within this organization, everything has a reason for occurring when it does and no occurrence can truly be disorderly or undetermined, though it may seem so to us. Any process or event is bound into a larger temporal fabric that maintains cosmic order.

As for the meteorological phenomena that Seneca chooses to mention, he is drawing on a post-Aristotelian tradition and most probably one extending back to Posidonius. Leaving tides to one side, some of the other phenomena mentioned, such as the emergence of islands, are entirely omitted by Aristotle.[37] By contrast, Posidonius is known to have mentioned the emergence of the volcanic island of Hiera from the Aegean sea in the second century BCE, since Seneca's discussion of the similar emergence of Thia in 46 CE in the *Natural Questions* cites Posidonius and his pupil Asclepiodotus (*Q. Nat.* 2.26.4-7 = Posidonius F228 EK).[38] Secondly, the order of Seneca's phenomena follows

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such an intrusion could imply that the sea is growing and thus contradict Seneca's insistence upon its stable size. Basore (1928) 5 n.*a* came to the same conclusion that Seneca is referring to rainfall here.

[36] For a summary of Stoic determinism and sources pertaining to it, see Long and Sedley (1987) 1.336-340, 1.342-343, 2.337-341.

[37] In addition, Aristotle does not discuss hot springs in the middle of the sea, merely mentioning one freshwater spring in the middle of the Black Sea (*Mete*. 1.13.351a8-16) and claiming that saltwater springs must *once* have been hot (*Mete*. 2.3.359b4-21).

[38] For the various dates and context, see Kidd (1988) 810-812 *ad loc*. Cf. Posidonius F227

the same logic as the pseudo-Aristotelian *De Mundo*. We begin with phenomena caused by the wet exhalation, such as rain (*pluvias*) and clouds (*nubes*), then survey those caused by the dry exhalation like lightning (*elisorum fulminum iactus*) before turning to phenomena on earth, such as volcanic eruptions (*incendia ruptis montium verticibus effusa*) and earthquakes (*tremores labantis soli*) and closing with those at sea (*in mediis fluctibus calentes aquae, et nova insularum in vasto exilientium mari spatia*).[39] To ascribe this shared structure to a common source would be excessive, since the order of individual phenomena within a group is not a perfect match, the formation of volcanic islands is not explicitly mentioned in *De Mundo*, and Seneca's précis is much less detailed than the technical summary in *De Mundo*.[40] Nevertheless, the structural similarity suggests that this was an influential way of ordering meteorological phenomena that was familiar to both authors. That order clearly did not originate with Aristotle, whose *Meteorologica* is much more rambling, nor with Theophrastus, whose decision to begin with fiery phenomena was followed by the doxographical tradition represented by Aëtius as well as Lucretius.[41] The likeliest remaining model for this structure is Posidonius, particularly since the author of *De Mundo* appends tides to the end of their list, as we shall see that Seneca also does, despite their relationship to the exhalations and thus the other meteorological phenomena remaining obscure.[42]

EK (= Strabo 6.2.11) for another description of volcanic activity in the sea. For these events in a more general context of vulcanological interests, see Hall (2024) 117-120.

39 Baksa (2021) 122.

40 On the technical detail, see Baksa (2021) 146. We might have expected some mention of the formation or emergence of new islands in the section that treats volcanic eruptions at sea ([*Mund.*] 4.396a17-27), but there is none.

41 Sedley (1998) 157-160.

42 Capelle (1905) argues that the entirety of *De Mundo* betrays the influence of Posidonius and that this particular chapter of *De Mundo* is copied word for word from Posidonius or, perhaps, from a pupil of his (540-552). Maguire (1939) and Strohm (1952) have shown that both conclusions are excessive. Baksa (2021) 145-148 is probably right that the author was using a survey of meteorology, though I suspect that this survey used Posidonius rather than the reverse as he imagines. Maguire (1939) 128-133 points out that the influence of Posidonius on a Stoic survey of meteorology was likely inevitable and remains open to the possibility that Asclepiodotus, Posidonius' pupil, was the source. Nevertheless, Capelle (1905) 551-552 is right that tides are an odd phenomenon tacked onto the end of the list of meteorological phenomena, even though he decides that this is an insertion into the Posidonian material rather than a verbatim quote.

