

The Twelve Fundamentals - Discussion on Lucretius Today Podcast

Post by “Cassius” of June 20, 2022 at 7:54 AM

This coming Sunday we are going to swerve away briefly from the Letter to Pythocles for one week only, and we thought a good one week topic would be a general overview of the "Twelve Fundamentals," a now lost text of Epicurus focused on summarizing the most key aspects of Epicurean physics.

Our text will be two main sources - DeWitts reconstruction in our "Texts" section, and the differing list compiled by Diskin Clay in his article "Epicurus' Last Will and Testament."

If you have any comments or suggestions of points to include, please add them in this thread.

Post by “Eikadistes” of June 20, 2022 at 8:42 AM

Clay provides at least two lists of ΣΤΟΙΧΕΙΩΜΑΤΑ (STOIKHEIOMATA), with very minor differences. Also, I note that Clay does not try to reconstruct the same ΔΩΔΕΚΑ ΣΤΟΙΧΕΙΩΣΕΙΣ (DODEKA STOIKHEIOSEIS) that De Witt does (the "Twelve"). He omits the *Propositions* about uniform atomic motion and the atomic swerve.

In *Paradosis and Survival* (12), he writes:

- 1. “Nothing comes into being out of nothing.”** (EH 38.8-39.1, DRN I 145-150, 159-160)
- 2. “Nothing is reduced to nothing.”** (EH 39.1-2, DRN I 215-218, 237)
- 3. “The universe always was as it is and always will be.”** (EH 39.1-2, DRN II 294-307; V 359-363) (*Atomic Theory; Quantum Field Theory*)
- 4. “The universe is made up of bodies and void.”** (EH 39.6-40.2, DRN I 418-428)
- 5. “Bodies are atoms and their compounds.”** (EH 40.7-9, DRN I 483-486)
- 6. “The universe is infinite.”** (EH 41.6-10, DRN I 958-1001)
- 7. “Atoms are infinite in number and space extends without limit”** (EH 41.11-42.4, DRN I 1008-1020)

8. “Atoms of similar shape are infinite in number, but the variety of their shapes is indefinite, not infinite.” (EH 42.10-43.4, DRN II 522-527)

9. “Atomic motion is constant and of two kinds.” (EH 43.5-44.1, DRN II 95-102 [I 952])

10. “Atoms share only three of the characteristics of sensible things: shape, weight, mass.” (EH 54.3-6, DRN II 748-752)

In *Lucretius' Translation of Greek Philosophy* (35-39), Clay writes:

1. “Nothing is created out of nothing” (DRN I 145-150, 159-160)

2. “Nothing is reduced to nothing.” (DRN I 215-218, 237)

3. “The universe is made up of two components: body and void.” (DRN I 418-428)

4. “Body is understood as atoms and their compounds.” (DRN I 438-486)

5. “Atoms share only three of the characteristics of sensible things: shape, weight, mass.” (DRN II 748-752)

6. “Atomic motion is constant and of two kinds.” (DRN I 952)

7. “The universe is infinite.” (DRN I 958-864)

8. “The atoms are infinite in number, and space extends without limit.” (DRN 1008-1020)

9. “Atoms of similar shape are infinite in number, but the variety of their shapes is indefinite, not infinite” (DRN I 1008-1020)

Clay also has a slightly different version in *Lucretius and Epicurus*, but I do not have access to it. They are essentially the same, but Clay never presents the same list in the same order twice.

Post by “Cassius” of June 20, 2022 at 8:57 AM

Wow thank you for that Nate! I have read the "Last Will and Testament " version but never compared his versions in other works. This is extremely helpful!

Link to the Last Will and Testament article: ["Epicurus' Last Will and Testament" - by Diskin Clay](#)

Post by “Cassius” of June 20, 2022 at 8:59 AM

link to DeWitts list: <https://www.epicureanfriends.com/wcf/index.php?...tals-of-nature/>

01 Matter is uncreatable.

PN 02 Matter is indestructible.

PN 03 The universe consists of solid bodies and void.

PN 04 Solid bodies are either compounds or simple.

PN 05 The multitude of atoms is infinite.

PN 06 The void is infinite in extent.

PN 07 The atoms are always in motion.

PN 08 The speed of atomic motion is uniform.

PN 09 Motion is linear in space, vibratory in compounds.

PN 10 Atoms are capable of swerving slightly at any point in space or time.

PN 11 Atoms are characterized by three qualities: weight, shape and size.

PN 12 The number of the different shapes is not infinite, merely innumerable

Post by “Don” of June 20, 2022 at 9:15 AM

[Quote from Nate](#)

Clay also has a slightly different version in Lucretius and Epicurus, but I do not have access to it. They are essentially the same, but Clay never presents the same list in the same order twice

That's the primary problem with trying to reconstruct a lost text with NO surviving fragments. My understanding is that the ONLY reference to the "Twelve Fundamentals" is the one in Diogenes Laertius: *colour varies with the arrangement of the atoms he states in his "Twelve Rudiments". Δώδεκα στοιχειώσεσσί ; further, that they are not of any and every size ; at any rate no atom has ever been seen by our sense.*

Epicurus uses στοιχεῖα in the letter to Menoikeus (123) to refer to the elements of the noble/good life: στοιχεῖα τοῦ καλῶς ζῆν.

[Henry George Liddell, Robert Scott, A Greek-English Lexicon, στοιχεί-ωσις](#)

[Henry George Liddell, Robert Scott, A Greek-English Lexicon, στοιχείον](#)

Without at least some fragments, there's no way to know what the Δώδεκα στοιχειώσεσις discussed. Who knows? Epicurus could have been talking about something else and brought in the color and size of atoms to make a point about our senses. Maybe the Δώδεκα στοιχειώσεσις were about those who say we can't trust our senses and Epicurus was laying out why we could. There's no way to know again without at least some fragments of papyrus or other references.

PS. The only reference to a "twelve" of anything in the surviving fragments of Diogenes' wall inscription is: *For if the pain takes a turn for] the worse, it no longer continues severely, but the crisis comes and passes away in the shortest time; while if it is relieved, it ushers the creature to health. What then, in the name of the twelve gods, is terrible about that? Or how can we justly bring a complaint against nature, if someone who has lived for so many years and so many months and so many days [comes to his last day?]*

PPS: If I'm missing a key reference or textual fragment of the Δώδεκα στοιχειώσεσις, please don't hesitate to point me towards it! If love to be wrong about the one reference in Laertius.

Post by “Don” of June 20, 2022 at 12:50 PM

I took a look through my copy of Dewitt and he goes on and on about the *Twelve Elementary Principles*... But with what authority? He just states, with no citation to an actual text, things like:

The procedure was regularly from the general to the particular. The truths of Physics were reduced to Twelve Elementary Principles. These

corresponded to a general map, affording a panoramic view of the nature of things. Of the Twelve Principles the most important was the third: "The universe consists of atoms and void."

