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QUID EST PRAECIPUUM?
STATUS AND USES OF PHYSICS IN THE *NATURALES*
QUAESTIONES OF SENECA THE YOUNGER*

Sola autem nos philosophia excitabit, sola somnum excutiet gravem
Ep. 53. 8

ABSTRACT. Komorowska Joanna, Quid est praecipuum? Status and uses of physics in the *Naturales Quaestiones* of Seneca the Younger.

The essay analyses the position of physics as defined in Seneca's *Naturales quaestiones*: the lore of the universe, the theoretical search for the ultimate cause, the search for necessary truth. This intellectual, infinite (at least where humans are concerned) quest appears not only as a fulfillment of the human duty, but results necessary for (and coextensive with) the acquisition of ethical stand so admired by the Stoics.

Keywords: Seneca, Stoicism, physics, ethics, universal order, providence, theory of knowledge, division of sciences

When thinking about Seneca, one only rarely thinks of his *Naturales Quaestiones* (hence *NQ*): in spite of its notable dimensions and careful composition this particular work does not share the fame of the ethical writings, with which the name of the philosopher has traditionally been associated, or even that of tragedies, source of so profound influence on the European drama. Yet, those who venture onto the ground of this late work, be they historians of philosophy or literature, are very seldom disappointed: baffled, possibly, for the discussion abounds in digressions, anecdotes, and doxographic accounts, but certainly not disappointed. Divided into seven volumes, the work discusses the phenomena observable in

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The English translations employed in the study are: Thomas H. Corcoran's for the *NQ* (quoted after the Loeb edition of 1971), Richard Gummere's for the *Epistulae morales* (after the Loeb edition of 1917) and R.D. Hicks' for Diogenes Laertius' *Lives of eminent philosophers* (as available in the Perseus database).

the natural world, from those occurring in the higher, sublunary spheres, to those nearly hidden in the depths of earth. While one would be well advised to keep in mind that the present (or indeed transmitted) sequence does not correspond to the original order of composition, the fact argued persuasively by Codoñer¹ and generally accepted in the modern scholarship, the masterly handling of the matter may be admired within single books, while the whole (regardless of its arrangement) provides one of the rare glimpses of Stoic treatment of physics – a treatment possibly all the more interesting once we realize that the addressee of the work is none other than the addressee of the *Epistulae morales*: Lucilius. The present study aims at investigating the theoretical premises upon which bases the Senecan concept of physics as manifested in the *NQ*, or the issue of study of physics as end in itself as contrasted with the ethical dimension of such an endeavor.

STOIC DEFINITION OF PHYSICS

It is generally known that the Stoics distinguished three principal branches of intellectual pursuit: logic, physics and ethics, the division echoed by Seneca himself, as he differentiates between *philosophia moralis*, *naturalis* and *rationalis*.² According to the sources we possess, these were likened to a living creature, an egg, a crop field, or, finally, to a fortified city:

Philosophy, they say, is like an animal, Logic corresponding to the bones and sinews, Ethics to the fleshy parts, Physics to the soul. (A)

Another simile they use is that of an egg: the shell is Logic, next comes the white, Ethics, and the yolk in the centre is Physics. (B)

Or, again, they liken Philosophy to a fertile field: Logic being the encircling fence, Ethics the crop, Physics the soil or the trees. (C)

Or, again, to a city strongly walled and governed by reason. (D) (DL VII 1 40)

Significantly, all these similes hint at the mutual interdependence of the three, rendering a single-minded study of e.g. logic superfluous if not outright useless. We cannot conceive of a ‘functionable’ egg without its protective shell, or, for that matter, without a yolk or a white – the three are necessary for its preservation, or, to employ a more peripatetic concept: the three account for the egg-ness of an egg. The last simile, however, is an exception to the ‘triplicity’

¹ C. Codoñer, *La physique de Sénèque: ordonnance et structure des “Naturales Quaestiones”*, ANRW II 36. 3, pp. 1779–1822; see also H. Hine, *The manuscript tradition of Seneca’s “Naturales Quaestiones”*, CQ 30, 1980, pp. 183–217.

² The clearest division appears in *Ep.* 89. 9 sq. The respective interests are defined as follows: *prima componit animum. Secunda rerum naturam scrutatur; tertia proprietates verborum exigit* etc. (ibidem “The first keeps the soul in order; the second investigates the universe; the third works out the essential meanings of the words...”).

paradigm: certainly, one could say that the circumvallation corresponds to logic, while the ruling reason would in all likelihood form an equivalent of theoretical knowledge (i.e.) physics, yet there seems to be something unusual in the focus on the functionality that seems prevalent in this particular image: after all, a city may exist, albeit not for long or at least, not very happily, even when not always governed by reason. Furthermore, the image bears considerable resemblance to the famous fortress simile employed in the Stoic ethics, researched among others by the late Paul Hadot.³ It is hardly surprising that reporting on the doctrine, Dionege Laertius notes that the three remain practically inseparable, and that for some Stoics at least the philosophical instruction would necessarily combine all the disciplines:⁴

No single part, some Stoics declare, is independent of any other part, but all blend together. Nor was it usual to teach them separately.