The list ends with examples that would be as suited to paradoxography as meteorology.[43] These phenomena are considered to be wondrous (*miraculo*) because they appear when and where one would least expect them and thus do not seem to belong there (*alienis locis*): hot waters appearing in the middle of the cold sea (*in mediis fluctibus calentes aquae*) or new islands leaping up from its depths (*nova insularum in vasto exilientium mari spatia*), as though out of nowhere. Wonder, however, is a double-edged sword for philosophers.[44] According to Aristotle, wonder was the origin of philosophy, because humans sought to solve the problems that confronted them and thus to correct the ignorance that caused them to wonder in the first place (*Metaph*. 1.2.982b12-21). For Aristotle, wonder here has an instrumental value in leading people to philosophize. Of course, there is always the danger that the wonder aroused in us is so overwhelming that we are paralyzed and never proceed to correct our ignorance through philosophy. Other philosophers seem to have been attuned to the danger posed by how emotionally and cognitively overwhelming wonder could be: Stoics and Epicureans both urged their adherents to wonder at nothing.[45] Lucretius explicitly introduces his own causal explanations of meteorological phenomena in his sixth book as an attempt to prevent those who have already learned that the gods enjoy carefree lives from returning to their old superstitions about divine punishment and intervention due to excessive wonder (Lucrezio 6.58-67). The same attitude towards wonder, though not the *kosmos*, underlies Seneca's point here. No matter how incomprehensible these events may seem, we should not surrender our belief in an ordered *kosmos* because of them and suppose that the world is entirely chaotic with anything capable of happening anywhere. Just like the other meteorological phenomena, even these sudden (*subita*) wonders occur for a reason (*ratione*) and have their own causes (*suas et illa causas habent*).[46] They too are bound into a larger order, however out of place they may initially seem.

Within this context, tides are introduced as the climax of this *praeteritio*. Their function is to provide an analogy for the other meteoro-

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[43] Myers (1994) 147-150 provides a succinct overview of the relationship between paradoxography and natural philosophy.

[44] For an overview of this tension, see Lightfoot (2021) 200-208.

[45] Lightfoot (2021) 205-207 provides several references, mostly Stoic, while Armstrong (2004) 284-285 analyzes Horace's *nil admirari* (*Ep.* 1.6) in Epicurean terms.

[46] Williams (2012) 219-220 points to similar strategies at work in the *Natural Questions*.

logical phenomena that may initially appear chaotic or random but actually follow some kind of temporal order that is hidden from us. As a result, Seneca dwells on them much longer than any entry in the preceding list (*Prov.* 1.4):

> *Iam vero si quis observaverit nudari litora pelago in se recedente eademque intra exiguum tempus operiri, credet caeca quadam volutatione modo contrahi undas et introrsum agi, modo erumpere et magno cursu repetere sedem suam, cum interim illae portionibus crescunt et ad horam ac diem subeunt ampliores minoresque, prout illas lunare sidus elicuit, ad cuius arbitrium oceanus exundat.*
>
> Moreover, if anyone observes that shores are exposed as the sea retreats into itself and then covered again within a tiny period of time, he will believe that at one moment the waves contract and are driven inward by some random turbulence, and at another burst forth and recapture their spot in a considerable advance, even though they grow by increments and according to the day and hour approach the shore larger or smaller in proportion to their attraction by the lunar star, at whose command the ocean pours forth.

Two reasons are implicitly proffered for why someone observing tides would misunderstand them as the result of some random fluctuation in the sea rather than a regular and orderly movement. One of these is that the waves grow by increments (*portionibus crescunt*), each of which is presumably too small on its own to be recognized by the human observer: all that they notice is the cumulative effect of this incremental change in both directions, namely the exposure of the shore around low tide and its submersion again at high tide. That changes can be so gradual that humans are incapable of perceiving them is already attested in the Presocratics: supposedly, Anaxagoras claimed that, if we mix two colors of paint 'drop by drop' (κατὰ σταγόνα), black and white for example, then 'sight will not be able to distinguish the gradual changes' (οὐ δυνήσεται ἡ ὄψις διακρίνειν τὰς παρὰ μικρὸν μεταβολὰς, LM 25 D5 = S.E. *M.* 7.90).[47] The cumulative effect of these gradual changes in altering the color of the paint will eventually be perceptible, but the gradual changes themselves cannot be noticed.