How can he state this so matter-of-factly? What is he basing this statement on? How does he know this is the third principle? Did I miss Lucretius expounding the Δώδεκα στοιχειώσεσις? I've tried to get just twelve principles from the letter to Herodotus and it's not easily done. Without question, Epicurus wrote a work called Δώδεκα στοιχειώσεσις but Diogenes doesn't list it among the most important works of the philosopher. Is it a later compilation? And are we sure it's about physics as I asked in my previous post. I respect Dewitt's scholarship (mostly), but many times he flies off in flights of fancy with, from what I can see, little to back it up.

Post by “Cassius” of June 20, 2022 at 1:03 PM

Yes looks like DeWitt started off looking for twelve and relied on Lucretius to come up with that number. I think he's making reasonable presumptions, and in fact most of what he comes up with lines up with Diskin Clay, but certainly not everything.

As usual we're largely on our own as to what is reasonable to presume and what is not. Almost like we're similar to Theon in "A Few Days In Athens" -- piecing things together over time.

Post by “Cassius” of June 20, 2022 at 3:24 PM

I started to write this earlier and pulled back. Now I have more time ---> In reading Diskin Clay's article on the "Last Will" it seems to me that he is potentially overly negative about certain aspects. The take-away I get is that he is "presuming" that the evidence indicates that Epicurus really spent most of his time writing letters to his inner circle that were disorganized and filled with jargon, and that it wasn't til near the end of his life that he really decided to systematize anything clearly.

Now I am reading Clay too harshly, probably, but maybe I would be interested in what @Nate has to say about Clay if he has read several of his articles (I note Nate already said that Clay's lists weren't consistent 😊) And one thing I have always taken away from the "Last Will and Testament" article is to say to myself "Diskin, you're saying Epicurus was unclear, when you entitle your paper something that barely reflects the subject matter?"

I think we see all the time that the personality of the writer of things gets projected onto Epicurus. DeWitt takes everything in a "sympathetic" way, other writers seem to strain to be as unsympathetic as possible, and the evidence in all likelihood isn't strong enough to say for sure which is right. It's a problem to guard against.

Post by “Don” of June 20, 2022 at 5:03 PM

Okay, since I couldn't find anything in DeWitt or in Clay to satisfy me, I went through and picked out ALL of the uses of the word στοιχείον (as in Δώδεκα στοιχείωσις) and its variations within Diogenes Laertius, Book X. It's used 5 times within the letter to Herodotus (the most within

Book X). I've included both the Greek and English (Hicks) from the Perseus Project below for everyone's inspection. Unfortunately, I have not had time (nor do I plan to take the time!) to go and search within Philodemus or the extant On Nature fragments. Sorry. Life is too short 😊

(30) Canonic forms the introduction to the system and is contained in a single work entitled The Canon. The physical part includes the entire theory of Nature : it is contained in the thirty-seven books Of Nature and, **in a summary form, in the letters.** (**καὶ ταῖς ἐπιστολαῖς κατὰ στοιχεῖον**)

The usual arrangement, however, is to conjoin canonic with physics, and the former they call the science which deals with **the standard and the first principle, or ***the elementary part*** of philosophy (περὶ κριτηρίου (kriteriou) καὶ ἀρχῆς (arkhes), καὶ ***στοιχειωτικόν (stokheiotikon)***), while physics proper, they say, deals with becoming and perishing and with nature.

(34) They affirm that there are two states of feeling, pleasure and pain, which arise in every animate being, and that the one is favourable and the other hostile to that being, and by their means choice and avoidance are determined; and that there are two kinds of inquiry, the one concerned with things, the other with nothing but words. So much, then, for his division and **criterion in their main outline**. (καὶ τοῦ κριτηρίου στοιχειωδῶς.)

From the Letter to Herodotus:

(35) Those who have made some advance in the survey of the entire system ought to fix in their minds **under the principal headings an *elementary outline* of the whole treatment of the subject** (ἐν τῇ τῶν ὅλων ἐπιβλέψει τὸν τύπον τῆς ὅλης πραγματείας τὸν *κατεστοιχειωμένον*). For a comprehensive view is often required, the details but seldom.

(36) ...since it is the privilege of the mature student to make a ready use of his conceptions by referring every one of them to ***elementary facts and simple terms** (πρὸς ἀπλᾶ στοιχειώματα καὶ φωνὰς (apla phonas "simple terms")).

(37) Hence, since such a course is of service to all who take up natural science, I, who devote to the subject my continuous energy and reap the calm enjoyment of a life like this, have prepared for you just such **an epitome *and manual* of the doctrines as a whole** (τινὰ ἐπιτομὴν (epitome) *καὶ στοιχειώσιν* τῶν ὅλων δοξῶν).

(44) But that colour varies with the arrangement of the atoms he states in his "Twelve Rudiments" (τὸ δὲ χρῶμα παρὰ τὴν θέσιν τῶν ἀτόμων ἀλλάττεσθαι ἐν ταῖς Δώδεκα στοιχειώσεσί φησι.)

(47) For if it changed its direction, that would be equivalent to its meeting with resistance, even if up to that point we allow nothing to impede the rate of its flight. **This is an *elementary fact* which in itself is well worth bearing in mind.** (χρήσιμον δὲ καὶ τοῦτο κατασχεῖν *τὸ

στοιχεῖον*) (NOTE: This is the one mention that gets close to stating this is one of the elements: Something like "Atoms don't change their direction or speed"??)

From Letter to Pythocles:

(86) We do not seek to wrest by force what is impossible, nor to understand all matters equally well, nor make our treatment always as clear as when we discuss human life or explain the principles of physics in general--for instance, that the whole of being consists of bodies and intangible nature, or **that the ultimate elements of things** are indivisible (ὅτι ἄτομα **<τὰ> στοιχεῖα**), or any other proposition which admits only one explanation of the phenomena to be possible.

From Letter to Menoikeus:

(123) Those things which without ceasing I have declared unto thee, those do, and exercise thyself therein, holding them to be **the elements** of right life*(στοιχεῖα τοῦ καλῶς ζῆν)

Clay says "His (Epicurus's) language makes it plain that he regarded the nine propositions set out earlier in the letter as stoicheia... "kai de touto" looks back to the stoicheiomata and their usefulness." I'm still unclear on how Clay is slicing the Letter to Herodotus to come up with only nine stoicheiomata, and the number is clearly 12 "elements." So, why would Epicurus only include 9?

I **think** I'm willing to accept that the Δώδεκα στοιχειώσις **probably** referred to the physics of Epicurus, BUT in Section 30, Diogenes Laertius specifically talks about Canonic being the στοιχεῖον... So, again, as I did earlier, I ask: Did the Twelve Elements refer to the atoms, void, physics stuff or did it refer back to the use of the senses within the canonic? Both DeWitt and Clay seem too self-assured for my full endorsement of their lists.

And I see what Clay was trying to do, I think, in calling the article after Epicurus's will. He's trying to say that even though Hermarchus is his philosophical heir, it is actually Lucretius who ends up being his "heir" because we get Lucretius's whole poem to carry on Epicurus's philosophy. Yeah, that's a little arcane.

