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Epicureanism and Scientific Debates

Antiquity and Late Reception

Volume 1

Edited by
Francesca Masi
Pierre-Marie Morel
Francesco Verde



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EPICUREANISM AND SCIENTIFIC DEBATES:
ANTIQUITY AND LATE RECEPTION

VOLUME I. LANGUAGE, MEDICINE, METEOROLOGY

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EPICURUS AND HIS METEOROLOGICAL LEXICON IN THE *LETTER TO PYTHOCLES*: SOME REMARKS

Dino De Sanctis

In the chapter that Hans Widmann devoted to the *Variation* in the “Beiträge zur Syntax Epikurs”, the German scholar defined Epicurus’ style thus:

Nur im dritten Brief können wir von bestimmter Absicht reden, weil ja hier Epikur mit ausgesprochen rhetorischen Kunstmitteln arbeitet.

As the lapidary *nur* highlights, Widmann attributed the use of recognizable “rhetorische Kunstmitteln” only to the *Letter to Menoeceus*, the third letter handed down by Diogenes Laertius, which is considered by scholars as an indisputable literary text and manifesto of *Kepos*.¹ At the same time, however, in reading the phrase that follows this apodictic judgment, one immediately feels the need for a not insignificant attenuation: Widmann is correctly forced to recognize that in other cases of what remains in Epicurus’ production, it is possible to glimpse a deliberate, an explicit desire to search for formal elements that are regulated by programmatic choices both on a syntactic and lexical level. Widmann’s meritorious analysis, suited to the philological research developed in the 1930s, started from clear requirements, well expressed in the preface of the work, so much so that his judgments still represent a fundamental starting point for those who want to approach, on the grammatical level, the fascinating and complex language of Epicurus, a language with respect to which precise points of reference are often lacking for an overall evaluation.² Today, however, a more balanced and untroubled judgment on Epicurus’ style is made possible thanks to new approaches to the author, facilitated by the essential editions of Graziano Arrighetti and Giuliana Leone regarding the *περὶ φύσεως*, as well as the definitive new edition of the monumental *Bíoi* of Diogenes Laertius by Tiziano Dorandi.³ For all this I believe it is right, if not necessary, to extend Widmann’s judgment to the whole of Epicurus’ production and always recognize the intentional presence of “*rhetorische Kunstmitteln*” that Widmann, with proper

¹ See Widmann 1935: 237ff. Widmann’s judgment is certainly influenced by the negative view on Epicurus’ style expressed in Norden 1918³: 135ff. On the same topic, see also De Sanctis 2021: 7ff. A lucid analysis of Epicurus’ prose in the *Letter to Menoeceus* is offered by Hefler 2014: 34ff. Verde 2010: 65ff. also dwells on some aspects of Epicurus’ physical argumentation in the *Letter to Herodotus*. Leone 2012: 68ff. offers a detailed picture of Epicurus’ expressive strategies in Book 2 *Περὶ φύσεως*. Recently Erbi 2020: 35ff. draws a stylistic overview of the so-called minor letters. Crucial remarks on *hiatus* in Epicurean works are in McOskey 2017: 145ff.

² A comprehensive study of Epicurean works, in the stylistic field, is outlined by Capasso 1988: 83ff.

³ I am referring to Arrighetti 1973², Leone 2012, Dorandi 2013.

perspicacity, in a still nascent phase of studies on Epicureanism, identified only in the *Letter to Menoeceus*.

In this regard a field of particular interest, in my opinion, is offered, for example, by the *Letter to Pythocles* with a phantasmagoric harvest of technical language, often new and extraneous but always powerfully visual, built on the rhythms of an exuberant and descriptive prose, which is characterized by a didactic tone in relation to heavenly *phenomena*, τὰ ἐν τοῖς μετεώροις φαινόμενα.⁴ Whoever approaches the heterogeneous horizon of Epicurus' prose and language in relation to meteorological problems is immediately presented with a series of problems that are difficult to ignore. On the one hand, the vocabulary used to bring everything happening above humanity or the Earth back to scientific clarity and rationality poses questions to be solved with bona fide commitment; on the other hand, this close and programmatically revealed link, in both form and practice, is essential to the tradition that Epicurus always views as an inescapable point of reference. Moreover, it is no coincidence that one of the first anecdotes from Diogenes Laertius (in the Book X of his *Vitae*) traces the formation of Epicurus' debt in this particular direction. Here, in fact, Diogenes mentions a decisive circumstance where a young Epicurus appears as interested and zealous for as much as curious and dissatisfied with the school of his masters in Samos (2):

Ἀπολλόδωρος δ' ὁ Ἐπικούρειος ἐν τῷ πρώτῳ περὶ τοῦ Ἐπικούρου βίου φησὶν ἔλθεῖν αὐτὸν ἐπὶ φιλοσοφίαν καταγνόντα τῶν γραμματιστῶν, ἐπειδὴ μὴ ἐδυνήθησαν ἐρμηνεύσαι τὰ περὶ τοῦ παρ' Ἡσιόδῳ χάους.

Apollodorus the Epicurean says in Book I of *On the Life of Epicurus* that he came to philosophy after giving up on his teachers because they were unable to explain to him the account of chaos in Hesiod.

