The Inexorable Lucretius*

Felix qui potuit rerum cognoscere causas
Atque metus omnes, et inexorabile fatum
Subjecit pedibus, strepitumque Acherontis avari.
Vergilius, *Georgica* II. 490-492

As a historian of science, the theologian and physician Stanley L. Jaki published the translation of three major cosmological works with informative introductions and explanatory notes (Bruno 1975, Kant, 1981, Lambert 1976). Besides being of obvious interest to the historian of science, the "timeless importance" of these works is due to their topic since, according to Jaki (1989, viii), "[a]ll great philosophical systems have been cosmologies". (Of course, a work on cosmology does not imply a great underlying philosophical system; nevertheless, its topic is the most important for a theologian and philosopher.) Common to these cosmological works is that they also provide cosmogonies aimed at explaining the genesis of the universe without explicitly referring to a creative act of God.

These works are the products of a historical period, some of the most significant thinkers of which, according to Alexandre Koyré's influential interpretation (1957), took the steep path from the closed world to the infinite universe.[1] The beginning of this period virtually coincides with what has recently been termed the "Lucretian renaissance" (Passannante 2011): the date of the birth of modern materialism, instead of Descartes' age, is the early fifteenth century, marked by the rediscovery in 1417 of Lucretius' *de rerum natura* (henceforth: *DRN*[2]). The "Lucretian renaissance" is more than the mere reappropriation of the thoughts of an author whose work, until then, seemed to be doomed to oblivion: this rebirth implies a particular attitude, the birth of which is inseparably tied to the birth of the printing press. (The *editio princeps* of *DRN* was published in 1473). Passannante's explanation of the effect of the printing press on thinking differs from that of Elizabeth Eisenstein. While for her, the fixity and

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[1] As Koyré (1957: 10) emphasised, this does not mean that before the rediscovery of Lucretius, it was impossible either because of inherent philosophical reasons or due to alleged theological restrictions on thinking of the plurality of worlds (or the eternity of the world). Neither do I intend to suggest that the appropriation and the continual reinterpretation of Lucretius' work in itself marked scientific progress or the "birth of modern science". Depending on the criteria one chooses, it is equally justified to regard, in the wake of Pierre Duhem and Jáki, the 1277 Paris condemnation (cf. Jaki 1966: 418, where he refers to Duhem) or endorsing Crombie's standpoint, the experimentalism of Robert Grosseteste as the "birth of modern science". For a balanced assessment of the merits of these views, cf. Lindberg – Shank 2013.

[2] I use Bailey's edition and translation to quote from the work. See *Bibliography*.

uniformity of texts it made possible is the precondition of learning modern sciences, for him, the printing press implied the dynamism of the text. Thus, "...Renaissance readers ...came to discover the poet's vision of flux and change and to see it in themselves and their texts" (Passannante 2011: 8).[3] This fluidity reproduces the world of atoms: just as the infinite combinations of atoms bring about various objects, combinations of words bring about so many thoughts (and combinations of them). Based on this model, the author intends even to read "a history of materialism into a history of letters", asserting that "the history of materialism in the Renaissance is inextricably tied to a history of literature and the material text" (ibid., 2011: 3). If this conception is plausible, then the revival of materialist thought in the Renaissance is due not only to the reappropriation of Lucretius but also to the book as a medium (materialism being the message mediated by it). From the perspective of the historian of science, for whom an important criterion of the progress of scientific thought in the Middle Ages is the step-by-step alleged divergence from Aristotelian-Thomistic cosmology, the intellectual heritage of Lucretius is a significant contribution to this process.

Lucretius was an important figure in the history of ideas for Jáki, as is well attested by the numerous references to him in his works. This seems to require no further explanation: Jáki, the historian of science and ideas, could not have neglected Lucretius, the author of the most important cosmological work of ancient Roman literature. This supposition, however, does not prove to be tenable. Jáki appears to have regarded Lucretius, the thinker, as insignificant. His judgment agrees with that of Pierre Duhem, except that the latter highly appreciated Lucretius, the poet. (Jaki [1984: 89] cites André Chevrillon, according to whom Duhem recited Lucretius by heart.) Duhem, who embodied for Jáki the "scientist and catholic" in his monumental, ten-volume work on the history of cosmological ideas from Plato to Copernicus, referred just a few times to Lucretius and even in these rare cases because of his qualities as a poet. Moreover, he does not even mention him in the last volume dealing with the 15th-16th century developments when the problems with Lucretius begin for Jáki. His judgement is corroborated by Pessannante (2011: 11ff.), who emphasises Lucretius' poetic excellence, which made contemporary thinkers "vulnerable" to his thoughts.