Thoughts welcome!!

Post by "Cassius" of June 20, 2022 at 6:57 PM

[Quote from Don](#)

And I see what Clay was trying to do, I think, in calling the article after Epicurus's will. He's trying to say that even though Hermarchus is his philosophical heir, it is actually Lucretius who ends up being his "heir" because we get Lucretius's whole poem to carry on Epicurus's philosophy. Yeah, that's a little arcane.

Yep "arcane" is a good word. I think Clay is a good guy and I am well disposed toward him, but maybe becoming an Epicurean aficionado makes one "arcane" 😊 However of course I show no such tendencies myself 😊

Post by "Eikadistes" of January 1, 2023 at 8:00 PM

[Don](#) what do you make of Erik Anderson's translation of U56 that renders ΣΤΟΙΧΕΙΩΣΕΙΣ ΔΩΔΕΚΑ as "**Doctrine of the Elements (12 Books)**"? I just came across this, and after our discussion about the ΠΡΟΤΕΡΑ ΔΕΚΑΤΗ ΓΑΜΗΛΙΩΝΟΣ I am considering the possibility that the δώδεκα στοιχειώσεις refers to a collection of works on particle behavior called "**The Elements (i.e. Atoms) in 12 Books**", rather than one book called "**The Twelve Elementary Propositions**".

43. Doctrine of the Elements (12 Books)

U56

Scholion on Epicurus, Letter to Herodotus, by way of Laertius, Lives, X.44: He says below that atoms have no quality at all except shape, size, and weight, while in his twelve books of the Elements he states that color varies with the arrangement of the atoms.

<<http://epicurism.info/etexts/epicurea.html#2>>

XLIII ΣΤΟΙΧΕΙΩΣΕΙΣ ΔΩΔΕΚΑ

25

56 SCHOLIUM Epicuri ep. 1 44 τὸ δὲ χρῶμα παρὰ τὴν θέσιν τῶν ἀτόμων ἀλλάττεσθαι ἐν ταῖς δώδεκα Στοιχειώσεσι φησὶ.

Elsewhere in Book X of *Lives of Eminent Philosophers*, Diognes uses στοιχειώματα ("elementary principles", "elementary outline") and στοιχειώσιν ("first principles") to refer to "a digestible set of propositions about particles". Is στοιχειώσεις in this context referring to the "Element(al Propositions about particles)" or to "the Elements (which are particles)"? The difference could mean the difference between one work on theoretical propositions versus twelve books.

I continue to wonder, "why twelve?"

Post by "Don" of January 1, 2023 at 9:31 PM

@Nate , I had never seen that but I am definitely intrigued.

So, the form of that is:

ΣΤΟΙΧΕΙΩΣΕΙΣ ΔΩΔΕΚΑ

(or in upper & lower case, for comparison)

Στοιχειώδεις δώδεκα.

I was curious to see how the other sets of books were listed in Diogenes ' Book 10:

Περὶ φύσεως ἑπτὰ καὶ τριάκοντα.

On Nature (in) 37 (books)

Ἐπιστολικά περὶ Ἐμπεδοκλέους εἴκοσι καὶ δύο.

Letters concerning Empedocles (in) 22 (books)

Πρὸς τοὺς σοφιστὰς ἑννέα.

Against the Sophists (in) nine (books)

Πρὸς τοὺς ἰατροὺς τρία.

Against the Physicians (in) three (books)

There were others but those only used numerals. But these three here all use the number directly after the title and are translated, with no fanfare, as Title (in) X# (books).

I do notice that the form in Diogenes 10.44 is ταῖς Δώδεκα στοιχειώσεσίν with the number preceding the "elements/principles." However, in looking at them placement of other numbers in relation to the noun they're modifying, some are before, some after. The placement of Δώδεκα between the definite article and στοιχειώσεσίν leads me to interpret ταῖς Δώδεκα στοιχειώσεσίν as "in The 12 Principles/ Elements." I'm not saying I couldn't be persuaded otherwise, but that's my current understanding.

Post by “Don” of January 1, 2023 at 11:00 PM

[Quote from Cassius](#)

Diskin Clay has a discussion of these 12 in an article he wrote I believe by the title of something like "The Last Will of Epicurus."

I've looked at that paper (looking at it right now, in fact) and I'm not impressed with Clay's exposition. He writes about 10 stoicheiomata in the letter to Herodotus but there's really 12 (in relation to that title) so he adds two from the Tetrapharmakos. That just seems sloppy.

Post by "Don" of January 1, 2023 at 11:27 PM

The reference to this mystery list/book/work is only mentioned in a scholia (scribal note added to a manuscript) at Diogenes Laertius 10.44:

He (Epicurus) says below that atoms have no quality at all except shape, size, and weight. But that colour varies with the arrangement of the atoms he states in his "Twelve Rudiments" ; further, that they are not of any and every size ; at any rate no atom has ever been seen by our sense.

So, according to that, the only thing we know for sure that the "Twelve Rudiments" contains is that "1. colour varies with the arrangement of the atoms." I'm not sure of that line that comes after, but, theoretically, the "Twelve rudiments" could include "2. atoms are not of any and every size" and "3. no atom has ever been seen by our sense." But that doesn't mean there's a simple list of 12 things. So, the work could be talking about the senses, not the physics. It seems it could have been translated as "The 12 Basics" or "The 12 Fundamentals."

LSJ:

στοιχεί-ωσις , εως, ή,

A. teaching, "ἀρετῆς" Hierocl. in CA11p.445M.; elementary exposition, "τῶν ὅλων δοξῶν" Epicur.Ep.1p.4U.; αἱ δώδεκα ς., a work by Epicurus, Id.Fr.56; ή ήθική ς., work by Eudromus, Stoic.3.268; "ς. καθολικαί" Phld.Rh.1.104 S.; τὰ ἀπλᾶ πρὸς στοιχείωσίν ἐστιν ἐπιτήδεια elementary teaching, Simp. in Cat.13.29.

2. doctrine of the elements, Gal.7.678, 15.175, 19.356.

Also:

[Henry George Liddell, Robert Scott, A Greek-English Lexicon, στοιχεῖον](https://www.epicureanfriends.com/thread/2570-the-twelve-fundamentals-discussion-on-lucretius-today-podcast/)

Post by “Don” of January 2, 2023 at 8:39 AM

[Quote from Don](#)

The placement of Δώδεκα between the definite article and στοιχειώσεσί leads me to interpret ταῖς Δώδεκα στοιχειώσεσιν as "in The 12 Principles/ Elements."