This anecdote in Diogenes dates back to an authoritative source: Apollodorus the Epicurean, the so-called *Kepotyranos*, scholarch of the *Kepos*, in the first half of the second century BC. Having authored a multi-volume biography of the Master, Apollodorus – as it seems legitimate to deduce from Diogenes – perhaps elaborated an anecdotal justification for the qualification that Epicurus gives of himself in terms of being a philosopher αὐτοδίδακτος.⁵ In order not to draw a univocal διαδοχή, Apollodorus inserts a basic element into the biographical profile of Epicurus: the contempt for his masters, an anonymous group of men who cannot guarantee any valid interpretation, as revealed by the technician ἐρμηνεύειν, for Hesiod's cha-

⁴ See Delattre 2004: 149ff., for the didactic style in the *Letter to Pythocles*.

⁵ This anecdote clearly shows how, in the biographical context, Epicurus is seen as a philosopher who has no recognizable background regarding his thought. On the image of Epicurus as αὐτοδίδακτος, see Erler 2011: 14ff. For others anecdotes on Epicurus, in Book 10 of Diogenes' *Vitae*, see Balaudé 1999: 1149ff.

os. Of course, the request from Epicurus seems to coincide with an exegesis that goes beyond the mere poetic datum, while entering the dense jumble of disparate ζητήματα typical of Hellenistic scholarship.⁶ Epicurus does not seem convinced of the explanation he receives for the primordial chaos that opens the Hesiodic *Theogony*, for its mechanisms and, above all, for its causes: hence the inexhaustible desire to seek the truth that underlies the reality that surrounds man. Yet even in the face of this pedagogical disappointment, it is unlikely that Epicurus did not seek out dialogue; as unlikely would be the hesitation to confront the cornerstones of that Ελληνική παιδεία which, in this case, bears the authoritative name of Hesiod. That authority stemmed from the roots of the cosmogonic constructions offered by the Archaic creation, then destined to condition the powerful reflection advanced on reality, starting with the Presocratics. Moreover, what we have preserved of Epicurus' work bears a clearly opposite testimony. Confining Epicurus to a deaf thinker – one isolated in his research, unaware or insensitive to the developments that the sciences achieved in the Hellenistic period – corresponds to a gross error that has often distorted the interpretation offered for *Kepos*. Rather, Epicurus elaborates a salvific system of thought for the benefit of humanity, turning his gaze also to the sky and to everything that happens παρ' ἡμῖν. In thus opening the *portarum claustra* of the universe – according to the sublime image of Lucretius I 71 – a solid literary tradition has by now been consolidated, equipped with its own scientific language and indispensable forms of communication. For all this, not surprisingly, even the meteorological lexicon of *Kepos*, which arises from an evident need for experimentation, is firmly anchored to that inaugurated by Archaic poetry and the Presocratics up to Aristotle, so as to explain the φαινόμενα.⁷

As I said, my field of investigation will be supplied by the dense chapters into which the *Letter to Pythocles* is divided: I will proceed by sections in the reading of this letter, selecting the points that I consider most significant both with regard to the relationship between the Epicurus' language and the reference tradition and with regard to the novelties that are highlighted here. Doing so, I also hope to show an additional aspect: the preponderant function that Epicurus assigns to recognizable stylistic-rhetorical effects, especially emphasized by central technical terms. In the following pages I will leave out the numerous philosophical problems of the passages of analysis: for these problems I refer to the rich and persuasive essay, *La*

⁶ Lapini 2015: 1041ff. offers a persuasive analysis on the forms of philological research in Alexandria, which are inherited from *Kepos*. Mansfeld 1994: 36–37 rightly points out that Epicurus takes from Peripatetic reflection the concept of scientific and philological πρόβλημα, which is also attested in the *Letter to Pythocles* referring to purification, ... ἡ τοῖς περὶ βίων λόγοις ἢ τοῖς κατὰ τὴν τῶν ἄλλων φυσικῶν προβλημάτων κάθαρσιν (86).

⁷ Verde 2022a: 27ff. offers a fundamental study of celestial phenomena in the *Kepos*. See, on this point, Taub 2018: 248ff. and Bakker 2016: 66ff. Decisive observations regarding Epicurean physics and meteorology are also in Morel 2009: 28ff.

realità del possibile, by Francesco Verde.⁸ I must, moreover, preface the following research with a premise. I am aware that a stylistic analysis requires comparison with other texts contemporary with respect to the author, texts which in Epicurus' case may be few in number. However, I am sure that this kind of analysis is necessary for Epicurus' work at a time when Herculaneum texts now warrant increasingly faithful and advanced editions.

Let us proceed in order, however, starting from a section of the *Letter to Pythocles* in which the methodological and teleological assumptions of the research that motivate the drafting of this breviary are exposed: the proem.

1. THE PROEM

The letter, a διαλογισμός, that Epicurus sends to Pythocles is proposed to be a summary agile in its form and exhaustive in its explanation of phenomena, so that the young student always has in mind the complex doctrines that his Master has exposed on the μετέωρα.⁹ Gradually, however, the intent that Epicurus sets is itself no longer limited to the exclusive advantage of his pupil alone.¹⁰ It is clear, in fact – as already happens in the opening of the *Letter to Herodotus* and as it becomes an acquired fact for the parenesis offered to Menoeceus – that the words of Epicurus take on the tone of those who want to impart a universal teaching and communicate a beneficial message to all people, “especially to those who have recently been enjoying the true science of nature and to those who have been entangled in one of the too tiring daily occupations” (85, 1000-1002 Dorandi).¹¹ The second part of the proem retraces the methodological aspects of the research. Epicurus emphasizes here that, despite having to do with physics, meteorology has indisputable peculiarities, such as to make inadmissible in his analysis the application of the μοναχὸς τρόπος. For all this, it is necessary to recall and discover the many plausible causes that justify the φαινόμενα surrounding us in order to dispel erroneous opinions in the sign of

⁸ I am referring to Verde 2022b: 145ff.