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[47] The edition used for the Presocratics is that of Laks-Most (2016), from which my translation here is loosely adapted.

The second reason is more complicated but seems to be privileged within the passage. The anonymous observer constructed by Seneca is the perfect naïf: it is as though he is observing tides for the first time with no pre-existing knowledge and thus his understanding of the phenomenon is based entirely upon the impression made by this single occasion. That is partly what allows his impression that the fluctuation is due to some chance turbulence (*caeca quadam volutatione*). The observation on a single occasion is implicitly contrasted with the extensive observation by the person who has noticed the relationship between the lunar cycle and the tides: that person knows that the variation in the tide is regular and can be mapped according to the hour and the day (*ad horam ac diem*). That mapping of tidal variation against the lunar cycle, of course, presupposes much more extensive observation of tidal activity similar to that which Posidonius undertook over the course of 30 days. In short, the correct understanding of the tides depends upon careful observation not only of the tides themselves, but of the lunar cycle, over a much longer timespan than that offered to the hypothetical observer through a single encounter.

For Seneca and his audience, however, the perfect naivete of this anonymous observer as contrasted with that of his more learned counterpart would reflect the historical reality according to which tides had only been understood relatively recently. Both Arrian and Quintus Curtius Rufus record that, when the fleet of Alexander the Great sailed down the Indus River towards its mouth, the ebb of the tide caused its ships to run aground.[48] According to Arrian, since Alexander's men had no previous experience of this phenomenon, they understandably experienced considerable shock, which only intensified when the return of the tide lifted up the grounded ships and caused some to crash into each other (*Anab.* 6.19.1-2). The reaction of Seneca's hypothetical someone may be intended to recall the confusion and shock that characterized these initial encounters with oceanic tides. Alexander's men could well have thought that the waters had retreated owing to some random turbulence (*caeca quadam volutatione*), not suspecting that the regularity of this process would ensure their imminent return. By alluding to the fact that the regularity of this phenomenon has only

[48] For the significance of these early encounters, see Kosmin (2024) 202-203. For Alexander the Great as a frequent point of reference for Seneca, see Coccia (1984). Seneca does refer within his works to Alexander's arrival at the ocean and unfamiliar seas (*Ep.* 113.29, 119.7, *Q. Nat.* 5.18.10, 6.23.3, *Ben.* 5.6.1).

come to be understood relatively recently within the bounds of recorded history, Seneca hints that other strange and seemingly disorderly phenomena may yet disclose their hidden order to attentive observers.

The Peripatetics invoke similar temporal considerations when they argue that the human understanding of meteorological phenomena is limited. In the case of some meteorological phenomena, such as rainbows at night, this was due to their rarity (*Mete*. 3.2.372a26-9), but there are other parallels more relevant to the cyclical action of the tides.[49] In confronting the interchange of land and sea due to sedimentation and marine incursion, for instance Aristotle insisted 'we must consider these changes to occur according to some order and cycle' (κατὰ μέντοι τινὰ τάξιν νομίζειν χρὴ ταῦτα γίγνεσθαι καὶ περίοδον, *Mete.* 1.14.351a25-6). In doing so, Aristotle was insisting that other philosophers who had thought advancing coastlines were a sign that the whole earth underwent some linear process of desiccation were mistaken and that advancing coastlines were merely one part of a larger cyclical process.[50] To explain why the true nature of these changes had eluded those earlier philosophers, Aristotle claimed that it was due to these changes occurring 'gradually over timespans that are very long compared to our life' (ἐκ προσαγωγῆς καὶ ἐν χρόνοις παμμήκεσι πρὸς τὴν ἡμετέραν ζωήν, *Mete.* 1.14.351b9-10).[51] According to Philo of Alexandria, Theophrastus resorted to a similar argumentative technique to explain why his opponents were wrong to suppose that erosion removes all mountains from the earth and thus flattens it over time: unlike trees, whose replenishment of their leaves occurs so quickly that we see it, 'mountains have a slower nature, for which reason even their growth can scarcely be perceived except over a long period of time' (τὰ δ᾽ ὄρη βραδυτέρᾳ, διὸ καὶ τὰς ἐκφύσεις αὐτῶν αἰσθητὰς ὅτι μὴ χρόνῳ μακρῷ μόλις εἶναι συμβέβηκεν, Theophrastus F184 FHS&G = *Aet*. 133). Clearly, the gradual operation of these processes over long timespans means that we cannot understand the orderly cycle of changes through which coastlines or mountains pass.