I just realized that that capital Δ delta wouldn't be in the original manuscripts. They were all "capital" letters in the early scripts. So, those "twelve basics" could simply have been part of another work, say a list of 12 foundational principles within Epicurus's On Nature. Literally, all that scholiast wrote was:

ΤΟ ΔΕ ΧΡΩΜΑ ΠΑΡΑ ΤΗΝ ΘΕΣΙΝ ΤΩΝ ΑΤΟΜΩΝ ΑΛΛΑΤΤΕΣΘΑΙ ΕΝ ΤΑΙΣ ΔΩΔΕΚΑ ΣΤΟΙΧΕΙΩΣΕΣΙ
ΦΗΣΙ

followed by - and these need not be included within the 12 the way the sentences are written - "Also they are not of every size; no atom has ever been seen by our senses."

EN in this case with the dative can mean simply "within, among" so if Epicurus is talking about 12 fundamental principles or giving a summary of something that includes 12 items within one of his works, that would still be EN ΤΑΙΣ ΔΩΔΕΚΑ ΣΤΟΙΧΕΙΩΣΕΣΙ "among the 12 fundamentals."

Yeah, I'm not seeing this as "12 volumes" but rather as a summary of something with 12 items. Whether it's physics or sensation or the Canon or something else that needs to mention that color is a product of the arrangement of atoms, there's no way to tell from the context in Diogenes Laertius.

Post by “Cassius” of January 2, 2023 at 8:59 AM

[Quote from Don](#)

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And thus DeWitt and Clay set out to "reconstruct" the list by looking for the common foundational points in Lucretius and Letter to Herodotus, which seems to be a pretty reasonable approach. I am not aware of other attempts to do that but seems like a fruitful topic for future writing.

Post by “Don” of January 2, 2023 at 9:25 AM

[Quote from Cassius](#)

[Quote from Don](#)

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Yes and no. There's no way to tell what those 12 basics were (other than the 1, 2, or 3 stated there). For example:

Metrodorus in his Timocrates, whose actual words are : "Thus pleasure being conceived both as that species which consists in motion and that which is a state of rest."

Nor, again, will the wise man marry and rear a family : so Epicurus says in the Problems and in the De Natura.

It's likely that Metrodorus talked about things other than the species of pleasure in his *Timocrates*, and Epicurus wrote about more than marriage in *Problems* and in *On Nature*. We know Problems was a complete work because it's in the list that Diogenes gives.

As for the "12 basics" it could be the title of a work or a list in another work, and it could be 12 basic principles applied to the senses like color is due to the arrangement of atoms, sounds are due to the ...?, touch is due to ...?... And so on with dreams, memory, taste, etc. They could be 12 foundational ideas of physics. They could be 12... etc. There's simply no way to tell. It's a quote from a commentator citing a quote out of context from a work or excerpt.

PS: That's not to say one can't try to pull together a list of "fundamental physics principles" if one wants to, be that 9, 10, 12, 20, 40. But they should be under no illusions that these are "The Twelve Rudiments " referred to by the scholiast adding notes to the manuscripts.

Post by “Eikadistes” of January 2, 2023 at 10:28 AM

I found a few discrepancies between the various attempts at reconstruction that can be points of exploration:

1. DeWitt identifies [a] *the infinite multitude of particles* and [b] *the infinite extent of space* as two different propositions, whereas every other reconstruction merges them into one. *What gives?*

2. Clay's list of 10 (of the 12) includes the proposition that [c] *the universe always was as it is and always will be*, but this proposition of a sort of temporal symmetry is not found in DeWitt's list. *What gives?*

3. Clay combines the ideas that [d.I] *atomic motion is uniform* and [d.II] *atomic motion is of two kinds* into one proposition. DeWitt separates them into two propositions. *What gives?*

4. In his *Epistle To Herodotus*, Epicurus contrasts particles that have recoiled to a distance with particles rebounding against other particles in a matrix of entangled particles. Elsewhere, he contrasts the recoiling due to collisions to the universal "fall" due to a particle's weight. Elsewhere, he includes the *clinamen*. I am reading either 3 or 4 kinds of motions: [I] the fall due to weight, [II] the *clinamen* due to internal motion, [III] the recoil due to collisions, and [III.b], the occasion when recoiling leads to particles being entangled in matrices that lead to the foundation of compounds and complex matter. How would Epicurus have arranged all of these ideas as propositions? (*And how many?*)

5. Why do the reconstructed lists specify two types of motion in one proposition, and yet introduce a third type of motion (the *clinamen*) as a separate proposition? Would Epicurus not have identified three kinds of motion?

6. Why does Clay omit (or not recognize) the proposition about [e] uniform motion?

Post by "Don" of January 2, 2023 at 10:32 AM

@Nate raises a number of good questions above. My suggestion?

1. Ignore both Dewitt and Clay
2. Go through the letter to Herodotus oneself
3. Come up with any number of foundational principles one wants because there's no way to know what those "12 Rudiments" were referring to.

Post by "Cassius" of January 2, 2023 at 10:40 AM

[Quote from Nate](#)

1. DeWitt identifies [a] the infinite multitude of particles and [b] the infinite extent of space as two different propositions, whereas every other reconstruction merges them into one. What gives?

Perhaps that's explainable in reference to the infinite divisibility issue.

Post by “Eikadistes” of January 2, 2023 at 10:41 AM

I'd also like to submit the idea that the word "**wiggle**" is the best available English word to describe the seemingly-random movements of particles due to internal motion that lead to collisions. 😊

Recently, I've been thinking to myself that (*outside of Epicurean discussions*) I only ever invoke the word "swerve" when referring to (1) the object of "my car", and (2) "an intentional re-direct to avoid a collision". The *clinamen* is a proposition that explains why collisions occurred in the first place, so "swerve" in my vernacular is devilishly misleading.

Other candidates might include "**jerk**", "**shimmy**", "**twitch**", and "**wag**". 🤪

Post by “Eikadistes” of January 2, 2023 at 11:20 AM

[Quote from Don](#)

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Both of their lists seem to focus on the makeup of the universe and the behavior of particles. In the middle of Epicurus' discussion on particle behavior, he goes on a tangent about the eidola and sense perception. DeWitt and Clay seem to omit any discussion of sense perception or the

emission of films by compound bodies from their lists.

Every list I've come across distinguishes the principle of *things not magically appearing* from *things not magically disappearing*, but to my modern eyes (familiar with the Law of Conservation of Mass), those two look the same. They are both describing the principle of object permanency, and they can both be justified by the same observation.

I am not sure Epicurus would have seen those as separate propositions.

That being said, I am definitely sure, based on the organization of text, that Epicurus meant to distinguish the propositions that "the universe has no edge" from "particles and space are unlimited", but those seem to be saying the same thing to my modern eyes (familiar with the Cosmological Principle of an isotropic universe).

I am now wondering what criterion we might use to determine whether we are reading (*what I'll call*) a "main proposition", versus (*what I'll call*) a "sub-point" that can be derived from the main point.

Post by “Eikadistes” of January 2, 2023 at 11:38 AM

[Quote from Nate](#)

I'd also like to submit the idea that the word "**wiggle**" is the best available English word to describe the seemingly-random movements of particles due to internal motion that lead to collisions. 😊

Recently, I've been thinking to myself that (*outside of Epicurean discussions*) I only ever invoke the word "swerve" when referring to (1) the object of "my car", and (2) "an intentional re-direct to avoid a collision". The *clinamen* is a proposition that explains why collisions occurred in the first place, so "swerve" in my vernacular is devilishly misleading.