If Jáki regarded Lucretius as an insignificant thinker whose thoughts are neither original nor subtle enough to be worth analysis, the question of why he refers to him so often seems to be

[3] The opposition of textual fixity and textual dynamism need not, of course, be absolute. Eisenstein does see "[t]ypographical fixity ...a basic prerequisite for the rapid advancement of learning" (1983: 87), but this doesn't contradict the dynamic nature of the text; the static and the dynamic nature may well belong to different levels of the process of appropriation.

unavoidable. I suggest that the answer to the question is to be sought in Lucretius' intellectual heritage. In the following, I aim to highlight some contexts in which, for Jaki, the confrontation with Lucretius appears to be inescapable despite the poet's alleged insignificance as a thinker. These contexts represent different aspects of confrontation.

1. *Lucretius the heretic.* In his autobiography, Jáki mentions Lucretius just obiter but in a telling context (Jaki 2002: 255). Here, he is a thinker who "messed up whatever was of good science in his time." He was not alone in this – "Nothing is new under the sun" – he had an ally in Darwin's person. Since here, Jáki quotes another person's thoughts on the subject of religion, Lucretius and Darwin seem to have been put next to each other by chance. However, they share something in common in addition to harbouring hostile feelings toward religion: a theory of evolution. Lucretius, too, conceived an evolutionary theory which, from the Renaissance to Darwin, counted as the most important non-theological theory concerning the origins of human beings as well as their place in the cosmos. Therefore, although he does not state it explicitly, Jáki must have placed side by side the two thinkers apparently because of their evolutionary theories. That said, this passage implies two statements. 1. Lucretius (and Darwin) were foes of religion; 2. Lucretius (and Darwin) "messed up" everything good in the science of their age. Jáki doesn't assert a connection between the two statements.

I will not deal here with statement 2 because for Jáki, as already said, Lucretius was insignificant as a thinker. Concerning statement 1, one must make an important caveat: Lucretius was not an atheist without any further qualification. If, however, it is true, then Jáki doesn't accuse Lucretius of ir- and anti-religiosity because of his criticism of religion; his reasons must be sought somewhere else.

Lucretius rejects the traditional Roman piety, arguing that *religio* binds the mind by instilling fear of the wrath of gods (*timor* or *metus deorum* [*divum*]), due to which the captive mind turns away from the truth (or fears to turn toward it) and as a result, becomes unable to reach philosophical insight. To illuminate the significance of this view, let me contrast here two phenomena, *timor divum* and *timor Domini,* which at first sight may seem very similar. The former prevents the mind from recognising the truth, while the fear of the Lord (*yirat elohim/timor Domini*) is – besides being what God desires of man in the first place (Deut. 10-12) – the beginning of wisdom (Prov. 1:7). The believer's fear of God is an awe-inspired respect for the numinous, while the fear of Gods characteristic of pagans is the panic fear or fear of punishment.[4] Thus, the fear of gods criticised by Lucretius has little to do with believer

[4] Note, however, that while the former is described here from within (from the believer's perspective),

Jáki's (the Christian believer's) fear of God. Consequently, it would seem that Jáki accused Lucretius of harbouring feelings hostile to religion in general based on arguments formulated by the poet, particularly against the Roman pagan religion (which would, by the way, have offered itself as an appropriate target of their joint criticism).