Even more importantly, the Stoic definition of physics comprised far more than the word τὰ φυσικά would imply in Platonic or Aristotelian context: starting from the *Prinzipienlehre* and theology the term covered virtually every kind of knowledge that was not ethics (i.e. was not directly linked to practice). As a result, Stoic physics comprised issues as varied as wind-lore and existence of *heimarmene*, astronomy and study of the (omnipresent) divine. To quote the important testimony surviving in Diogenes' account of Zeno's teachings:

Their physical doctrine they divide into sections (1) about bodies; (2) about principles; (3) about elements; (4) about the gods; (5) about bounding surfaces and space whether filled or empty. This is a division into species; but the generic division is into three parts, dealing with (i.) the universe; (ii.) the elements; (iii.) the subject of causation. (VII 1. 132)

Clearly, the *NQ*, focused as they are on the phenomena occurring in the observable world as this latter may be defined on basis of the *divisio quaestionis* in the proem of Book Two,⁵ do not appear to devote much attention to the divine – at least not until we realize that the discussion of the universe is intimately connected with the discussion of god's nature and activity. After all, it is this latter

³ Compare P. Hadot, *La citadelle intérieure. Introduction aux 'Pensées' de Marc Aurèle*, Paris 1992.

⁴ Still, there are exceptions, among whom the most prominent are Zeno and Chrysippus: according to the biographer, they would follow the well known path, starting with instruction in logic, passing through physics, to conclude with the discussion of ethics.

⁵ To quote: *omnis de universo quaestio in caelestia, sublimia, terrena dividitur* (II pr. 1); and then in the detailed description of the three subdivisions (ibidem, 1–2): „Prima pars naturam siderum scrutaretur magnitudinem et formam ignium quibus mundus includitur... Secunda pars tractat inter caelum terramque versantia... tertia illa pars de aquis, terries, arbustis, satis quaeritur et [...] de omnibus quae solo continentur.”

who remains the ultimate, organizing cause of all that is – omnipresent and manifesting itself in every natural phenomenon, the divine reveals itself to us through physical nature. From this, it follows that the diligent and well-construed study of nature results in the cognition of the divine, the cognition of profound practical implications: correct definition of the *bona*, right attitude regarding life fortunes, etc. are incumbent upon our cognition of the universal order. Thus, the *sapientia* of the *NQ*, the ever evolving result of the study of nature, is also the *sapientia* of *Ep.* 20. 5, the knowledge of preferables.⁶

QUID EST PRAECIPUUM: BOOK THREE

It is generally accepted in the modern scholarship that the present Book Three, devoted to the study of terrestrial waters, was conceived as the first volume of the work. Introduced by carefully executed *praefatio* (discussed, among others, by Brad Inwood, who saw the passage as an interesting testimony of the Senecan concept of the man-divine relation⁷), it culminates in persuasive image of universal flooding, thus paying homage to the element manifestly farthest removed from the perfection of creative fire. It is however not so much the actual or scientific content of the book, but its proem that provides an important element of my inquiry.

Right at the beginning of the book, Seneca declares his intent to devote the remaining years of his life to the study of a discipline he hitherto neglected: the rhetorical ardor notwithstanding, there may be something more profound in his renouncement of misspent years, in the professed desire to make up for the erstwhile negligence:

My old age should exempt me from this task and rebuke me with years spent in idle pursuits (inter vana studia consumptos). But let me strive all the more and let hard make up for the omissions of a misspent life (aetatis male exemptae)... (III pr. 2)

Quite obviously, the *NQ* are introduced as sort of a crowning achievement of his final years – this is not necessarily the usual Senecan introduction; furthermore, the drift of its argument seems to hint at the very same principle that is so succinctly put forward in the *divisio scientiarum* in Book One. Physics, the study of universe, which effectively means the study of the divine, emerges in

⁶To quote: *Quid est sapientia? Semper idem volle et nolle* ('What is wisdom? Always desiring the same things, and always refusing the same things.');

⁷B. Inwood, *God and Human Knowledge in Seneca's „Natural Quaestions”*, [in:] D. Frede, A. Laks, *Traditions of Theology. Studies in Hellenistic Theology, its Background and Aftermath*, Leiden 2002, pp. 119–157.

this latter as the supreme intellectual pursuit, while in Book Three it is a pursuit whose value Seneca learned to appreciate only at the final stages of his life. This is particularly striking once we recall the frequent warnings directed at Lucilius in the *Epistles*, where Seneca warns his addressee not to devote too much of his time and energy to the study of phenomena, but rather to concentrate on the practical aspects of life. Are we then dealing with a reevaluation of physics? Certainly, Seneca does imply that a study of natural phenomena is in the essence a study of mind itself – and it is the latter that validates and ennobles this particular pursuit:

The mind should be entirely free for itself. Toward the very end, at least, it should look backwards in contemplation of itself (*sui saltem in ipso fine respiciat; ibidem*)