Other candidates might include "**jerk**", "**shimmy**", "**twitch**", and "**wag**". 🤪

"**Twerk**" might be even more potent. Particles "twerk".

Post by “Eikadistes” of January 2, 2023 at 11:40 AM

Though, I like to think of particles as being like a dog's tail ("**wag**"), leading to involuntary collisions due to a natural impulse that is beyond (or prior to) the conscious control of the dog. The image of someone twerking their thighs or wiggling their hips in a crowded club implies intentionality, which might be avoided when describing particles.

Post by “Don” of January 2, 2023 at 11:46 AM

[Quote from Nate](#)

"Twerk" might be even more potent. Particles "twerk".

While I like the humor inherent in "twerk" that term to me also hints at intentionality and two particles interacting with each other per Merriam Webster:

sexually suggestive dancing characterized by rapid, repeated hip thrusts and shaking of the buttocks especially while squatting

That said, I **really** like wiggle.

If suggest fidget but that may involve intentionality. Harkening back to W Pennsylvania roots, I'd suggest "rootchy." Atoms can be "rootchy." Pennsylvania Dutch word meaning to be restless in one spot, be fidgety or squirm.

Post by “Eikadistes” of January 2, 2023 at 12:21 PM

[Quote from Don](#)

[Quote from Nate](#)

That said, I **really** like wiggle.

Agreed. Until someone can demonstrate better reason, I'm translating ΠΑΡΕΓΚΛΙΣΙΣ as "[the] **wiggle**".

Post by “Don” of January 2, 2023 at 1:02 PM

[Quote from Nate](#)

Agreed. Until someone can demonstrate better reason, I'm translating ΠΑΡΕΓΚΛΙΣΙΣ as "[the] wiggle".

Don't get me wrong, I *really* like "wiggle" 😊 but...

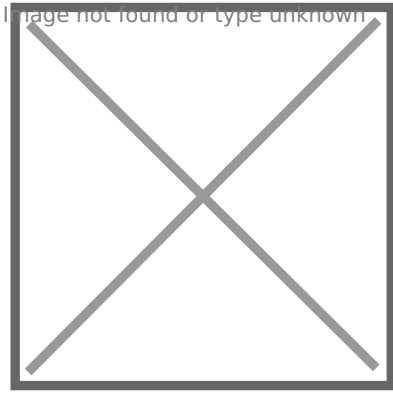
On a more serious note, do the atoms "wiggle" back and forth or do they veer off to one side or the other at random intervals? The connotation of "wiggle" is that they're vibrating. παρέγκλισις seems to imply the idea of diverging from a set path (hence, "swerve" I guess) but I fully agree with you that "swerve" has too much the flavor of intentionality. κλίσις had to do with bending, inclining, or even the turning of soldiers to the left or right (per LSJ). There was κλίνω bend, slant, lean, wander, stray. etc. The English word used for clinamen or ΠΑΡΕΓΚΛΙΣΙΣ should evoke a random, involuntary action on the part of the atom to deviate from a set direction, itself due to nothing more than the "weight" of the atom "falling" in a straight line.

Post by “Don” of January 2, 2023 at 5:42 PM

I should also add that this is all somewhat academic - fun! but academic - since atoms as we know them today are *not* the same ATOMOI about which Epicurus wrote 2,300 years ago. My take has always been that it's important to recognize that Epicurus was talking about everything in the universe being composed of matter without the need for any intervention from mystical, supernatural forces. Whether "atoms fall straight down" or not has no bearing on whether Epicurus's philosophy is applicable to living a modern life. What *does* have bearing and is directly applicable is whether we accept Epicurus's axiom that we live in a material universe which is ordered in such a way as to have no need of any divine "clockmaker" to make it all run. That, to me, is one of the primary imports of getting a handle on the Physics.

Post by “Don” of January 2, 2023 at 9:41 PM

I just came across this article:



['Providence or Atoms? Providence!' by Chris Fisher](#)

Providence or Atoms A Very Brief Defense of the Stoic Worldview by Christopher Fisher Editorial note: Marcus Aurelius famously at times questioned his own... modernstoicism.com

Providence or atoms??

Egads, I choose atoms!

Post by “Cassius” of January 2, 2023 at 9:45 PM

Chris Fisher is if I recall one of the traditional Stoics. I give him credit at least for consistency over the "modern" stoics with whom he spars.

Post by “Don” of January 2, 2023 at 11:07 PM

[Quote from Cassius](#)

Chris Fisher is if I recall one of the traditional Stoics. I give him credit at least for consistency over the "modern" stoics with whom he spars.

I can certainly understand credit for consistency, but - oh - to *believe* the universe somehow has a plan and you are an integral part of that plan strikes me as the height of hubris and delusion. I find the fact that while there is no plan, no providence, no watchmaker(s), we are still here and can still find peace and awe and friendship and pleasure in this brief time of our

existence to be an occasion for joy. The terrible happens, but it's not to test our resolve or whatever. It's just terrible! But it will pass. We grieve. We cry. But friendships and loved ones comfort. We take pleasure in memory. We find - sometimes days, sometimes years - later, pleasure still awaits us. Peace of mind returns. By some providential purpose and design?! No! Through prudent choices, or sometimes just patience to give ourselves time to see it again. I find the "I am an actor in a providential cosmic play, watch my virtuous suffering" to be repugnant. The universe does not "care" about me. There is no divine Providence mapping my fate. Thank the gods, I say, tongue firmly in cheek! I set sail on my own little boat, tossed on waves or sailing calm seas. But it's up to me to determine my course and to take responsibility. I recognize there are some for whom life *is* painful, lonely, and miserable. But that is not Fate or Providence for them to endure or to accept. I cannot help all people everywhere nor will I punish myself for that. That helps neither them nor me. But I also don't accept that they should "love Fate" and wait to see what Providence has planned for them.

Atoms or Providence indeed! I plant my feet firmly in the real world and choose atoms!

Post by "Don" of January 3, 2023 at 8:35 AM

After reading my post from last night in the light of day, I can still feel my visceral reaction to that Stoic article. However, I ask the forum: Am I being too harsh?

Epicurus certainly didn't spare his barbed words for people he disagreed with, but he also said it's better to believe in the gods than it is to accept hard determinism.

To me, though, it seems like accepting one's Fate decreed by Providence is combining *both* the gods *and* determinism and trying to sit that fence must surely be uncomfortable in the end. But if they find pleasure in "believing" that, am I to point out the precariousness of their position?

It seems to me that Epicurus also held that the best way to live was to understand how the universe actually works in reality.

Thoughts welcomed (at the risk of hijacking this thread).

Post by "Joshua" of January 3, 2023 at 8:52 AM

I didn't find it too harsh. Probably most of the people I know and love hold to some variant of that idea, and I never want to come across as callous or cruel when talking to or about them, but if we cannot speak frankly about ideas then what's it all for?