⁹ The *Letter to Pythocles* is presented by Epicurus as a διαλογισμός σύντομος and εὐπερίγραφος (86). This careful definition frames this work as an epitome: Damiani 2021: 75ff. reconstructs the role of the epitome in the educational and communicative system of the *Kepon* starting from Epicurus.

¹⁰ De Sanctis 2012: 95ff. shows in this proem the tension towards a universal perspective in the intentions of Epicurus' salvific teaching. The universal tone of Epicurus' protreptic works is emphasized by Arrighetti 2013: 315ff. See, on this point, also Erbi 2020: 29ff.

¹¹ Cf. Epic. *Pyth.* 84, καὶ μάλιστα τοῖς νεωστὶ φυσιολογίας γνησίου γενομένοις καὶ τοῖς εἰς ἀσχολίας βαθυτέρας τῶν ἐγκυκλίων τινὸς ἐμπελεγμένοις. In De Sanctis 2022b: 131, I translate “... e soprattutto a coloro che da poco stanno gustando la genuina scienza della natura e a coloro che sono rimasti impigliati in una delle troppo faticose occupazioni della vita quotidiana”. For the meaning of ἀσχολία, “occupation”, in this section, see Erbi 2020: 191 n. 7.

a πλεοναχὸς τρόπος¹² – but not only for this intent. Rather, in the concluding part of the proem, the clarification of the purpose that leads Epicurus to reflect on the celestial φαινόμενα occurs: the need for a peaceful life, a life not agitated by the tensions that produce fear and that are capable of arising suddenly in the face of the glow of lightning or the roar of the thunder.¹³

In this long methodological section that Epicurus composes following the rules of the epistolary genre, the argumentative and lexical compactness that characterizes the author's style is not overlooked. I would like to dwell, for example, on a section of particular importance. Here Epicurus introduces the teleological function of research (85-86):

Πρῶτον μὲν οὖν μὴ ἄλλο τι τέλος ἐκ τῆς περὶ μετεώρων γνώσεως εἶτε κατὰ συναφὴν λεγομένων εἶτε αὐτοτελῶς νομίζειν εἶναι ἢ περ ἀταραξίαν καὶ πίστιν βέβαιον, καθάπερ καὶ ἐπὶ τῶν λοιπῶν. [86] μῆτε τὸ ἀδύνατον [καὶ] παραβιάζεσθαι, μῆτε ὁμοίαν κατὰ πάντα τὴν θεωρίαν ἔχειν ἢ τοῖς περὶ βίων λόγοις ἢ τοῖς κατὰ τὴν τῶν ἄλλων φυσικῶν προβλημάτων κάθαρσιν [...]

First, do not suppose that knowledge of celestial things, whether treated in connection with other issues or on its own, has any other goal than peace of mind and secure conviction, just as in everything else. [86] The goal is neither to be forced to accept anything impossible, nor to have a theory entirely like our accounts either of how to live or of how to resolve other problems in physics [...]

In a peremptory clause – characterized by the compact succession of infinite jussives, νομίζειν ... παραβιάζεσθαι ... ἔχειν – Epicurus clarifies the purpose of the investigation he is about to conduct. He is now interested in the clarification proposed regarding the type of knowledge, the γνώσις, which derives from celestial phenomena: these can be discussed both κατὰ συναφὴν and αὐτοτελῶς, that is to say with very broad modalities on the theoretical level. The term συναφή, connection, is not new in Greek prose: its first appearance, as far as we can see, dates back to Aristotle who exploits its etymological potential.¹⁴ Epicurus places this technicality, with syntactic *variatio*, in parallel

¹² See Verde 2022a: 51ff. Useful discussion of the problem is now in Masi 2022: 263ff. Corradi 2016: 217ff., identifies in the Aristotelian reflection the origin of πλεοναχὸς τρόπος. See, in this regard, also Bakker 2016: 269ff.

¹³ Anyone who does not admit the existence of innumerable scientific causes to motivate the φαινόμενα on the level of rationality will fall, defeated, slipping into the ridiculous and harmful coils of the myth, ὅταν δέ τις τὸ μὲν ἀπολίπη, τὸ δὲ ἐκβάλῃ ὁμοίως σύμφωνον ὃν τῷ φαινόμενῳ, δῆλον ὅτι καὶ ἐκ παντὸς ἐκπίπτει φυσιολογήματος, ἐπὶ δὲ τὸν μῦθον καταρρεῖ (87). Myth here and elsewhere in Epicurus amounts to superstition: this fact therefore does not imply an absence of respect towards the gods in the *Kepon*. See Konstan 2011: 53ff. and Piergiacomini 2017: 119ff.