The input of the statement seems similar to that justifying the division: *inter duas interest quantum inter deum et hominem*. The study of phenomena as an investigation of causes⁸ becomes an inquiry into the regular, eternal, and ultimately rational: thus, the physical observation converge in the contemplation of the active and rational principle: this, in all likelihood is what Seneca understands when saying that *animus sui saltem respiciat*. Ultimately, the physical inquiry leads us to the cognition of the universal reason (and of the reason of this universe). At the same reason, the complete knowledge of the world forms a prerogative of divinity: only god possesses knowledge of everything – human reason, though in itself a part of the divine, has certain limitations, which make it impossible to recognize and identify causes of every single event.⁹ Divine reason, by contrast, suffers no constraints – it comprises every event, possessing complete knowledge of the universe.

Strikingly, the laudatory section introducing the physical investigations swiftly evolves into an easily recognizable ethical declaration. In fact, the major part of the proem, when separated from the context, impresses one with purely ethical character: effectively, the theoretical knowledge of causes is defined herewith in

⁸The knowledge of causes would be considered an intrinsic element of the true knowledge of an object: one thinks of the definition of wisdom as it appears in *Epistulae*, compare e.g. 89. 5: *sapientia est nosse divina et humana et horum causas. Supervacua mihi haec videtur adiectio, quia causae divinarum humanorumque pars divinarum sunt* (*Wisdom is knowing things divine and things human, and their causes also. This added phrase seems to me to be superfluous, since the causes of things divine and things human are parts of divine system*). One is also reminded that inquiry into causes constitutes the defining attribute of the philosophical approach to the phenomena (and hence, the principal difference between the latter and astronomy, mathematics, etc.), as stressed in *Ep.* 88. 26: *Sapiens enim causas naturalium et quaerit et novit, quorum numeros mensurasque geometres persequitur et supputat.*

⁹One is reminded of the Stoic concept of *aitiai adelai*, the hidden causes – defined as explaining the events which appear to be spontaneous or accidental.

terms of what may be considered an ethical *telos*, thus attesting to the existence of intrinsic and necessary connection between the seemingly varied areas of research.

Interestingly, the procedure employed by Seneca combines profound philosophical sense with particularly affective form. The ethical content relies on the multiple repetition of the *quid est praecipuum* formula. Through the use of this particular formula, he invokes the important (or the valuable as in not-indifferent) element of life. Given the repetitive character of the question, it seems interesting to consider the answers provided in the analyzed text.

Should we want to list the Senecan answers, we would come up with a following list:

- A: To raise your mind above the threats and promises of fortune, to consider nothing worth hoping for.
- B. To be able to endure adversity with a cheerful mind (*Posse laeto animo adversa tolerare*)
- C. A mind bold and confident against calamity, not only averse to luxury, but even an enemy of it, neither eager for danger nor fleeing from it. A mind that knows how to make its fortune (*qui sciat fortunam non expectare sed facere*)...
- D. Not to admit evil plans into your thinking, to raise pure hands to heaven, to seek no good which (...) someone must lose
- E. To lift your spirit high above chance occurrences, to be mindful of being a man...
- F. To have your breath on your very lips: this makes man free not by right of Roman citizenship but by the right of nature.

In spite of apparent randomness, this seems to be a purposeful sequence: starting from a purely practical issue, Seneca weaves his path toward one of the more confident assertions of life as *bonum*. What he means, clearly, is human life – not just the simple fact of being alive, but being alive as a rational being. The proviso becomes manifest once we pay attention to his renouncement of slavery, understood as a mental state, in which an allegedly rational being is subjected to the vagaries of his passions. At the same moment, all the six goals listed by the philosopher answer the same question and thus relate to the Stoic concept of virtue; yet, each specifies slightly different aspect for the quest of happiness. Even more importantly, it would seem that the quest to establish the credentials of physical discipline falls back on the ethical premises – the aim of the investigation is to bring about certain practical benefits, namely an enhancement (or, for that matter, acquisition) of ethical virtue, this latter manifesting itself in the famed attitude of *apatheia*.

As for the arrangement and sequence of the responses: the first quite clearly describes the manner in which the only and highest good is to be sought – it is through the renouncement of things indifferent (A) that we arrive at the state of mind that allows us to (B), i.e. to withstand the adversities of fortune. C describes the quality of mind that characterizes a sage (i.e. the true/ideal human). The suppression of generally accepted strivings and desires (D), i.e. the ability to recognize the true human *telos*, is manifestly linked to the possession of stable and confident

mind (C), but it is also linked to the awareness of human condition (E). Finally, the last answer reminds one of the natural affinity of men, all of them capable of striving after the intellectual and ethical paradigm portrayed above. Thus, the final point is one that serves to define the goals of the work – as rational beings all men can seek to free themselves from what is unworthy of human status.¹⁰

Symptomatically, Seneca employs similar arrangement when discussing the benefits attached to the study of natural phenomena: not less than four advantages of such an investigation are quoted in III pr. 18:

1. getting away from petty matters
2. freeing the mind
3. acquiring the subtlety of thought
4. (mentioned as an additional benefit) clarity of lessons derived from the universal regularities.