Within the context of such epistemological reflections on time in the longer meteorological tradition, we can understand Seneca's im-

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[49] Taub (2003) 78-79 observes that remoteness and rarity pose interpretative difficulties for Aristotle in his *Meteorologica*.

[50] Wilson (2013) 169-178.

[51] For further discussion of this temporal perspective, see Taylor (2024).

plicit argumentation in the following terms. Philosophers have only recently arrived at a true understanding of tides because the orderly cycle of their growth and decline unfolds so gradually that they require careful and sustained observation over periods of time that most people would never grant to them by chance. Nevertheless, the periods of time over which tides increase and decrease lie firmly within the bounds of a human life: despite being largely invisible in the Mediterranean, they are not temporally rare phenomena, like volcanic eruptions or islands emerging from the sea, but occur every day. The example of the tides warns us that behind any rare phenomenon, there will be a long, incremental process that built up to this moment; naturally, our attention is drawn to the culmination of that process, but we should not allow that bias in our own faculties to make us imagine that this is some discrete event, deracinated from the larger processes by which the temporal and spatial order of the *kosmos* is constituted. If understanding the regular motion of the tides requires extensive observation over an extended period of time because they are influenced by the lunar cycle, which would *prima facie* appear to be a wholly discrete phenomenon, then we may wonder how long a timespan would be required to understand the regularity and periodicity of much rarer phenomena, such as the emergence of islands from the sea, and to which other seemingly discrete phenomena these occurrences are tied. If even the cyclical order and temporal logic that governs such a common phenomenon occurring firmly within the timespan of a human life only recently been discovered, then Seneca is asking us whether we can really trust our impression that other meteorological phenomena are as disorderly as they appear. Perhaps there is a temporal and spatial logic to their occurrence no less strict and pervasive than that which governs the tides.

Despite such similarities between the arguments of the Peripatetics and Seneca, it should not escape our attention that Seneca is arguing that meteorological phenomena obey a much stricter temporal logic than Aristotle or Theophrastus would have claimed. After all, as a Stoic Seneca believes that Providence has organized the kosmos into a chain of causes and that even meteorological phenomena that seem disorderly have their assigned place within this larger temporal order. Tides serve as one example of the most regular and easily predicted forms of this temporal organization, though there could also be a multitude of events organized by Providence that do not occur in regular

cycles. Therefore, in choosing tides as his paradigmatic example of meteorological phenomena, Seneca implies that rainfall, earthquakes, and eruptions occur with greater regularity and periodicity than would strictly be warranted by a commitment to Stoic determinism alone.