¹⁴ In *De partibus animalium*, for example, συναφή indicates the hinge or point of contact of the bivalves in which the liver is located (680a24), while in *De spiritu* the same term recalls, in union with σύγκλεισις, the connection and the closing of the bones (484b22) – even if the recent editors of the treatise accept a different lesson of the term, ἐπισυναφή, attested in a branch of the tradition, which would appear more syntactically congruent in the period. Bos, Ferwerda 2008: 157 accept in text ἐπισυναφή respect to the betrayed συναφή in the codes.

with the adverb αὐτοτελῶς – attested for the first time in the *Letter to Pythocles* in reference to the τέλος in the section – to explain that the research on μετέωρα must be developed both with the identification of causes that are concomitant with each other and with the focus of a single problem. In any case, the result that follows will always be realized in the ἀπαράξια and in the πίστις βέβαιος, the supporting concepts clearly underlined by an emphatic *hyperbaton* with respect to τέλος, the noun around which the clause is regulated.¹⁵ The συναφή, therefore, indicates here an internal cohesion of opinions and causes in phenomenal research, which finds its rhetorical expression in this letter most often in the form of a catalog of causes to organize the αἴτια of the μετέωρα. Of course, on the lexical level, the fact that συναφή is not an isolated expression or a learned recovery from Aristotle but represents a recognizable Epicurean *vox* also appears of particular value. It is no coincidence, for example, that at the end of the XI book Περὶ φύσεως (the cosmological-meteorological book), Epicurus employs the term again (*PHerc.* 1042, col. XIII 1-6 Leone).¹⁶ Similarly, another section of the XXVIII book relates to the δόξαι that do not concern actions (here Epicurus refers to those δόξαι which are not included among the empirical opinions, but belong to the theoretical side). In this passage it is argued that these will be refuted, if they are false and if the cause of their error is irrational; or because some opinion different from the theoretical one expressed on the basis of them is not true; or if it is indirectly linked to the action so as to lead to a disadvantageous action, εἰς πράξεως συναφὴν (*PHerc.* 1479, fr. 13 col. IX 6-7 Sedley).¹⁷ The cases now evoked as a whole allow us to highlight that the term συναφή in Epicurus emerges in contexts that are sometimes removed from each other, ranging from meteorology to canonical.¹⁸

If we remain in the proem, the importance given to the φυσιολογία – recognized in the opening of the letter as γνήσιος φυσιολογία (85) – is not overlooked, namely, in a programmatic and very instructive reference to its semantic field. After having clarified the need to resort to the method of multiple explanations in scientific research because there are multiple causes underlying meteorology and multiple, according to the sensation, are the determinations of the phenomena themselves, Epicurus proposes a lapidary consideration that has a gnomic tone (86):

οὐ γὰρ κατὰ ἀξιώματα κενὰ καὶ νομοθεσίας φυσιολογητέον, ἀλλ' ὥς τὰ φαινόμενα ἐκκαλεῖται.

For the study of nature must be conducted not on the basis of empty statements and stipulations but as the appearances proclaim.

¹⁵ De Sanctis 2020: 129ff. analyzes the use of the *hyperbaton* in the prose of Epicurus. See Giovacchini 2012: 131ff., for Epicurean τέλος in meteorological searches.

¹⁶ This new interpretation of the column derives from Leone 2020: 24ff.

¹⁷ In this case, within a strong emphasizing anacoluth – as Usener 1977 *Glossarium*: 745 already pointed out – with the nexus εἰς πράξεως συναφὴν Epicurus indicates the logical connection of the opinions to the πράξις that originates from them. See Sedley 1973: 66ff.

¹⁸ For Arrighetti 1973²: 221, the term συναφή serves to “porre fra due elementi uno stretto e conseguente rapporto di interdipendenza”.

To those who look at these lines of the letter taken out of context, the typical trend of the γνώμη is immediately clear, as I said.¹⁹ It is not difficult to hypothesize, in fact, that the practices through which the Epicurean gnomic *corpora* are formed also depend very much on the style of the author who employs the mechanical selection of single sequences in which, as in a flash, a universal teaching is condensed and fixed in one or more periods. In line with what we are observing, primarily the syntactic *variatio* is evident between the link κατὰ ἀξιώματα κενὰ καὶ νομοθεσίας and the proposition ὡς τὰ φαινόμενα ἐκκαλεῖται, a parallelism that is repeated in the subsequent period, οὐ γὰρ ἡδη ἀλογίας καὶ κενῆς δόξης ὁ βίος ἡμῶν ἔχει χρεῖαν, ἀλλὰ τοῦ ἀθορύβως ἡμᾶς ζῆν, between the genitive κενῆς δόξης and the infinitive structure τοῦ ἀθορύβως ἡμᾶς ζῆν, referring to the central concept of χρεῖα. Both κατὰ ἀξιώματα κενὰ καὶ νομοθεσίας and ὡς τὰ φαινόμενα ἐκκαλεῖται, moreover, are governed by the verbal adjective φυσιολογητέον, the crux of the argumentation regarding the science of phenomena: the science of nature cannot be conducted in the axiomatic light of doctrinal impositions but on the basis of phenomenal evidence that always accords with sensation.²⁰ Beyond the polemic that most likely animates this section, it should be noted that Epicurus at the end of the section shows the condition of those who break this precept by again resorting to the semantic field of φυσιολογία (87):

ὅταν δέ τις τὸ μὲν ἀπολίπη, τὸ δὲ ἐκβάλῃ ὁμοίως σύμφωνον ὃν τῷ φαινομένῳ, δῆλον ὅτι καὶ ἐκ παντὸς ἐκπίπτει φυσιολογήματος, ἐπὶ δὲ τὸν μῦθον καταρρεῖ.

But if someone accepts one view and rejects another that is equally compatible with the appearances, then clearly they are abandoning the study of nature entirely and descending to storytelling.