These four, it may be argued, correspond to the answers given to the original question. Clearly, as one ceases to consider petty matters connected to the apparent goods, one also acquires certain indifference to the possible adversities of fortune – as the *sordida* cease to affect us, we acquire a freedom of mundane cares that is so characteristic of an elevated, properly human (i.e. sage) mind. In a much similar fashion, the intellectual exercise offered by the quest for causes (and, effectively, for the ultimate cause) matures into certain agility and set disposition of mind – in the essence, it becomes a mind as it should be, a confident and capable agent unlikely to be influenced by momentary appearance of pleasure or pain; hence it becomes self-sufficient in its quest for fulfillment, thus contributing to individual's happiness. Finally, the study compromises our false sense of self-importance, leading one to recognize his (or hers) true status in the universe, defined wholly and solely by one's rationality.¹¹ This rationality, one remembers is an exclusively human trait, uniting people of every status – but only when it is an 'active' quality, only when we strive to realize our human nature. This ultimate (albeit never complete) cognition, this awareness both of human greatness and of the pettiness of mundane affairs is identical or at least coexistent with virtue as full realization of our own rationality, bringing about the acceptance of universal and the ability to withstand any vicissitudes of life.

¹⁰ Still, the good that is being alive (and hence, being able to raise oneself above the limitations of the apparent goods) seems particularly important in the compositional entity comprising the description of universal catastrophe – the general perishing of the live beings in the latter spells an end to the possibilities of intellectual pursuit, the swelling depths of the water devouring life very much in the manner of passions devouring intellectual power.

¹¹ One may recall the instructive passage of Cicero's *Somnium* (*de rep.* VI, 21 sq.): in contemplating the grand design of the universe, Scipio comes to realize both the frailty of human existence and the greatness of true virtue (clearly, the identity of this virtue varies from that praised by Seneca, yet the parallels between the respective portrayal of the pettiness of human affairs are striking).

Yet, easy as it would be to classify the achievement of perfect virtue as a purely ethical goal, it would be advisable to remember that this achievement is the only truly human feat one can hope for, a victory surpassing any other. Similarly, the virtue we want to acquire is of the self-sufficient kind the Stoics upheld – the *summum bonum* of human existence and the ultimate goal of an intelligent life. Also, it is not only a practical matter – the Stoic virtue corresponds to the knowledge and acceptance of the universal order, and, hence, to the correct understanding of good and evil. It is hardly surprising that the theoretical knowledge and practical attitude become intrinsically entwined, merging into one entity: the perfect human is the one who combines the complete causal knowledge of the world with appropriate attitude to life's mutable course. Thus, it is not that physics is intrinsically inferior and subservient to ethical end – it is rather that the theoretical and the ethical blend into one. This complex relationship receives due notice in the *NQ* VI, as the philosopher notes:

Quos [i.e. animos] magis refert nostra fortiores fieri quam doctiores. Sed alterum sine altero non fit: non enim aliunde animo venit robur quam a bonis artibus, quam a contemplatione naturae (VI 32. 1).

Manifestly, the achievement of (moral) perfection remains a priority: yet, in very Stoic fashion, it is coextensive with the acquisition of knowledge. In other words, the perfect virtue is also the perfect knowledge and, conversely, possession of knowledge translates into ethical virtue.¹² To achieve it, indeed even to strive after it, means to retain one's humanity even in the face of (universal) catastrophe, to be able to admire the beauty of world-design even in the most 'frightening' circumstances and, thus, to raise oneself above the level of beasts hence proving oneself to be a truly rational being.¹³

UNA AD HOMINEM, ALTERA AD DEUM: BOOK ONE

Interestingly, in its present form the *NQ* open with a discussion of the *divisio scientiarum* (the division will be further supplemented by the differentiation within physics discussed in the introductory part of Book Two): in the proem of Book One, Seneca makes a powerful case for physics seen here as the necessary sister of ethics: the two, he argues, for a perfect union of knowledge of what is human and knowledge of what is divine:

¹²In the words of R. A. Caponigri: *wisdom is what is sought and, when found, transforms the soul, becoming its highest perfection and transfiguring the man, establishes him as a sage* (*Reason and death: the idea of wisdom in Seneca* [in:] *Actas del congreso internacional de filosofia en conmemoracion de Seneca en el XIX centenario de su muerte*, Cordoba 1965, p. 59).

¹³Compare VI 32, 4: „securus aspiciet fulminantis caeli trucem atque horridam faciem, frangatur licet caelum et ignes in exitium omnium, in primis suum miscat.”

In short, between the two branches of philosophy there is as much difference as there is between man and god. One teaches us what should be done on earth; the other what is done in heaven. One dispels our errors and furnishes a light for us to see through the uncertainties of life, the other rises far above this fog in which we wallow, and, rescuing us from darkness, leads us to the very place whence the light shines (I pr. 2)¹⁴.