Post by “Todd” of January 3, 2023 at 9:23 AM

I had a similar reaction to that article.

Taken seriously, it's the complete abdication of personal responsibility.

How much evil/pain/suffering has been tolerated because of the belief that whatever happens is part of a providential plan that we must not oppose?

However, we should remember that most people who hold these ideas are more sinned against than sinning (so to speak). The harshest criticism should be reserved for those who knowingly use these ideas to manipulate others.

Post by “Cassius” of January 3, 2023 at 11:25 AM

I just clicked through to read the article and see what Don was reacting about. I completely agree with Don. My comment about Chris Fisher deserving credit for consistency was aimed at my appreciation for the fact that he stands with those who consistently are honest about the roots of Stoicism in the theistic world. Absent a foundation as to the nature of the world, nothing else in a philosophy is going to make sense, and at least Fisher is honest that Stoicism is grounded in a theistic worldview, just like Plato and just like Aristotle.

Of course I completely disagree with Fisher, but at least when you're honest about your worldview you aren't justifiably accused of misrepresentation about what you really believe. This isn't the time or place for a rant about "modern stoicism" but it's interesting to think about how likely it is that Aurelius and all the ancient stoics, who understand what their philosophy is based on, would probably be as upset at the "modern stoics" as they were at Epicurus - and probably more so. The ancient Stoics thought Epicurus was dead wrong, but at least they generally credited Epicurus about being honest about what he believed. And for that I can have more respect for ancient stoicism than for the modern variety that tries to avoid the issue.

The only other comment I want to make right now is about this sentence from the article:

Quote

For the Epicureans, acceptance of providence invited the gods into the lives of humans, and this they believed was a primary source of psychological distress.

This kind of formulation is bad enough coming from a stoic, but it's even more irritating to me because it probably is an accurate reflection of much modern writing about Epicurus - even from those on "our side." Yes, providence is a primary source of "psychological distress." But it's much more than that, and this is far downstream of the main issue.

The whole providence argument is just *false*, and that's the starting point of the analysis. If providence were *true* even though painful, then it would be easy to reconcile it with Epicurean philosophy, because we often choose pain in order to avoid worse pain or obtain greater pleasure. The problem with "providence" is not that it is painful, but that because it is false it has no persuasive claim to be the foundation of the "best" life. The reason Epicurean philosophy is convinced of this conclusion is rooted in the physics and epistemology, not because Epicurus was fixated on avoiding "psychological distress" or any other kind of pain as an end in itself.

That's why I think all of these various positions - the Fisher position, the modern Stoic position, and even some allegedly "friendly-to-Epicurus" positioning - is so damaging. If Epicureans were convinced that providence were true, there would be no more enthusiastic providentialists than Epicureans. It's because Epicurus had a theory of knowledge under which it's possible to be confident of what is "true" and what is "false" in important issues of life like this that Epicurus concluded that neither providence nor idealism nor anything else can supersede the faculty of pleasure that Nature gave us as the guide of life.

Post by "Cassius" of January 3, 2023 at 4:18 PM

Did you guys read Donald Robertson's reply? I will save you the effort as this is the conclusion:

Quote from Donald Robertson

Overall, I would say that the literature of ancient Stoicism suggests that Marcus Aurelius and perhaps also Epictetus believed that agnosticism or even atheism may have been consistent with the Stoic way of life. What I haven't attempted to do here is to argue at length for the philosophical consistency of an agnostic (or atheistic) form of

Stoicism. However, in this regard, I would begin by pointing to the argument that the central principle of Stoicism, that the only true good is wisdom (the cardinal human virtue or excellence), acceptance of which arguably does not require belief in God, and from which other Stoic principles may derive without the need for belief in God as an additional premise.

I see this as totally and transparently unsatisfactory. Why is wisdom a good?

And he doesn't even see the need to argue for philosophical consistency?

Post by “Cassius” of January 3, 2023 at 4:26 PM

While we are talking about this article I have another recurring gripe to mention and to combine with a praise:

Quote

The chasm between the providentially ordered cosmos of the Stoics and the random atomic universe of the Epicureans was deep and wide, and it could not be bridged.

This gives me the opportunity to plug one of my favorite articles, A.A. Long's "Chance and Natural Law in Epicureanism." I never like to use the word "random" and I don't think emphasis on that concept is consistent with Epicurean views of the universe. Better words would include "unordered" or anything that conveys the lack of central control, while "random" carries connotations that go beyond that and imply to many ears that some force of randomness (sort of like Fortune as a goddess). As Long argues in detail, most events in the universe operate mechanistically, and the swerve/wiggle/whatever does not 'break through' to our level of perception except in relatively rare instances (such as "free will" in higher animals. The great majority of things, and the reason science allows us to make repeatable observations, operate purely mechanistically and not subject to "random" variation.

I highly recommend the Long article for his full argument.

[Link](#)

*Chance and natural law in Epicureanism*¹

A. A. LONG

When Epicurus discharged the gods from running the world he gave new fuel to a controversy which had been raging off and on for the past hundred years and which was to continue, at least as fiercely, into the Christian era. In preferring atoms and void to gods as ultimate causes of all natural phenomena, Epicurus knew perfectly well that he was entering an arena in which Plato and Aristotle had already done battle against the mechanistic explanations of earlier thinkers.² How could a purely mechanical combination of atoms moving in empty space account for the regular movements of the heavens and the orderly structure of living things? Plato and Aristotle had inferred divine causation and inherent purposiveness in the world or goal-directed processes from the evidence of such regularities, and within Epicurus' own lifetime the Stoics took up the same fundamental position as the Academy and the

¹ This is a slightly expanded version of a paper read to two meetings in 1974, the Scottish Classical Association and the Southern Association for Ancient Philoso-

Post by “Eikadistes” of January 4, 2023 at 12:15 AM

[Quote from Don](#)

@Nate raises a number of good questions above. My suggestion?

1. Come up with any number of foundational principles one wants because there's no way to know what those "12 Rudiments" were referring to.

I did just that! I organized the major points I believe he proposes in his *Epistle To Herodotus* (38-44): “These brief sayings, if all these point are borne in mind afford a **sufficient outline** for our understanding of the nature of existing things.” (45.1). I identify each proposition according to whether or not it is textually followed by a counter-example.