Whoever does not admit the existence of all plausible explanations – without any hierarchy within them though always valid as long as they respect a strict criterion of verisimilitude – dangerously moves away from every φυσιολόγημα, from any correct scientific statement: it is like an inability to practise a correct form of reflection and to gain solid knowledge. The φυσιολόγημα now represents a new term, a *hapax legomenon* with which Epicurus – in closing the methodological section in the *Letter to Pythocles*, through an icaistical image to indicate error – intends to explain the aspects and results of the complex theory of nature, one that is opposed to the irrationality of myth. In this case also the novelty and centrality of the term

¹⁹ Gagliarde 2011: 69-87 emphasized the lightning-fast nature of the prose present in Epicurus' *Sententiae*. This is a technique intended for easily memorizing Epicurus' teaching, as suggested by Tulli 2000: 109ff.

²⁰ Verbal adjectives are typical of Epicurus' style in both the major Letters and *Περὶ φύσεως* and *Sententiae*: this kind of adjective reinforces the "catechistic" message of the school: see Widmann 1935: 183ff. Well-studied is Epicurus' interest in the semantic field of φυσιολογία in this section: rare verbal adjective φυσιολογητέον, e.g., is also attested in Sextus Empiricus *Pyrrh.*, παραπλήσια δὲ λέγομεν καὶ ἐν τῷ ζητεῖν εἰ φυσιολογητέον τῷ σκεπτικῷ (I 18, 2 Bury), and in Psellus *Op.*, ἀρκτέον οὖν ἀπὸ τῆς πάχνης καὶ περὶ ταύτης πρῶτον φυσιολογητέον (19, 45 Dussy).

are deliberately emphasized on the stylistic level due to an evident functional *hyperbaton* ἐκ παντὸς ... φυσιολογήματος, which seems to give plastic emphasis to the dramatic action of ἐκπίπτειν, which is in turn accompanied in a sort of chiasmus by the mad leap into myth, ἐπὶ δὲ τὸν μῦθον καταρρεῖ.²¹

2. DEFINING THE κόσμος

The considerations relating to the terms συναφή and φυσιολόγημα show Epicurus' ability to exploit linguistic legacies in order to adapt them to the context of a new discussion as much as to create functional novelties on the lexical level. In this sense I would like to turn my interest to a difficult section, both on the textual and on the argumentative level, in which Epicurus defines the cosmos. In this passage, the variegated whole of the φαινόμενα is articulated (88, 1033-1048):

κόσμος ἐστὶ περιοχὴ τις οὐρανοῦ, ἄστρα τε καὶ γῆν καὶ πάντα τὰ φαινόμενα περιέχουσα, ἀποτομὴν ἔχουσα ἀπὸ τοῦ ἀπείρου καὶ καταλήγουσα ἐν πέρατι ἢ ἀραιῷ ἢ πυκνῷ – καὶ οὐ λυομένου, πάντα τὰ ἐν αὐτῷ σύγχυσιν λήψεται – [καὶ λήγουσαν] ἢ [ἐν] περιαιομένῳ ἢ [ἐν] στάσιν ἔχοντι, καὶ στρογγύλην ἢ τρίγωνον ἢ οἶαν δὴποτε περιγραφὴν <ἔχουσα>

A world is an enclosure in the sky enclosing stars and earth and everything appearing in it, containing a section cut off from the limitless expanse [outside it] and terminating at an outer limit either thin or thick, at the destruction of which [sc. limit] there will occur the dissolution of everything inside it. And this terminus is either revolving or stationary, and round or triangular or any other shape...

I set aside here the complex problems of the *constitutio textus* of these lines.²² It was pointed out that starting with this significant chapter of the letter, Epicurus tends more often to underline the crucial term where his attention is focused, by way of the studied and recognizable *positio princeps* of the term itself.²³ Here, then, is the meaning of the didactic incipit κόσμος ἐστὶ περιοχὴ, typical of an ὁρισμός. In this passage, the first aspect of the κόσμος on which Epicurus intends to reflect is related to an insightful and representative definition of the term that takes shape in a real etymological study. To explain the nature of a κόσμος, Epicurus uses the substantive περιοχὴ, attested in classical Greek prose only in one of the προβλήματα of the *corpus Aristotelicum*. In that Aristotelian context, however, περιοχὴ indicates

²¹ Worth mentioning here is also the strength of the verb καταρρεῖν, which indicates the fatal fall of the ignorant, the *elapsi*, a free flight in a moral fault such as ignorance. See, on this point, Taub 2009: 110–111. The underlining of the preverb κατά- now has the evident flavour of an unstoppable descent, of sliding relentlessly towards the bottom of the error on a journey from which any possible anabasis does not seem to be granted. For κατά in Epicurus, see Widmann 1935: 200ff.

²² For the textual problem in this section, see De Sanctis 2022a: 115.

²³ Tulli 2022: 11ff. identifies this stylistic strategy of Epicurus.

the envelope that it guarantees to the human body in relation to sweat in front of a source of heat (870a10).²⁴ The terminological choice of Epicurus in this chapter of the letter, therefore, can be read in clear continuity with the tradition on the lexical level, even if at the same time the author's innovative power emerges in the creation of a technicality that is as icastic and descriptive. The underlining of the action expressed by the specific and traditional περιέχειν, however, is further emphasized by the etymological figure that Epicurus constructs with the explanation of περιοχή through the participle περιέχουσα. It is a choice that in the period marked by recognizable syntactic parallels gives rise to a series of refined assonances: from περιοχή ... περιέχουσα or from ἀποτομήν ... ἀπὸ τοῦ ἀπείρου up to the sequence of participles περιέχουσα ... ἔχουσα, which, reverberating through the *homeoteleutus*, distinguish and delimit the main functions assigned to the κόσμος itself.²⁵