Thus, either it is the case that Jáki was simply wrong (or was not a subtle enough reader), or he rejected Lucretius for other, not explicitly formulated reasons. It is our task here to explicate these. To do this, let me recall Leo Strauss' famous distinction between Athens and Jerusalem[5] (Strauss 1967; cf. Denker 2022). For Jerusalem, the beginning of wisdom is the fear of God. This fear is not the panic fear of the pagans and not only (or not primarily) the fear and trembling of Abraham but the fear accompanied by hope (Denker 2022: 145). The wise, in the biblical sense – a conclusion not drawn by Strauss himself – seems ultimately to be the believer whose vocation is to interpret God's words and works. In contrast with the wise in the biblical sense, the starting point for the wise in the Greek sense is wonder (Strauss 1967: 149). The Greek wise (*physiologos* or *physikos*) seeks to explain the phenomena of nature (the concept of which is foreign to the Bible, cf. Strauss, op. cit.: 151) referring to *causes,* not God's words. In this respect, Lucretius is a representative of Greek wisdom (*DRN* echoes the title of books conventionally ascribed mainly to presocratic philosophers περὶ φύσεως). Therefore, I will take Lucretius as a representative of Athens (keeping in mind that the poet transformed Greek wisdom, cf. Sedley 1998). Seeking causes in nature as a subsistent entity which is independent of God(s) does not exclude piety – though, of course, it diverges from the traditional Roman folk religiosity: the poem begins with a hymn to Venus (the poet invokes the goddess); there *are* gods, and they dwell in the *intermundia* (the spaces between worlds). However, they do not interfere in worldly affairs, and therefore, there is no providence or divine law. Thus, the interpreter has to face a peculiar constellation: a materialist poet with undeniable religious affinity and sensibility. (Supposing that an honest interpreter does not explain away the religious allusions as mere ornaments.) The possible solution to this riddle lies in seeing Lucretius as a believer in the God of natural theology or "God of philosophers" (like some AI theorists) and not the personal, providential God. As Bergson (1977 [1932]: 230) asserted, the two conceptions were so different they might have referred to two different objects.[6]

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the latter from without (from an outsider's perspective).

[5] The origin of the distinction can be traced back to Tertullianus' famous question: "Quid ergo Athenis et Hierosolymis?" (*De praescr. haer.* 7, 9-13.)

[6] At the beginning of his career (1884), Bergson edited a selection from *DRN* and wrote an essay on it. He emphasised his "ability to grasp outright the two-sided character of things" (i.e. "[h]e manages simultaneously to appreciate the pattern that appeals to the geometrician and the pattern that appeals to

From the foregoing, it is obvious why Jáki could not avoid confrontations with Lucretius: the cosmogony and cosmology described by him offered an alternative to the cosmogony and cosmology of the book of *Genesis* (even if the creation is not *creatio ex nihilo*, cf. Jaki 1988: 55) as well as *John*. Despite the internal flaws and inconsistencies of his poem,[7] Lucretius' intellectual heritage survived and proved to be easily revivable in the 15th century and has since then been constantly reappropriated and reinterpreted in different ways (as attested to, among others, by the works translated with explanatory notes by Jáki himself). The name of 'Lucretius', however, refers also to Epicurus whose views the poet exposed in *DRN.* Epicurus came soon into disrepute due to his atomism (which implies atheism and the denial of the immortality of the soul) and hedonism. Thus, Lucretius, as the expositor of epicureanism, offered himself as a target of criticism for the believers in a personal and providential God.[8]

2. *Lucretius the iconoclast.* In perhaps his most comprehensive and theoretically most demanding work, Jáki (referring to Plutarchus *Nic*. 23) evokes a phenomenon of ancient Greek intellectual history. At the end of the Golden Age of Athens (sealed for good by Socrates' death), "natural philosophers" (φυσικοί) or "visionaries" (μετεωρολέσχαι) entered the scene who "reduced the divine agency down to irrational causes [εἰς αἰτίας ἀλόγους], blind forces, and necessary incidents". Therefore, "men could not abide" them, they were repudiated and rejected by the decisive part of the Athenian public (while some of them "had to go into exile", Socrates, whom many regarded to be a natural philosopher [φυσιολόγος, cf. Strauss 1966: 21, 123, 186], was sentenced to death on charges of impiety (ἀσέβεια), besides those of corrupting youth (Plato, Apologia 35d; cf. Nestle 1942: 481ff).