Clearly, Seneca conceives physics (or, to put it in a more adequate form, natural sciences, a system of knowledge enabling an elevation of the human mind above its unhappy condition (this latter being a result of habits acquired in the pre-rational period of life, i.e. childhood¹⁵). Its fundamental importance lies in the ability to question the phenomena, to inquire about their goal and governing principles – this ability, irrevocably leading to the investigation of ultimate principle of the world, leads to the recognition and, hence, acquisition, of what is truly good, that is to the development of the virtuous attitude of *homologeisthai te phusei*. This attitude, itself a source of Stoic happiness, is however dependent on the correct recognition and appreciation of the beauty and of the providential arrangement of the physical universe: to reject providence, to embrace randomness is, effectively, to mistake the very nature of the world. Even worse, such a mistake makes the achievement of correct stance with regard to life and its manifold changes. Hence, the recognition of universal providentiality (and implicitly, rationality) becomes necessary condition of one's correct development – and the cognition depends on the human ability to observe the phenomena.

Hardly surprisingly, Seneca is quick to highlight the correct path of inquiry as he considers the varied concepts of the universe:

For example: how powerful is god? Does he form matter for himself or does he merely make use of what is already there? Which comes first: does function determine matter, or does matter determine function? Does god do whatever he wishes? Or in how many cases do the things he treats fail him, just as many things are poorly shaped by a great artist not because his art fails him but because the material in which he works often resists his art? To investigate these questions, to learn about them, to brood over them – is this not to transcend your own mortality and to be admitted to a higher plane? (I pr. 16–17)

The study of principles allows men to raise themselves above the constraints imposed by semi-bestial habits acquired in pre-rational period of our lives. Indeed, it is seen as the ultimate feat of human intellect, fulfillment of the intellectual power that providence bestowed on our species. Even if this cognition is marred

¹⁴It is easy to notice the Platonic flavor of the passage with its suggestive images of darkness, ascent and light – the crucial difference is that for Seneca the knowledge of the ultimate cause of everything qualifies as belonging to the realm of physics and is dependent on inquiry into material, physical phenomena, while for the contemporary Platonists the parallel knowledge results from purely intellectual, speculative cognition (compare e.g. Plutarch *PQ I*).

¹⁵Compare M. Graver, *Stoicism and Emotion*, University of Chicago Press 2007, p. 149 sq.

by the limitations necessarily restraining our sensory and, to some degree, even intellectual powers (a point duly highlighted in Book Seven¹⁶).

THE ACTUAL EXPOSITION

It is time to consider, albeit briefly, the actual working of the principles formulated in the proems. The fact that Senecan work abounds in ethical excurses¹⁷ (or at least, in something one may call excurses) has been duly noted by Classical scholars – yet, for a long time it was considered that these excurses, their content being regarded as foreign in a work dealing with physics, are of purely digressive character.¹⁸ This is not to imply that these passages did not attract scholarly attention – quite to the contrary, these vivid and memorable vignettes of human vice, portrayed in the most caricatural and obscene form, occasioned several interesting studies:¹⁹ still, it is quite recently that the scholars came to appreciate the compositional subtlety of the *NQ*,²⁰ recognizing the intentional, profound connection between the purely physical explanations and the startling and occasionally drastic ethical tirades, introduced all of the sudden into the discussion. It seems instructive to consider some examples of Seneca's technique.²¹

Now, the 'physical' exposition of the *NQ*, ie. the discussion concerning the natural world, aims at establishing the causes of each discussed phenomena: certainly, the assumption that theoretical knowledge is in fact the knowledge of

¹⁶Complete cognition remains a privilege of god: the divine alone is capable of comprehending the entire complexity and beauty of the universe (*neque enim omnia deus homini fecit! Quota pars operis tanti nobis committitur? Ipse qui ista traktat, qui condidit, qui totum hoc fundavit deditque circa se, maiorque est pars sui operis ac melior; effugit oculos; cogitatione uisendus est;* *NQ* VII 30).

¹⁷Promiscuity in Book One, gluttony in Book Three, avarice and warmongering in Book Five, usury in Book Seven.

¹⁸Thomas Corcoran's scathing remarks on these detours as formulated in his Introduction to the Loeb edition of the work (*Seneca Natural Questions, books I-III*, with an English translation by T.H. Corcoran, Harvard University Press 1971, p. xiv) may provide the best known example of this attitude.

¹⁹For the overview see F. Limburg, *The Representation and Role of Badness in Seneca's Moral Teaching: a Case from the "Naturales Quaestiones" (NQ 1. 16)*, [in:] I. Sluiter, R.M. Rosen *Kakos. Badness and Anti-Value in Classical Antiquity*, Mnemosyne Suppl. 307, Brill 2008, pp. 433–450.

²⁰See e.g. B. Inwood, *God and Human Knowledge in Seneca's "Natural Questions"*, [in:] idem, *Reading Seneca. Stoic Philosophy in Rome*, Oxford Clarendon Press 2007, pp. 157–200.