Epicurus tends to confer an indubitable technical value to terms that refer to the semantic field of περιέχειν.²⁶ Τὸ περιέχον, in Book XXXIV (col. 19, 5 and 21, 5 Leone), for example, occurs in the sense of “surrounding environment” with regard to the doctrine of the εἶδωλα. In the *Letter to Herodotus* (46) and (48), ἐν τῷ περιέχοντι indicates the environment surrounding man in which the concretions ἀπαστάσεις and συστάσεις occur, effluxes and concretions of atoms; not surprisingly, a very incomplete passage of Book XI alludes to the πυκνότης of the surrounding environment, τοῦ περιέχοντος (26 col. 15, 11 Arr.²). Finally, it seems to me important to underline also the permanence of the term περιοχή from which we started in the texts of *Kepos*, in reference to the cosmos in the inscription of Diogenes of Oinoanda. In the epitome περὶ τῶν παθῶν καὶ πράξεων of the inscription, Diogenes offers an image of powerful strength to indicate the possibility granted to all men to benefit from the advantages that come from Epicurus' φιλοσοφία (fr. 30 II 3-11 Smith). He recalls first that the preparation of the great inscription is due to the need to enjoy happiness everywhere, so that everyone can also stay at home to care for it. Philosophy, he says, can also be advantageous for foreigners. Yet Diogenes then corrects himself: no one on earth is foreign, because while it is visible that every division of the Earth is different among the homelands for single individuals, according to the whole complex of our universe, κατὰ δὲ | τὴν ὅλην περιοχὴν | τοῦδε τοῦ κόσμου, the world and the whole Earth represent the only house from which every man

²⁴ For the *hapax legomena* and language in the *Aristotelian Problems*, see Ferrini 2002: XVI-XX. In the cosmological-meteorological context, the semantic field to which the term περιοχή is anchored has a vast tradition. It is no coincidence, for example, that it ranges starting from Plato's *Timaeus* (e.g., 31a4, 33b2) in order to define the content action exercised by the κόσμος on sensory and phenomenal reality.

²⁵ Epicurus explains the possibility of the plurality of κόσμοι, on both a physical and logical level, already in the *Letter to Herodotus* (45 and 74). For the connection with this section of the *Letter to Pythocles*, see Warren 2004.

²⁶ Leone 2002: 120 analyzes this semantic field in the edition of the Book 34 Περί φύσεως.

can benefit.²⁷ In this case we have an affirmation of universalizing humanism that characterizes the eudaimonistic perspective of *Kepos*. At the same time, on the linguistic level, the superb image offered by Diogenes – even in the initial ethical context of the inscription – seems to recall a model almost, if not to quote with unequivocal terms the theorization of the κόσμος which, at least as far as we know, Epicurus posited in the *Letter to Pythocles*.

3. *PRIMUM DICTA OR HAPAX LEGOMENA?*

The ability to construct refined effects in the prose of the *Letter to Pythocles* is not isolated to this section. Many passages in this letter demonstrate Epicurus' desire to convey a recognizable phenomenal aspect through new words, capable of evoking it in light of the action that characterizes it.²⁸ In this regard, it is possible to identify the tendency to coin new technical words starting from a verb that was often used by the previous tradition in order to indicate, in the scientific-meteorological field, the occurrence of an action.²⁹

Immediately after the definition of the cosmos, for example, Epicurus deepens the processes that act here. In his style of continuous argumentation, the syntactic-grammatical concatenation of the periods seems to imitate the dynamism and concatenation of atomic aggregations, as well as their continuous creation and dissolution (89):

ὅτι δὲ καὶ τοιοῦτοι κόσμοι εἰσὶν ἄπειροι τὸ πλῆθος ἔστι καταλαβεῖν, καὶ ὅτι καὶ ὁ τοιοῦτος δύναται κόσμος γίνεσθαι καὶ ἐν κόσμῳ καὶ μετακοσμίῳ, ὃ λέγομεν μεταξύ κόσμων διάστημα, ἐν πολυκένῳ τόπῳ καὶ οὐκ ἐν μεγάλῳ εἰλικρινεῖ καὶ κενῷ, καθάπερ τινές φασιν, ἐπιτηδεῖων τινῶν σπερμάτων ρυέντων ἀφ' ἐνὸς κόσμου ἢ μετακοσμίου ἢ καὶ ἀπὸ πλειόνων, κατὰ μικρὸν προσθέσεις τε καὶ διαρθρώσεις καὶ μεταστάσεις ποιούντων ἐπ' ἄλλον τόπον, ἐὰν οὕτω τύχη, καὶ ἐπαρδεύσεις ἐκ τῶν ἐχόντων ἐπιτηδεῖως ἕως τελειώσεως καὶ διαμονῆς ἐφ' ὅσον τὰ ὑποβληθέντα θεμέλια τὴν προσδοχὴν δύναται ποιεῖσθαι.

Also that a world of this sort is able to come about either within a world or in an interworld, which is what we call an interval between worlds, in a region that is mostly void – but not completely void over any great area, as some claim – when suitable seeds stream together from one or more worlds or interworlds and gradually

²⁷ See, on this point, Smith 1993: 478–479.

²⁸ In Diogenes Laertius (X 13, 8), Aristophanes of Byzantium defines the style of Epicurus as very personal, κέχρηται δὲ λέξει κυρία κατὰ τῶν πραγμάτων, ἦν ὅτι ιδιωτάτη ἐστίν. Arrighetti 2010: 21–22 showed that the next κατὰ τῶν πραγμάτων indicates the correspondence of the Epicurus' language with the reality that it recalls. See, on this point, also Milanese 1989: 45ff.