The incriminated natural philosophers eliminated the reference to divine agency from their explanation of natural phenomena, which, for the Athenians, meant that they resorted to irrationality. By contrast, Plato "subjected the compulsions of the physical world [τὰς φυσικὰς ἀνάγκας] to divine and more sovereign principles", taking away the obloquy (διαβολήν*)* of such doctrines as these, making them acceptable to the public.[9]

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the artist") and that it "is the source of the incomparable originality of his poetry, his philosophy" (Bergson 1959: 56).

[7] About these flaws concerning, e.g., the genesis, cf. Strauss 1968: 120-124.

[8] There were attempts at reconciling epicureanism and Christianity, especially in the Renaissance. Cassirer (1963 [1927]: 79) summarises the Christian hedonist Lorenzo Valla's insight in the following way: "Valla's basic thesis states that Christianity is not inimical to Epicureanism, for it is itself nothing but a more elevated and 'sublimated' Epicureanism. Is the bliss that Christianity promises its followers anything but the highest and most complete form of pleasure?"

[9] Lucretius does very much the same thing, setting forth his "reasoning in the sweet-tongued song of the muses" instead of making his reader gulp down Epicurus' philosophy full" since it "often seems too

In other words, Plato appears to be going backwards: while those who interpret the history of ideas as a linear process see the history of Greek thought as a progression from mythos to logos (Nestle) – i.e., from the fable to the conceptual, rational thought – Plato returns to mythos (especially when it seems easier to explain something using a story). However, this is not the case, according to Jáki: Plato rejected crude superstition like the atomist and, at the same time, appealed to supernatural principles. He adds (1966: 413) that "[t]he day was still far away when Lucretius would spell out bluntly the 'iconoclast' effect of scientific investigations in general." Jáki here refers to *DRN* 1.1-101, where Lucretius, singing the praises of Epicurus, claims that his hero "who dared first to raise his mortal eyes to meet her, and first to stand forth to meet her" [i. e. religion] was also "the first to break through the close-set bolts upon the doors of nature", and eventually "religion in revenge is cast beneath men's feet and trampled, and victory raises us to heaven (1.66-79). The "iconoclastic" would thus mean that natural philosophy (i.e., science) presents us reality in a pure form, without images (εικόνες) or mythological elements, stripped of enchantment and everything that might suggest transcendence. It would have been obvious for Jáki to associate the motif of iconoclasm with the natural philosophers of the age of Pericles, whose activity has had disastrous cultural effects anyway (not to speak about the "Socratic revolution"[10]) – still, Jáki links it explicitly to Lucretius. Why does he do this? – and why is the word in quotation marks?

According to the standard view, Roman philosophy and science represent a decline compared to their Greek counterparts. Understood in this way, Jáki would suggest that the iconoclastic effect is unavoidable in the case of good science; because of its miserable quality, Lucretian science cannot trigger this. However, the use of quotation marks could also suggest that although Lucretian science did have this effect; it transgressed the sphere of validity or competence. According to Jáki's view of the relationship between science, religion, and philosophy (see, e.g. Jaki 2006: 57ff; 1997-1998), the "iconoclastic" science violates (or science becomes "iconoclastic" by violating) the autonomy of religion and philosophy. According to the "traditional popular images" inspired also by science, science is "the supreme tool and power for gaining knowledge; ... the irresistible, always righteous iconoclast; ... the most effective force in life; ... the most noble human instrument perverted only by the evil in

bitter to those who have not tasted it." *DRN* I. 931-950.