²¹There may be yet another reason for Seneca's bursts of ethical proselytizing: after all, the principle of *varietas* calls for internal differentiation of literary text: the *NQ* are, in the essence, not a purely scientific opus of the type represented e.g. by Galen's *de methodo medendi*, Claudius Ptolemy's *Syntaxis*, or, to furnish a Latin example Celsus' *de medicina* (in which case the rhetorical element would be limited, shaping the proem rather than the detailed exposition), but rather a philosophical treatise intended for reader's instruction.

causes is hardly surprising in an ancient philosopher.²² Similarly, there is nothing particularly striking in the other clearly marked assumption that may be seen as underlying the Senecan world view, namely in the theory that things occur *hene-ka tinis*, for the sake of something.²³ This teleological principle becomes a pivot on which the Senecan argument relies for its ethical force: the arrangement of natural world becomes a paradigm for balanced and rational behavior. At the same time, single phenomena are shown as elements of a major design, supplementing or balancing each other and hence contributing to the survival of the whole. To look for a ratio, to consider the place of each element of the design is effectively to uncover the intrinsic perfection and beauty of the world. The study of air becomes a study of omnipresent principle of tension and cohesion (II 6–7), while the study of mirrors manifests the providential care for our development glorifying the pursuit of physical knowledge as a fulfillment of providential intent.²⁴

As for the strongly rhetoricized passages damning the human excesses: these seem to be introduced as an explicit contrast to the orderly nature of physical world: thus, the wanton urges of Hostius Quadra follow upon the long consideration of catoptrics, the lore of mirrors. The elegance and subtlety of natural mirrors, manifesting the complex and intricate rationality of the organizing principle, is thus confronted with a major misuse of natural and useful phenomenon. The beautiful and amazing characteristic of the flat surfaces is here exploited for the satisfaction of base lust: yet, characteristically, such an imbalanced lust is bound to remain unfulfilled, for Hostius seems never to achieve the perfect pleasure he seeks.²⁵ Even more importantly, the tale of Quadra's illicit couplings closes the exposition inaugurated by the praise of intellectual pursuits, hailed as proper to the divine nature of human intellect; indeed, it is in Book One that we find the following description of *summum bonum*:

Virtus enim ista quam affectamus magna est, non quia per se beatum est malo caruisse, sed quia animum laxat et praeparat ad cognitionem caelestium dignumque efficit qui in consortium deo veniat (I, praef. 6).

²²A comprehensive study of the ancient causal theory was conducted by R. Hankinson in his *Cause and Explanation in ancient Greek thought*, Oxford Clarendon Press 1998, the Stoic doctrine coming under scrutiny in Chapter Seven (pp. 238–267).

²³The assumption, routinely attributed to the Stoics, occupies a prominent place in Alexander of Aphrodisias' critique of the doctrine (*de fato* XXII).

²⁴The following uses of mirrors are defined in *NQ* I 17: acquisition and furthering of human knowledge of the world (reflected images are sometimes easier to behold), evolution of human self-knowledge, development of civilization.

²⁵One may be reminded of the Socratean example of itch and the pleasure brought by scratching, quoted in *Gorgias* (494a–495a). The instructive or pedagogical input of the Quadra tale has been recently discussed by F. Limburg „The Representation and Role of Badness in Seneca's Moral Teaching: a Case from the *Naturales Quaestiones* (*NQ* 1. 16)”, [in:] I. Sluiter, R.M. Rosen *Kakos. Badness and Anti-Value in Classical Antiquity*, Mnemosyne Suppl. 307, Brill 2008, pp. 433–450.

Effectively, Hostius becomes a contrasting example of less-than-human behavior, the baseness of his passions in vivid contrast with the sublime pursuits and pleasures of the inquiry into celestial fires²⁶ (meanwhile, the ethical progress is defined both as a result and as a condition of intellectual pursuit of true knowledge: as we learn, we become better men, but conversely in becoming morally better we also yearn to acquire theoretical *sapientia*, the knowledge of what is true).

In another instance of the imbalance analysis, the Roman gourmands assembled for consumption of fine food become obsessed with the alleged beauty of dying fish – the description, possibly one of the finest examples of Seneca’s literary skill, follows the death spasms of the slowly suffocating animal, simultaneously dwelling on the fascinated response of the banqueters. Since, as it was in the case of Quadra, the prior flow of narration, being focused on terrestrial waters, gave a reader no inkling of what was forthcoming the image of the usury comes as a surprise, a circumstance enhancing the contrast between the carefully maintained balance of the elements and the gross misuse of intellectual abilities manifested by the humans. Even more importantly, Seneca suggests that the gluttony of his protagonists transcends the ‘usual’ limits constituting in fact a gluttony of eyes, a bizarre metaphor indicating a transference of the type of desire linked to the sense of taste onto quite different instrument of cognition, namely the sense of sight: as a result of this confusion, the esthetic pleasure experienced in the observation of the changing hues becomes necessary in what should be a satisfaction of simple hunger. Further, what Seneca suggests is in fact a gradual development of this particular vice, for humankind may be imagined to have started with a necessary quest to satisfy hunger, passing through certain preference for particular kinds of nutrition, twisted hunger for ‘finer’ food, to conclude (?) its degeneration with the need for varied stimulation of the senses. In the essence, this last phase indicates an inability to satisfy the ‘natural’ craving for food, or, taken at another angle, even certain inability to experience a natural or indeed most basic *orexis*.