Epicurus' **Synopsis On Physics** (to *Herodotus*):

"Indeed it is necessary to go back on the main principles, and constantly to fix in one's memory enough to give one the most essential comprehension of the truth." (EH 36.1-2)

"I who urge upon others the constant occupation in the investigation of nature, and find my own peace chiefly in a life so occupied, have composed for you another **epitome** on these lines, summing up the first principles of the whole doctrine." (EH. 37.4-5)

- - **1. Things don't just appear.** (EH 38.10-11; DRN I 150-174)
 - **2. Things don't just disappear.** (EH 39.1-2; DRN I 215-224, 238)
 - **3. It's always been this way.** (EH 39.2-6, 44.6-7; DRN II 297-308, V 362-364)
 - **4. It's all just things in space.** (EH 39.7-40.6; DRN I 419-439, V 352-362)
 - **5. All things are made of particles.** (EH 40.7-41.5; DRN I 483-503)
 - **6. Everything extends infinitely.** (EH 41.6-10; DRN I 959-984)
 - **7. Particles and space are unlimited.** (EH 42.1-42.5; DRN I 985-1021, II 339-40, 523-531)
 - **8. Particles have nearly unlimited shapes.** (EH 42.6-42.12; DRN II 341-381)
 - **9. Particles move constantly, even when entangled.** (EH 43.1-44.7; DRN II 309-333)

"These brief sayings, if all these point are borne in mind afford a sufficient outline for our understanding of the nature of existing things." (EH 45.1)

- - **There are an infinite number of worlds.** (EH 45.3-9)
 - **Everything radiates tiny, sensible particles.** (EH 46.1-47.2)
 - **Particles are unsurpassably fine and fast.** (EH 47.1-4, 61.11-13)
 - **Particles flow at a continuous, instantaneous rate.** (EH 48.1-6)
 - **Particles can mix in the air and form illusions.** (EH 48.6-11)
 - **We see when particles emanate from things and hit our eyes.** (EH 49.1-50.8)
 - **"Truth" is a true opinion about sensations.** (EH 50.8-52.4)
 - **We hear when currents of particles stretch into our ears.** (EH 52.5-53.8)
 - **We smell when particles waft from things into our noses.** (EH 53.9-53.13)
 - **Particles have three qualities: shape, size, and weight.** (EH 54.1-8; DRN II 748-752)
 - **Particles have a maximum size.** (EH 55.1-8)
 - **Particles have a minimum size.** (EH 56.5-59.12)
 - **All positions are relative.** (EH 60.1-12)
 - **Particles move with equal speed when falling through the void.** (EH 61.1-10)
 - **Particles move imperceptibly, incomprehensibly fast.** (EH 46b.1-3)
 - **Particles move even when entangled in compounds.** (EH 62.1-47b.8)

“Next, referring always to the sensations and the feelings <for in this way you will obtain the most trustworthy ground of belief>, you must consider that...” (EH 63.1-2)

- ○ **The soul is made of particles.** (EH 63.2-11)
- **The soul gives the body sensation.** (EH 63.11-64.1)
- **The soul lives within the body.** (EH 64.1-10)
- **The body cannot perceive without a soul.** (EH 65.1-8)
- **The soul cannot perceive outside a body.** (EH 65.8-67.9)
- **Only void is incorporeal.** (EH 67.1-68.1)

“Now if one refers all these reasonings and remembers when was said at the outset, he will see that they are sufficiently embraced in these general formulae to enable him to work out with certainty on this basis the details of the system as well.” (EH 68.1-5)

- ○ **Properties do not exist without bodies** (EH 68.6-69.1)
- **Properties are not incorporeal.** (EH 69.1-69.3)
- **Properties define bodies.** (EH 69.3-69.11)
- **Properties of bodies can change.** (EH 70.1-71.11)
- **Time is neither a body nor a body’s property.** (EH 72.1-73.6)

- ○ **Worlds evolved from clumps of particles.** (EH 73.7-73.12)
- **Worlds are similar yet diverse in nature.** (EH 74.1-2)
- **Worlds host other kinds of plants and animals.** (EH 74.2-6)
- **Civilizations evolve over time.** (EH 75.1-2)
- **Languages evolve over time.** (EH 75.6-76.7)

- ○ **“The All” is NOT governed by a divine being.** (EH 76.8-77.5)
- **Celestial objects are just collections of fire.** (EH 77.5-12)
- **Happiness requires a clear understanding of nature.** (EH 78.1-79.1)
- **Obsessing over mythic questions does not lead to happiness.** (EH 79.1-80.3)
- **Conclusions should cohere with evidence.** (EH 80.1-80.11)
- **Confidence is knowing that you are not being dogged by a demon.** (EH 81.1-82.3)
- **Trust your feelings and sensations; apply standards of judgment.** (EH 82.4-82.10)

“Here [...] is my treatise on the chief points concerning the nature of the general principles, abridged so that my account would be easy to grasp with accuracy.” (EH 82.11-83.2)

I think any attempt at justifying which 12 points make the ΔΩΔΕΚΑ is bound to hit a limit by a lack of sources. Epicurus easily makes a dozen observations about particle behavior, *alone*, **without** counting propositions regarding the universe, its contents, its age, its size, its expansiveness, and its orientation. There could be easily two dozen.

I am still curious if Epicurus proposed 12 because the 13th item on the listed was vastly less significant than the first 12, or, if, like the 40 ΔΟΞΑΙ, the 12 was a changing list based on the perceived needs of his students.

Post by “Don” of January 4, 2023 at 7:45 AM

Good work, @Nate . That's a good summary list. I started doing this a while back and never went back to finish. Thanks for taking the bull by the horns!

A question and an observation:

Are you positing a difference between these two?

[Quote from Nate](#)

Everything radiates tiny, sensible particles. (EH 46.1-47.2)

Particles flow from things constantly. (EH 48.1-6)

Those seem to be the same. I didn't realize that section on images/eidolon was so long.

I'm still curious (and a curiosity likely never assuaged) as to what the 12 basics referred to: physics, sensations, etc. We have nothing other than those words εν ταις δωδεκα στοιχείωματα.

[Quote from Nate](#)

the 40 ΔΟΞΑΙ,

I'm still not convinced that there are actually 40 [Principal Doctrines](#). With the text initially being in prose form, I think some of those 40 split up thoughts needlessly, creating arcane sounding principles where it's better understood in the context of a paragraph. There was 12 something referred to in the text, but I don't remember ever reading an ancient source referring specifically to 40 Doctrines.

Another good task for someone would be to reestablish the PDs in textual form and not a list.

Post by “Cassius” of January 4, 2023 at 7:45 AM

[Quote from Nate](#)

I am still curious if Epicurus proposed 12 because the 13th item on the listed was vastly less significant than the first 12, or, if, like the 40 ΔΟΞΑΙ, the 12 was a changing list based on the perceived needs of his students.

Yes, why Twelve, of all numbers?

Post by “Cassius” of January 4, 2023 at 7:46 AM

And why twelve fundamentals of physics (if that is the correct classification), but not a numbered list of anything else?

Post by “Cassius” of January 4, 2023 at 7:49 AM

Just FWIW I see that the Long article I cited is the source for this comment that I remembered about the comparison of DeWitt's and Clay's list.

³⁰ An earlier, less careful attempt to identify the στοιχειώσεις was made by De Witt (pp. 156 f.). Clay (p. 271) finds it 'odd' that there is no mention among these of the 'swerve' of atoms.