[10] The "revolution", as used by Jáki in "Socratic revolution", refers to a destructive (or with an adverb preferred by Strauss, subversive) political activity (cf. "res novae") which affects religiosity as well. A revolutionary, in this context, is one who, according to the judgment of the demos, presents a threat to the state by claiming as an individual a right over the community (cf. Nestle 1942: 478).

man; ... the unsurpassed debunker of 'absolute' truths and values; ...the pattern that should be imitated in all areas of human endeavor; .. finally as the great magic that transforms the scientist into a wizard and an oracle" (Jaki 1966: 505). (One manifestation of this being that physics exerts "iconoclastic effect" on philosophy, sf. Jaki 1966: 335). This transformation of the scientist into oracle is the outcome of the transgression of boundaries. Driven by its inner logic alone, scientism must lead to "dehumanization of science" (ibid.: 516f.) On the one hand, the fostering of scientists' historical consciousness, and on the other, seeing science as a part of *human* culture (ibid.: 519) can serve as antidotes to this. By ascribing to Lucretius the view that science has an iconoclastic effect, Jaki suggests that Lucretius is the *fons et origo* of the predicament caused by scientism.[11]

"Iconoclasm" has theological, political, and metaphysical connotations as well. The late Greek word *εἰκονοκλάστης* is associated first of all with 8-9th century Byzantium, where the iconoclasts, driven by the dogma of the theological impossibility of the artistic representation of Christ (because of his dual nature, as declared by the Nicene Creed), sought to physically destroy such representations; however, such representations have ever since been created and have not been worshipped as idols by Christians – also this fact supports putting "iconoclast" in quotation marks.

According to the *OED,* the word "iconoclast" has been used since the late 16th century to refer to protestants who similarly destroyed images in churches. That iconoclasm can also have serious, and from a conservative point of view, hardly approvable political consequences are evident from the fact that protestant Milton's *Eikonoklastes* was generally read as a justification of the execution of Charles I. The same applies to the realm of metaphysics. By putting "iconoclast" in quotation marks, Jaki perhaps suggests that he has reservations about the effort of philosophers to call for the incessant critical examination of our assumptions accepted uncritically or for the ridding of our idols of the mind (*idola tribus*). As the 19th-century Unitarian theologian and philosopher James Martineau (1866: 77) said of Kant (as a variant on the Mendelssohnian theme of "all crushing Kant"): "Kant was the great iconoclast who discredited all objective entities as idols of the mind...".

[11] Moreover, Jáki sees the belief in the superhuman power of science as the result of the mechanistic philosophy, i.e., materialism, which implies atheism. He lived a great part of his creative period during the Cold War, and his generation experienced as a real threat the existence of a military alliance the leading power of which propagated materialism and atheism. Therefore, he was presumably convinced that it was his duty as a scientist to be an "engaged spectator" and come out in his field against the worldview underlying the communist system. In this regard, his attitude was akin to that of Sir Karl Popper, who saw Plato as the forefather of the enemies of the open society.

3. *Lucretius and the swerve.* In his book about the artificial mind or intelligence (1969), Jáki ventures to criticise the physicalist approaches underlying the arguments for its possibility. He begins his historical overview with the mechanistic atomists, ascribing a privileged position among them to Lucretius as the exemplary embodiment of logical inconsequences and fallacies. Jáki resorts to reductio ad absurdum type arguments to show the untenability of his approach, pointing to a basic inconsistency of Lucretius: if the world and its phenomena are constituted only by atoms and the void, the activities of the mind, too, must be determined by the movements of mind-atoms (which are much subtler than ordinary ones, *DRN* III.179-185). Despite its determinedness, however, the mind chooses: "... mind loses all else, save only things to which it is given up" (*DRN* IV. 814f). The choice, however, is a par excellence ethical act ("*Ethos is above Logos*", Toth – Polizzi 2022: 126ff): what the mind turns its attention to and what it chooses from the world entails responsibility, and choice implies a subject understood as a person acting spontaneously. (As Kant put it: acting according to "a special kind of causality in accordance with which the occurrences of the world could follow, namely a faculty of absolutely beginning a state, and hence also a series of its consequences") (Kant *CPR*, A 446/B474). Curiously, however, Jáki doesn't mention here the motive which has been inseparably associated with Lucretius: the *swerve* (παρέγκλισις, *clinamen*), the condition of free will.[12] We do have free will, which is "wrested from fate" (*libera... fatis avulsa voluntas*). (This will, however, is still in bondage for the reason that "we move forward, where pleasure [*voluptas*] leads each one of us", *DRN* II.258).[13]