Clearly, what began as an understandable and easily acquired²⁷ preference for better food led to unexpected development of what may be termed *synesthesia* – yet, the need for this ‘multiplied’ experience indicates the loss of restraint, obliteration of natural norm, the constant dependence on possibly increasing number of external stimuli. The gourmands are in fact unable to experience

²⁶The importance of this particular contrast in the composition of Book One was discussed by D.D. Leitão *Senecan Catoptrics and the Passion of Hostius Quadra* (Sen. “*Nat. Quest.*” I), “Materiali e discussioni” 41, 1998, pp. 127–160. Compare also G. Williams *Interactions: physics, morality and narrative in Seneca’s “Natural Questions” I*, CPh 100, 2005, pp. 142–165.

²⁷The mechanism would be identical with that reconstructed for Cicero’s *Tusculanae disputationes* by Margaret Graver in her *Cicero on the emotions*, University of Chicago Press 2002, pp. 129–184.

happiness – their love of pleasure entraps them in the never-ending quest for fulfillment, making their happiness dependent on senses rather than what is considered truly human, i.e. reason. Further, the gourmands confuse the providential order: an instrument developed to serve quite different and elevated need (quest for knowledge), is here wrongly applied (i.e. misused) to serve the need of the basic need of nurturing oneself. One should not underestimate the importance such a misuse might have had for a Stoic: as sight and seeing serve the needs of cognition, thus contributing to our intellectual development (thus, contribute to the actualization of our rational nature) their misuse is indicative of particularly vitiated judgement: in the essence, the gourmands (consciously or not) seek to pervert the original design of the world. Similar perversion of providential gifts is discussed in Book Five, where the possibilities offered by regular wind patterns are exploited for the strategic purpose of conquest. Transporting military troops overseas constitutes, at least in Senecan vision, a major transgression – providence allowed for the sea travel for a number of reasons, among which we may list the balance of terrestrial climate or facilitation of the exchange between the farthest realms of inhabited world, but also, possibly most importantly, the furthering of man's intellectual capacities (V, 18). Thus, while providence secured the regularity of winds to allow us the study of nature in all its multifaceted splendor, human nature abuses the original design to further his own desire for glory, a desire bringing men no happiness and remaining, in the essence, insatiable very much in the fashion of misguided hunger or twisted sexual drive. In this quest, man not only misunderstands the divine, turning his back on the wisdom intrinsic in the world order: he actively corrupts the universal design. To quote the symptomatic expressions of the philosopher:

Nihil invenies tam manifestae utilitatis quod non in contrarium transeat culpa. Sic ventos quoque natura bono futures invenerat; ipsi illos contrarios fecimus (VI 18, 15).

Weighted down by vice, we are unable to discern the true nature of the world (hence, to recognize the omnipresence of the divine).²⁸ Furthermore, vice draws us to employ what intellectual faculties we possess to serve the needs we share with savage beasts, this inversion of original design leading to further disruption in the orderly arrangement (still, we need to remember that such diversions are in a way, a calculated risk when considered against the universal perspective). The error is both purely intellectual as applicable to the realm of theory for a vicious man misunderstands and misjudges the arrangement of things and practical, since his actions do not contribute to achievement of happiness. At the same time, vice affects both an individual (as minimizing his chances of being what he

²⁸ „Non tamen, . . . , quaeri possumus de auctore nostri deo, si beneficia eius corrumpimus et ut essent contraria effecimus” (VI 18. 13).

truly is) and the world (as confounding the intended order of things). In the mind of vicious persons things become what they are not, a case very similar to what happens in the diseased mind, and he fails to recognize benefits provided by providence. Meanwhile, proper contemplation of physical phenomena alerts man to the intrinsic order and rationality of the universe, thus increasing his awareness of his own position, false character of many apparent goods, and indifference of many apparent evils. It is in the description of the universal catastrophe, the flood, that Seneca's argument finds its possibly most succinct formulation: *scies quid deceat, si cogitaveris orbem terrarum natare*²⁹ (III 27. 15). The image of the dying word, of masses dying in the swelling waters, is conversely regarded as a source of solace: in this apparently tragic moment we see ourselves passing away together with all the world. Thus, there is consolation in the knowledge that one perishes together with the world. Similarly, there is consolation in the proper cognition of the rules governing the universe, in the perception of universal order and of the workings of providence. Thus, the intellectual cognition becomes essential to our peace of mind, indeed the two merge into one single entity. As it was indicated above, in learning we become better humans. Or, to be more precise, in learning we become humans.