By contrast, in claiming that geological changes occurred 'according to some order and cycle' (κατὰ μέντοι τινὰ τάξιν… καὶ περίοδον, *Mete.* 1.14.351a25-6), Aristotle had nothing as rigid in mind as Seneca evidently does. One of the most significant distinctions for Aristotle between the celestial and the sublunary parts of the *kosmos* is that 'temporal cycles, precise and exact in the celestial realm, are much less precise in the [latter].'[52] Tellingly, Aristotle uses the same typically Peripatetic pair of terms (τάξις and περίοδος) to refer to the fixed temporal sequence of growth and decay that affects each living thing (*Gen. corr.* 2.10.336b12).[53] Here it is obvious that the sequence of changes any creature undergoes in its development is unlikely to occur with timing as rigid and predictable as the motions of the heavenly bodies. Though we might say, for instance, that men enter puberty at 13 or die at 79, many individuals will do so earlier and later due to a variety of contingent factors. By contrast, there is no such wiggle room when Posidonius claims that the tide rises once the moon moving from the eastern horizon reaches the first sign of the zodiac (i.e. 30 degrees) and continues to do so until it is in the meridian.[54] Seneca acknowledges that greater level of precision when he remarks that the size of the tides corresponds to the hour and the day (*ad horam ac diem*) and emphasizes that their growth and decline is very closely tied to the motions of the moon 'at whose command the ocean pours forth' (*ad cuius arbitrium oceanus exundat*). That insistence upon the moon's careful control of the ocean over such small spans of time upsets any firm distinction between the temporal order of the celestial and sublunary realms, because the ebb and flow of the tides exhibit a precise and exact order that Aristotle would not have expected to find beneath the moon.

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[52] Wilson (2013) 4. In concluding his own discussion of the process by which the sea is salty, Aristotle remarks that 'this must always occur according to some order to the extent that the things here can have a share in order' (ἀναγκαῖον… τοῦτ᾽ ἀεὶ γίγνεσθαι κατά τινα τάξιν, ὡς ἐνδέχεται μετέχειν τὰ ἐνταῦθα τάξεως, *Mete.* 2.3.358a23-6).

[53] For this typically Peripatetic pair of terms, see Kahn (1985) 171-172.

[54] Kidd (1988) 772-773 *ad* F217.

In presenting tides in this way, Seneca presumably reflects a longer Stoic tradition of using the Peripatetics' own tools of meteorological interpretation to argue against their notions. The order imparted by Providence does not weaken as we descend from the heavens to the earth, even if the orderly arrangement of the former is more readily apparent than that of the latter, but extends throughout the entirety of the *kosmos.* As part of that pervasive influence, the temporal logic that is so clearly displayed in the motions of the heavenly bodies can also be uncovered, given enough time and energy, in the seemingly random and chaotic occurrences of the sublunary realm, such as the ebb and flow of the tides. By uncovering the laws that govern the tides and tying them to the movements of the moon, the Stoics had found that a huge part of the sublunary world exhibited just as precise and exact a temporal order as the heavenly realm. In doing so, they challenged the Peripatetic notion that the order of the sublunary realm would always be inferior to that of the heavens and imperfect in some sense.

The relevance of the *praeteritio* to the rest of the treatise

As Seneca turns away from the opening of his treatise towards its central concerns, he denies the possibility that anything evil can happen to a good man for the simple reason that 'opposites do not mix' (*non miscentur contraria*); that claim then leads him to draw an analogy between the sea and the good man: just as the influx of freshwater from rain and rivers does not alter the taste of the sea (*non mutant saporem maris*), so the impact of adverse events does not alter the spirit of the brave man (*ita adversarum impetus rerum viri fortis non vertit animum*, *Prov*. 2.1). The analogy is strange for several reasons. Freshwater and saltwater are not complete opposites in the same way as good and evil (or even fire and water), but obviously mix to produce brackish water. Even if Seneca has shifted focus to discussing adverse events on the understanding that evil cannot happen to the good man and that the so-called evils are merely 'indifferents' in Stoic terms, it is strange to make such different things as the good man's bravery and adverse events into two different types of water rather than using a more typical analogy, such as the waters of adversity crashing on the unmoved rock of the good man.[55] Finally, though the freshwater does not alter

[55] This imagery is used of humans crowding around or charging against other humans

the salty taste of the sea, it does mix with its waters in a way that Seneca probably would not want adverse events to 'mix' with the soul of the good man. Perhaps the significance of the rather odd analogy is to remind us that the *sapiens* is so unimaginably massive in his virtue that he will remain unaffected by any adversities, just as the vastness of the sea ensures that its salty character is untouched by the influx of freshwater.[56] Whether we find the analogy elegant or not, it nevertheless serves an obvious purpose: it reminds us of the meteorological *praeteritio* and encourages us to view the moral order of the *kosmos*, upon which the rest of the treatise focuses, in analogous terms to its physical order. In particular, there are two central themes of the *praeteritio* and of this analogy that are clearly relevant to the rest of the treatise: the order of Providence is exhibited in the cosmic equilibrium between opposing forces, and the maintenance of that equilibrium is achieved by a temporal logic in which the effects of different processes and events compensate for each other.