²⁹ In recent decades there have been numerous studies dealing with *hapax legomena* in Epicurus and in the *Kepos*. In this regard, see Acosta Méndez 1995: 279ff. Interesting recent observations on *hapax legomena* in Philodemus' works, e.g., are in Longo Auricchio 2009: 103ff.; De Sanctis 2010: 199ff.; Indelli, Longo Auricchio 2020: 119–132; and IID. 2021: 93ff.

produce accumulations, articulations, and transpositions, as it so happens, and also a continuing influx from things in suitable conditions, until it reaches full development and permanence to the extent its underlying foundations are able to attain.

After having demonstrated the logical necessity of postulating infinite κόσμοι, as well as the existence of *metacosmia*, the διαστήματα that are created between cosmos and cosmos, Epicurus describes the formation of these κόσμοι in relation to the movements of the σπέρματα.³⁰ Beyond the recognizable debt of this page with the περί φύσεως, I believe that it is equally significant to observe the set of terms used by Epicurus with which not every direction or atomic action is referred to. The movements of suitable σπέρματα, in fact, occur in precise spaces in which both προσθέσεις, additions – both διαρθρώσεις, connections, and μεταστάσεις, displacements – are produced, little by little, on the basis of a principle of randomness, as well as ἐπαρδεύσεις, scents, deriving from bodies suitable for this function that contribute to achieving fulfillment and stability of the process so that each addition does not damage the foundations of the cosmic system at its bases and does not compromise its formation and maintenance.³¹ The terms that Epicurus inserts in a catalog of actions, typical of scientific language, here concur to specify minimal but significant actions and movements with a precision that can sometimes appear almost obsessive, though so as to ensure a capillary exhaustiveness with respect to which not one can arise on its own.³²

Ἐπαρδεύσεις, for example, represents an Epicurean coinage of particular charm. Modeled on the technical verb, born in the *koinè*, ἐπαρδεύω–ἐπάρδω, the noun ἐπαρδεύσεις usually indicates a watery downpour which in the meteorological field is equivalent to a rain shower. This concrete and etymological meaning is attested in another passage of the *Letter to Pythocles* (100) in relation to the winds that can develop by emanations from suitable places or by the movement of air, though also if a too violent downpour occurs from agglomerations capable of causing these emissions. The actual meaning of downpour becomes more nuanced in the section relating to the cosmos: here it is not a simple aqueous precipitation but an atomic effluvium with which Epicurus seems to indicate the agile, almost liquid movement of the atoms that disperse and travel in infinity. In this case, ἐπαρδεύσεις would represent a characteristic Epicurean *hapax legomenon*.³³

³⁰ See Verde 2022b: 153ff.

³¹ See, for cosmogony and infinity of worlds, Leone 2012: 53ff. Morel 2009: 40ff. examines atomic properties.

³² Leone 2015: 159ff. offers an important examination of this plasticity of Epicurus' prose.

³³ See Usener 1977 *Glossarium*: 268.

In this respect one can also observe πρόσλαμψις, a noun with which Epicurus introduces one cause of rainbow formation (109):

Ἦρις γίνεται κατὰ πρόσλαμψιν [ὑπὸ] τοῦ ἡλίου πρὸς ἀέρα ὕδατοιειδῆ, ἢ κατὰ πρόσφυσιν ἰδίαν τοῦ τε φωτὸς καὶ τοῦ ἀέρος, ἢ τὰ τῶν χρωμάτων τούτων ιδιώματα ποιήσει εἶτε πάντα εἶτε μονοειδῶς, ἀφ' οὗ πάλιν ἀπολάμποντος τὰ ὁμοροῦντα τοῦ ἀέρος χρῶσιν ταύτην λήψεται, οἷαν θεωροῦμεν, κατὰ πρόσλαμψιν πρὸς τὰ μέρη. τὸ δὲ τῆς περιφερείας τοῦτο φάντασμα γίνεται διὰ τὸ τὸ διάστημα πάντοθεν ἴσον ὑπὸ τῆς ὀψews θεωρεῖσθαι, ἢ σύνωσιν τοιαύτην λαμβανουσῶν τῶν ἐν τῷ ἀέρι <ἀ>τόμων ἢ ἐν τοῖς νέφεσιν ἀπὸ τοῦ αὐτοῦ ἀέρος [προσφερομένου πρὸς τὴν σελήνην] ἀποφερομένων [ἀτόμων] περιφέρειάν τινα καθίεσθαι τὴν σύγκρισιν ταύτην.

Rainbows come about by the sun shining on watery air; or by a distinctive synthesis of light and air, which will produce the distinctive characteristics of those colors, either all of them or one uniformly; when it then shines back, the regions adjacent to the air will in turn acquire the observed sort of coloring from the light shining on their parts. [110] Its apparent curvature comes about because it is observed by our sight at an equal distance from all its parts; either when the atoms in the air are compressed in that way, or when atoms in the clouds are carried away from the same air, this accretion projects a certain curvature.