To explain the phenomenon of free will, Lucretius reasons analogically: if atoms fell straight downward "by their own weight" (*DRN* II.218), performing uniform movement, nothing could ever come about since the atoms could not coalesce into larger bodies (because they would not collide). However, a random event called *declinatio* occurs which accounts for the combinations of atoms. In the same way, "we swerve... in our motions neither at determined times nor in a determined direction of place" (*DRN* II.259f.). Drawing an analogy, however, is not the same as explaining. If Lucretius fails to identify the cause of the swerve, then he resorts to something irrational as an explanation – unless the swerve is the ultimate cause. Jáki obviously cannot accept this conclusion and cannot but neglect free will in Epicureanism as

[12] Greenblatt (2011) ascribes to Lucretius' work (and especially the concept of the swerve) the birth of modernity.

[13] Freedom of the will is not easy to reconcile with the view that first idols of something "strike the mind ... then comes the will" (*DRN* IV.881ff). See Bailey's commentary on the locus. The will is in bondage also because we chase incessantly what we yet don't have (*DRN* III.1084f.).

well.[14] However, this is hardly justified due to the historical influence of the concept.[15]

Lucretius gave a more or less coherent description of the genesis and operation of the universe and ascribed – be this irrationally – free will to human beings, thus endowing them with what, from a Jewish or Christian perspective, is a sign of their being made in God's image.[16] As a result of the reappropriation of Epicurean thought from the early 15th century, freedom of the will has become more and more thinkable without positing a God who, from his free decision, created a being endowed with that capacity. Among the thinkers who from the idea of the closed world have come to that of the infinite universe, many represent for Jáki various shades of materialism (deism, pantheism, panentheism).

The late heirs of this intellectual tradition are the computer scientists and physicists (we could continue the enumeration in this spirit to include neuroscientists and philosophers) who believe in the possibility of an artificial mind or intelligence since this implies the belief that mental phenomena can be reduced to physical ones (make the former correspond to the latter). For Jáki, the ideal-typical embodiment of this physicalist thinking is Alan Turing, who raises the question of divine omnipotence in the context of the so-called theological objection to the possibility of AI. Turing believes that to assert that "no animal or machine can think ... implies a serious restriction of the *omnipotence*[17] of the Almighty" because "God has given an immortal soul to every man and woman" (Turing 1950: 443; quoted by Jaki 1969: 228f.). In the same book, Jáki discusses at some length Charles Babbage's considerations on the possibility of reproducing human thinking by machines and a passage in which Babbage "described the Creator as an infinitely skilled programmer" using the attribute *omniscient* (Jaki 1969: 44). What these seemingly random quotations from Turing and Babbage betray is that thinkers who (with the necessary qualifications) believe in the possibility of AI, despite their reductionist tendencies do usually have some conceptions of God.[18] Their God, however, is

[14] In one of his later works, he briefly refers to "random swerving" as a manifestation of incoherence in the thinking of the ancient Greek physicists who "tried to break down [the] ... wall of division between celestial and terrestrial matter" (Jaki 1988: 69).

[15] This neglect may be due to the fact that in his university thesis on *The difference Between the Democritean and Epicurean Philosophy of Nature,* Karl Marx regards Epicurus (i.e. Lucretius) as the climax of Hellenistic philosophy ("the great Aufklärer") who interprets the swerve "as the principle of human selfconsciousness", thus holding "it responsible, ultimately, for the victory of humans over superstition [i.e. religion]". Asmis, 2020: 242.

[16] Thus, Hadzsits (1935: 348) could justifiably claim that Epicurean ethics laid as much stress on the supreme value of the individual as Christianity.

[17] My italics (ZÁ).

[18] They are, so to speak, naturally tempted to form just this conception due to the technical possibilities. Nyíri (1992: 82) identifies *omniscience* as an ineliminable *ideal* of the age of information.

fundamentally different from the personal and providential God. This latter is endowed with attributes (derived from Exodus 34:6-7) that can analogically be applied to humans. Omniscience and omnipotence, however, are not such attributes. They can be attributed in a literal sense to God alone (cf. Kenny 1979: 5f). This omniscient and omnipotent God is the God of philosophers who is as far away from the personal and providential God as Athens from Jerusalem.

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