To begin with the first theme, in the *praeteritio* Seneca encouraged us to see the order of the *kosmos* in its maintenance of a dynamic equilibrium between seemingly opposed parts, such as the mobile heavens and the stationary earth or land and sea. In the later portions of treatise, it seems like the moral order of the universe is constituted by the maintenance of a similar dynamic equilibrium between good people and adversity. Rather than arguing in Stoic terms that misfortunes or adversities are 'indifferents' that have no bearing on virtue or happiness, Seneca spends considerable time reflecting not only on how adversity reveals virtue, but upon how it builds virtue.[57] Like a strict father, god 'tests the good man, hardens him, and prepares him for himself' (*bonum virum… experitur, indurat, sibi illum parat*, *Prov.* 1.6). The good man 'regards all adversities as practice' (*omnia adversa exercitationes putat*, *Prov.* 2.2). It even seems possible that, after all this training, adversity might still be necessary for the maintenance of virtue, since '[it] withers without an adversary' (*marcet sine adversario virtus*, *Prov.* 2.4). Seneca returns

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in epic poetry (e.g. *Il.* 15.618-621, *Aen.* 7.586-90, 10.693-696). Cf. *Il.* 17.747-751 for a wooded ridge holding back a flood.

[56] I offer my thanks to the second reviewer for this interpretation based on the arguments of Williams (2015) 179-187 concerning the massive scale of the Stoic sage.

[57] Abel (1967) 103 notes that this is unnecessary as a defense of Stoic doctrine: Seneca need only prove that adverse events should be viewed with indifference by the *sapiens*, not that they can be beneficial.

to the value of adversity in these terms several times in the treatise: it allows others and even ourselves to recognize our worth (*Prov.* 4.1-4); it toughens individuals so that they might reach the pinnacle of virtue (*Prov.* 4.4-8, 4.11-16, 5.10-11); an easy life dulls us while adversity sharpens us (*Prov.* 4.9-10). Though the misfortunes that befall the good man might seem to us like a curious failing on the part of cosmic order, this dynamic pairing of apparent opposites is essential to the formation and maintenance of virtue. As such, adversity, rather than harming the individual, actually benefits them (*Prov.* 3.1). Just as earthquakes might appear like a symptom of disorder but are not, so apparent evils are not actual evils (*non sint quae videntur mala*, *Prov.* 3.1).

Seneca extends this argument by claiming that these apparent evils are not just beneficial to the individual, but to humanity as a whole (*Prov.* 3.1, 5.1-4). Here the *praeteritio*'s emphasis on temporal logic becomes especially significant, since the benefits that Seneca is referring to may not be immediately obvious when the misfortune is experienced. These delayed benefits are introduced into the discussion when Seneca remarks that nothing 'except evil fortune discovers a great example' (*magnum exemplum nisi mala fortuna non invenit*, *Prov.* 3.4). The idea is that the suffering of good men, like Socrates, Regulus, and Cato, cannot be evaluated separately from their inspiring legacy: their deaths have caused humans to be good long after they have occurred, and thus the true value of these misfortunes can only be understood within a larger spatial and temporal context. After all, the individual is only one link in the chain of causation that involves the lives of everyone, 'for whom the gods have a greater duty of care than for individuals' (*quorum maior dis cura quam singulorum est*, *Prov.* 3.1). As such, Providence may cause a misfortune to befall an individual because it imparts a larger lesson. If only evil men suffered misfortune, it would teach us that poverty, disease, and disability *are* evils to be avoided at all costs (*Prov.* 5.1). The fact that good men, like Appius, suffer the onset of apparent misfortunes, such as blindness, with equanimity shows us that such supposed 'goods' are not essential to our welfare and virtue (*Prov.* 5.2). Even the benefit to the individual can only be understood on this longer timescale: Seneca asks whether fortune really harmed Regulus, for instance, when 'she made him proof of fidelity, proof of endurance' (*illum documentum fidei, documentum patientiae fecit*) and points out that 'the greater his torture is, the greater his glory shall be' (*quanto plus tormenti, tanto plus erit gloriae*, *Prov.* 3.9). Regulus'