To conclude this necessarily brief and introductory overview: as a result of Seneca's technique of juxtaposition and his skillful implementation of the contrast principle the human immoderation, juxtaposed with the balance of the world, becomes a visible sign of the dangers of irrationality, of failing one's own nature: Hostius Quadra as well as the gourmands described in Book Two provide examples of massive misuse of one's own rationality, while their search for pleasures reduces them into a travesty of humans: their eyes, intended as instrument of contemplation and instruction, are turned into instruments of pure usury, converting the men into creatures more contemptible than savage animals. Additionally, their desires seem never to be satisfied: the most revolting sexual practices, seen in most complex of mirrors, remain unable to quench the lust of Quadra, which Seneca terms explicitly *insatiabile malum* (I 16.3), while the depraved tastes of the Romans render them unable to satisfy a simple hunger without engaging number of other senses: effectively, their corruption is such as to need more and newer stimulants to satisfy the least complex of yearnings.³⁰ This provides yet another aspect of the contrast: while the arrangement of the world

²⁹ For an extended analysis of the concept compare F. Limburg's dissertation *Aliquid ad mores. The prefaces and epilogues of Seneca's "Naturales quaestiones"*, Leiden 2007, available at <https://openaccess.leidenuniv.nl/bitstream/handle/1887/12081> (25 Sept. 2012).

³⁰ One is reminded of the comparison between vice and virtue-derived joy in *Ep.* 59. 14 sq. It is there that we find the definitive description of the state of joy that follows upon acquisition of virtue: *Hoc ergo cogita, hunc esse sapientiae effectum, gaudii aequalitatem. Talis est sapientiae animus, quails mundus super lunam: simper illic serenum est* (ibid. 16; *Reflect, therefore, on this, that the effect of wisdom is a joy that is unbroken and continuous. The mind of the wise man is like the*

relies on its (more or less) manifest and balanced principles, with living beings/elements etc. consuming as much as is needed for their preservation, human individuals, in spite of the natural rationality of mankind, indeed, against nature itself, strive for more than their due. This in turn results in the loss of balance and yet, it brings no fulfillment: an irrational human, ruled by his base passions is doomed never to experience satiety³¹ – at the same moment, his desires compel him to seek more and more extravagant pleasures. Thus, the difference between the natural and the unnatural state of human individual seems reduced to the fundamental experience of being at peace with the world (which for a Stoic means being at peace with the divine). This latter manifests itself in the cherished state of *tranquillitas* – in beholding the intentional and purposeful arrangement of the universe, the Stoic sage achieves the summit of human potential for good – he embraces the rational and he turns his back on the basic instability and emotional turmoil of the so-called ‘human’ life. It is not even that he is in control of the *tonus* of his soul – he remains beyond the reach of the ugliness and insatiable yearnings of those whom one should not in fact consider humans, men who fell short of their own rationality. Furthermore, the majestic beauty of nature, its organization and order, as they are described in the *NQ*, becomes necessarily endowed with a psychagogic power (an assumption Seneca shares with other imperial thinkers) – they constitute a visible, omnipresent reminder of the orderly, the regular, and the perfect. Even of our knowledge of the world remains incomplete, as it indeed must owing to the weakness of our intellect, it serves to heighten our awareness of our own status in the universe, or to awaken our sensibility to what is truly important in life, while simultaneously bringing us to the full appreciation and understanding of our own humanity. It is probably in this sense that we should view the statement quoted at the very beginning of this essay (*Ep.* 53. 8): the *philosophia* invoked there, and defined in *Ep.* 89. 4 is the love of wisdom (*sapientia*), that latter being very much the combination of logic, physics, and ethics that shapes one’s soul into one perfect entity resembling the divine, the only true and perfect good available to humankind (*perfectum bonum mentis humanae*). After all, as Seneca himself acknowledges elsewhere: *virtus secundum naturam est* (*Ep.* 50. 8).

ultra-lunar firmament; eternal calm pervades the region). The superlunary realm was routinely considered a seat of regularity, order and stability in contrast with that situated below the Moon.

³¹The similar sentiment is also expressed in *Ep.* 16. 9: „naturalia desideria finite sunt; ex falsa opinione nascentia ubi desinant, non habent. Nullus enim terminus falso est. (Natural desires are limited; but those which spring from false opinion can have no stopping point. The false has no limits”).

QUID EST PRAECIPUUM? STATUS AND USES OF PHYSICS IN THE *NATURALES*
QUAESTIONES OF SENECA THE YOUNGER

Summary

It is argued that the Senecan concept of physics, indebted as it is to earlier Stoic writings, allows the Roman philosopher to think of the respective inquiry in terms of ultimate science, a lore that brings humans closer to the divine, but also possesses profound ethical consequences. The understanding of universal law becomes mandatory, but also sufficient for ethical progress, while the notion of cosmic balance is employed to reject the excess and lack of measure so characteristic of vice. Under the guise of discussing very particular physical questions, Seneca inquires into the eternal, immutable Law, thus indicating the way for human betterment and achievement of perfection.