For the birth of the rainbow, Epicurus introduces two main causes: the first is the πρόσλαμψις τοῦ ἡλίου πρὸς ἀέρα ὕδαταιειδῆ, namely, the reflection of light exerted by the sun on the moist air; the second is concentrated in the πρόσφυσις ἰδία τοῦ τε φωτὸς καὶ τοῦ ἀέρος, namely, in a conjunction of sun and air that gives rise at particular junctures to the coloring of the rainbow.³⁴ In other words, at the basis of this discussion, as is evident, are two fundamental aspects in the formation of the phenomenon: the light of the sun and the humidity of the air, causes that in the section of the celestial phenomena presented in the letter are evoked with frequent tendency.³⁵ A second problem investigated in the letter is then related to the shape of the rainbow, owing to the vision from the Earth of this phenomenon or to the effect of the pressure that is exerted by atoms on the air. So, for Epicurus, at the base of the rainbow we identify either a πρόσφυσις or a πρόσλαμψις. While πρόσφυσις, attachment or point of attachment, is part of the technical language of Aristotle (GA 745b24 and IA 710a4) and Theophrastus (HP III 16, 4), πρόσλαμψις, shining on, seems to be an Epicurean *primum dictum*.³⁶

³⁴ In this section of *Letter to Pythocles* I read κατὰ πρόσλαμψιν τοῦ ἡλίου instead of the betrayed κατὰ πρόσλαμψιν ὑπὸ τοῦ ἡλίου in and I consider προσφερομένου πρὸς τὴν σελήνην and ἀτόμων as *glossae*. See, on this regard, De Sanctis 2022a: 117.

³⁵ A detailed analysis of the same phenomenon is outlined by Aristotle in *Meteorologica* (III 2-6). See Merker, 2003: 317ff. and Wilson 2013: 236ff.

³⁶ Crucial observations on the technical terminology of the rainbow in Greek meteorological reflection are in Verde 2018: 383ff. This noun πρόσλαμψις, which is built on the verb προσλάμπω, is attested in other texts subsequent to Epicurus, always in connection with the sun. See, e.g., for use

Similar considerations can also be developed within a group of nouns representative of this icaistical style in the codification of meteorological phenomena we can place in the category of *hapax legomena* or *primum dicta*: I refer, for example, to:

- a) πρόσκρισις, accretion, increase or growth by assimilation (90 and 109);
- b) συγκύρησις, concurrence or coincidence (96 and 98);
- c) προσθήτεσις, interposition or occultation (94).

These terms are innovative and representative of specific μετέωρα. In the *Letter to Pythocles*, for example, προσθήτεσις appears as a “lunar” term, related only to the treatment of σελήνη, attested only here, coined from the verb προστίθηναι, which Epicurus frequently uses in περι φύσεως.³⁷ We find the first occurrence of the term in relation to the section devoted to the phases of the moon (94):

κενώσεις τε σελήνης καὶ πάλιν πληρώσεις καὶ κατὰ στροφὴν τοῦ σώματος τούτου δύναιντ’ ἂν γίνεσθαι καὶ κατὰ σχηματισμοὺς ἀέρος ὁμοίως, ἔτι τε καὶ κατὰ προσθετήσεις καὶ κατὰ πάντας τρόπους, καθ’ οὓς καὶ τὰ παρ’ ἡμῖν φαινόμενα ἐκκαλεῖται εἰς τὰς τούτου τοῦ εἶδους ἀποδόσεις ...

waning of the moon and again its waxing would be able to come about both by its own body turning round, and similarly by configurations of air, and yet again by interpositions, and in all the ways the appearances around us proclaim for producing this visible shape...

Inserted as the third house of the phases of the moon, the προσθετήσεις here seem to be a kind of occultation of the image that occurs for those who observe the satellite from the Earth. This concealment is evidently due to the presence of particular configurations that the air takes on and that are in the way in front of the moon. It is not surprising that Epicurus consistently plays, so to speak, with this noun always about the moon, perhaps because it seems to be suitable to express visually the behavior of this astral body in the sky, including its aspects that most attract the interest of man when he observes it from the Earth. Not surprisingly, in the next section, devoted to the ἔμφασις of the moon, Epicurus imputes its changing appearance either to παραλλαγὴ, the diversity of its parts, or to the interposition of another astral body in front of the moon itself. In this case the partial concealment of the face of the moon is indicated by a compound ἐπιπροσθέτησις which strengthens and specifies the technical term of departure.³⁸

of same word Claud. Ptol. *Synt.*, ἡλιακὴ προσλάψις (I 1, 267, 14), Theon Math. *Comm.* ταῖς τοῦ ἡλίου προσλάμψεσι (956.10), and Papp. *Synag.*, τῆς προσλάμψεως ἡλίου (VI 554, 26).

³⁷ See Usener 1977 *Glossarium*: 587.

³⁸ Beyond Epicurus, ἐπιπροσθέτησις is attested also in *Definitiones* of Heron of Alexandria, τούτων δ’ αἱ μὲν ἀκριβέστεραι διὰ τῶν ἀκτίνων τοῦ ἡλίου λαμβάνονται ἢ δι’ ὀπτήρων ἢ τῶν ἐπιπροσθετήσεων ἐκλαμβανόμεναι (135, 8, 15-17, Vol. IV Heiberg). Acerbi, Vitrac 2014: 59ff., analyze Heron’s scientific language, which appears rich in *hapax legomena*.

CONCLUSION

I am aware of having offered only a partial picture of the richness that distinguishes the language of Epicurus in the *Letter to Pythocles*, a richness which I hope can also be understood, however, as an unquestionable proof of the validity and importance of Epicurus in the field of scientific prose and, in general, of Hellenistic prose. The continuous dialogue of Epicurus with the texts of reference, with the authors who preceded him, represents the best test to understand the rationalistic experimentalism that transpires in the language and in the pages of the letter, as a result of continuous links and an interest always supported by the inescapable need of expression in the exact investigation of celestial phenomena: in this aspect, too, I believe the fascination for this text and, above all, its value consist.

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