glory, though its magnitude is tied to the scale of his suffering, enjoys a futurity that extends far beyond the moment of torture.[58] Such remarks suggest that an event whose apparent injustice baffles us, such as a good man being sentenced to a long and painful death, may make sense within a larger context that we cannot see, just as the tides obey a temporal logic that may initially escape our understanding.

It is not the death of Regulus, however, but that of Cato the Younger that receives the greatest elaboration by Seneca and can be linked to several themes within the *praeteritio*.[59] Cato the Younger's suicide after the defeat of the Republican forces at the Battle of Thapsus in 46 BCE might strike someone as a more useful *exemplum* for arguing that the world is not ruled by Providence. Cato's life already appeared to have been a constant struggle against the burden of adverse circumstances: he had to contend with the enmity of the first Triumvirate, a humiliating electoral defeat at the hands of Vatinius, the grim realities of civil war, and military defeat at the hands of Julius Caesar (*Prov.* 3.14). That Cato in the wake of that military defeat fails to kill himself at his first attempt seems to add insult to injury: the world is so unfair that it has not only denied the virtuous man success but has also refused him the consolation of an entirely dignified death.[60] Rather than being a meaningful event within some larger temporal order, the suicide looks like an ill-planned and sudden response to desperate adversity.

Seneca assures us that, however sudden and disorderly this event may seem, on closer inspection that impression is largely an illusion. Cato's address to his own soul (*anime*) that encourages it to 'attempt the long-planned task' (*aggredere… diu meditatum opus*, *Prov.* 2.10) denies the fact that his suicide was some sudden and blind reaction to adverse circumstance. Though the event might seem to come out of nowhere, like islands emerging from the sea, Seneca is assuring us that this suicide has its own chain of causes reaching back from the moment of crisis, even if some of these causes were concealed in the depths of Cato's soul. Seneca demonstrates that careful and deliberate planning by referring to the fact that Cato 'took thought for the

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58 Abel (1967) 112-113 notes that, though *gloria* is an indifferent according to the Stoics, Seneca allows it to be viewed as a good here for the purposes of education.

59 On the significance of Cato's suicide in Seneca's work in general, see Hill (2004) 178-182. On Cato's appearance in this particular dialogue, see Edwards (2007) 75-77.

60 Plutarch *Cat. Min.* 70.4-70.6 confirms the tradition that Cato bungled his first attempt at suicide.

safety of others and arranged the escape of those fleeing' (*alienae saluti consulit et instruit discedentium fugam*, *Prov.* 2.11): the action was not done on the spur of the moment. The fact that Cato had to kill himself twice might make the suicide appear disorderly or unplanned, but that can be ascribed to the fact that Cato's virtue is implicated in a larger chain of causation, like all our lives (*Prov.* 5.7-8). Within this narrative of Cato's suicide, Seneca returns several times to the idea that the gods derive pleasure from watching virtuous men be tested and so display the full extent and strength of their virtue (*Prov.* 2.8-9, 12). In the case of Cato, having to kill oneself *twice* is the ultimate test of virtue, presumably because one's resolve has had a chance to waver before the reality of death, and thus an even more impressive spectacle for the gods as they watch their pupil in virtue excel (*Prov.* 2.12). The idea that the gods enjoy this spectacle may seem more suited to the caprice of the Homeric gods than to a providential and benevolent deity, but it oddly reinforces Seneca's earlier claim that the sublunary realm is capable of displaying order in equal measure to the heavenly bodies.[61] Not only do human beings discern the providential order of the *kosmos* by gazing up at the heavenly bodies, but the heavens themselves bear witness to it by looking back at us.

Conclusion

Within this article, I have shown that the meteorological content of Seneca's *praeteritio* is intended to demonstrate that providential order does not decline as we descend from the heavens to the earth, and that the sudden impression of disorder given to us by an earthquake or a stroke of misfortune is largely a product of our own blinkered perspective, according to which we are incapable of seeing the *kosmos* as a whole in its spatial and temporal dimensions. In mounting that argument, Seneca gives us an insight into how the regularity of the tides provided the Stoics with a powerful tool to challenge the meteorological thinking of the Peripatetics and Epicureans. The order exhibited by the tides suggested the possibility that Providence was active in the sublunary realm no less than the heavens. Of course, this was

[61] On the Homeric gods as spectators in the *Iliad,* see Myers (2019). Seneca anticipates this objection about divine caprice by making it clear that the gods are not amused by the same trivial spectacles as humans, such as a young man killing a lion (*Prov.* 2.9).

not the only way that Seneca could have defended Providence, nor is it even the only way that he defends it within this treatise. Here it is as though Seneca is putting his best foot forward in a treatise concerned with defending Providence: many instances of disorder to which his opponents point in the sublunary realm are largely illusory; the failure does not lie in the order bestowed upon the world by Providence, but in these critics' own narrow perspective.

Elsewhere, however, Seneca adopts different tactics, focusing not so much on aspects of cosmic order that may have escaped our notice but instead on the constraints imposed upon Providence by the materials at his disposal. Towards the close of the treatise, Seneca admits that some of the injustice and disorder that we encounter in the world, such as the good man suffering a painful death, is not so much the result of an active and meaningful choice by Providence, as an inevitability produced by the material with which he is working. He notes that 'the craftsman cannot change his material' (*non potest artifex mutare materiam*) and that 'certain qualities cannot be separated from certain others' (*quaedam separari a quibusdam non possunt*, *Prov.* 5.9), as though choices made by Providence in the interests of order logically entail other less desirable consequences. Such reflections on the limitations imposed on a teleological deity by the matter out of which he constructs the *kosmos* extend back to Plato's Demiurge in the *Timaeus*.[62] The *Timaeus*' classic example of mutually exclusive qualities limiting intelligent design is the human head: ideally, the gods who created us would have protected our brain with a dense layer of skull and flesh to ensure our longevity, but this would have compromised their higher goal of endowing us with intelligence and, therefore, they abandoned it (*Tim.* 74e1-76d3). Presumably, Seneca's claim elsewhere that earthquakes do not occur as a result of divine wrath, but because 'they are disturbed by certain defects, like our bodies' (*quibusdam vitiis, ut corpora nostra turbantur*, *Q. Nat.* 6.3.1) fits into this larger tradition. From a Stoic perspective Providence must still have arranged such events into a chain of causation and thus chosen the timing of their occurrence,

[62] A full bibliography concerning this issue would almost comprise the scholarship on the *Timaeus*. For a sample of those who recognize these constraints, see Cornford (1937) 162-177, Morrow (1950) 154-155, Johansen (2004) 16-17, 99, Burnyeat (2005) 180-181, Ilievski (2016) 219-222. Sedley (2007) 95-132 points out the excesses of some interpretations but does not ultimately convince me that the nature of matter does not constrain the Demiurge in significant ways.

but the fact of their occurrence seems to be something that he cannot avoid.[63] It is unsurprising, of course, that Seneca should postpone this admission of Providence's limitations until the end of the treatise. It is much more appropriate in a defense of Providence to begin arguing that the disorder found within the *kosmos* is not disorderly at all, than to admit that these are undesirable elements within the cosmic design that Providence would not have included, if he were able. He does not want to concede that this unimpressive job is the best that God can do before arguing that the work of Providence is much more impressive than we might imagine.

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[63] Hall (2024) 181-183. One suspects that Posidonius' distinction between Zeus, Nature, and Fate might be relevant here, though the report is too meagre to be certain (Posidonius F103 EK = Aët. *Plac*. 1.28.5).

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