77

As Diskin Clay has recently shown (1973a), Epicurus found it a useful educational device to reduce his philosophy to a number of elementary propositions or axioms (στοιχειώσεις). A scholium to chapter 44 of the *Letter to Herodotus*, which summarises the basis of Epicurean physics, refers to Epicurus' twelve στοιχειώσεις, and Clay has identified these with ten propositions from the *Letter* (38.8-44.1, 54.3-6), which also recur in Lucretius, and the first two *Kuriai Doxai*.³⁰ Clay's list includes a set of what we may call natural laws or necessary truths, conspicuous among which are the first: 'nothing comes into being out of nothing' and the second: 'nothing is reduced to nothing'. Two fundamental concepts which are stated or implied in this list are 'limit' and 'unlimited'. The universe is unlimited, for it contains an infinite number of bodies (atoms) and infinite void. There is an infinite number of atoms with similar shapes, but the variety of atomic shapes is not infinite, though too large to be conceived of (ἀπερίληπτα).

The validity of these general statements is established largely by reference to phenomena, and their purpose is to provide the foundations for a strictly mechanistic explanation of the world. By postulating an infinite number of atoms with enormously varied shapes, Epicurus was influenced by the need to account for the variety of things we experience (*Eb. Hdt.* 42). The limit on the number of atomic shades was also

Post by “Eikadistes” of January 4, 2023 at 8:08 AM

[Quote from Don](#)

A question and an observation:

Are you positing a difference between these two?

[Quote from Nate](#)

Everything radiates tiny, sensible particles. (EH 46.1-47.2)

Particles flow from things constantly. (EH 48.1-6)

Yeah, I chose to distinguish the proposition that particles radiate from the further specification that the manner in which they radiate is constant. Though, I see your point. I frankly hesitate to distinguish the first two propositions, that the existing things "cannot be created from nothing" and "cannot be destroyed into nothing" as the same thing demonstrating object permanency. I can see that same debate regarding the "multitude of particles and void", which could be separated into two propositions. Being biased with knowledge of the concept of spacetime, I feel the same way about "the universe being boundless" and "its contents being infinite", which both seem to express "spatial infinity" to me.

Post by “Don” of January 4, 2023 at 8:25 AM

I'm also not sure we should imbue "12" with some sort of significance lest we go down a Pythagorean path. My personal take was that that was just the number of basic principles of... Something (perception, sensation, physics, etc?) that Epicurus felt was sufficient in a summary to explain what he needed.

Post by “Don” of January 4, 2023 at 8:41 AM

[Quote from Cassius](#)

And why twelve fundamentals of physics (if that is the correct classification), but not a numbered list of anything else?

See, that's the issue. We have no way of knowing if it was a list of 12 physics propositions or 12 ways of sensing things or 12 basic particles or 12 fill in the blank. All the text does is quote 1 to 3 sentences (the text is unclear) that were somewhere "in the 12 basics". Whether that or those were actually "in that list" or whether they were contained in an explanation of the 12 or in the introduction to the list, we have *no way* of knowing.

PS

Quote from Cassius

not a numbered list of anything else?

We have no way of knowing how many lists, summaries, etc that Epicurus wrote and shared. We've lost too much.

Post by “Cassius” of January 4, 2023 at 11:42 AM

[Quote from Don](#)

After reading my post from last night in the light of day, I can still feel my visceral reaction to that Stoic article. However, I ask the forum: Am I being too harsh?

Epicurus certainly didn't spare his barbed words for people he disagreed with, but he also said it's better to believe in the gods than it is to accept hard determinism.

To me, though, it seems like accepting one's Fate decreed by Providence is combining **both** the gods **and** determinism and trying to sit that fence must surely be uncomfortable in the end. But if they find pleasure in "believing" that, am I to point out the precariousness of their position?

It seems to me that Epicurus also held that the best way to live was to understand how the universe actually works in reality.

Thoughts welcomed (at the risk of hijacking this thread).

This thread is becoming a catchall for everything it seems, but I realized this morning I had another comment on this post from Don.

This kind of reaction to supernatural religion is exactly the kind of reaction I think Epicurus had, and I suspect that Epicurus thought that **this** was actually his main "calling in life" for his philosophy. Yes the goal of pleasure and the mechanics of reaching it are very important, but they come **after** one has first rejected the supernatural / providential / "idealist" nature of the universe. And one does that - one gains confidence in rejecting the supernatural / providential / idealist viewpoint - through the epistemology and the physics.

That's the focus of Lucretius' manner of presentation to Memmius, that's the focus of what appears to be the **first** letter of Epicurus (to Herodotus), and I strongly suspect it was the focus the school as a whole. In addition, I think that also needs to be "our" focus on

Epicureanfriends as well. We don't need to lessen the importance of pleasure-seeking or anxiety-avoidance, but we need to keep them in their place, which is the path we take *after* we first establish the shared groundwork of a natural universe.

So to repeat the point of posting this, I think we begin to see our way to having an impact in real people's lives the more we see reactions like Don had to the Fisher article. The "modern atheists" attack religion and then stop, or else they veer off into "humanism" / idealism. Epicurus was pointing to a different path, and that's the one I think we can accomplish a lot by working to reconstruct and support with modern presentations.

Post by “Cassius” of January 4, 2023 at 2:01 PM

Oh one more thing. By stopping at "there is no supernatural god", you really set yourself up for disappointment, disillusion, and despair when the hard times inevitably come.

More so than saying "there is not..." you need to be able to say with confidence what "there *is*"

Post by “Eikadistes” of January 4, 2023 at 6:54 PM

[Quote from Don](#)

[Quote from Nate](#)

Agreed. Until someone can demonstrate better reason, I'm translating ΠΑΡΕΓΚΛΙΣΙΣ as "[the] wiggle".

Don't get me wrong, I *really* like "wiggle" 😊 but...

On a more serious note, do the atoms "wiggle" back and forth or do they veer off to one side or the other at random intervals? The connotation of "wiggle" is that they're vibrating. παρέγκλισις seems to imply the idea of diverging from a set path (hence, "swerve" I guess) but I fully agree with you that "swerve" has too much the flavor of intentionality. κλίσις had to do with bending, inclining, or even the turning of soldiers to the left or right (per LSJ). There was κλίνω bend, slant, lean, wander, stray. etc. The

English word used for clinamen or ΠΑΡΕΓΚΛΙΣΙΣ should evoke a random, involuntary action on the part of the atom to deviate from a set direction, itself due to nothing more than the "weight" of the atom "falling" in a straight line.

I'm trying out the idea that particles are "**twitchy**" and "**tweak**" when they move. I'm finding that "twerks", "wiggles" and "wags" imply a patterned rhythm that does not reflect the spontaneous, irregular quality of the ΠΑΡΕΓΚΛΙΣΙΣ.

Post by “Don” of January 4, 2023 at 8:11 PM

[Quote from Nate](#)

I'm trying out the idea that particles are "twitchy" and "tweak" when they move. I'm finding that "twerks", "wiggles" and "wags" imply a patterned rhythm that does not reflect the spontaneous, irregular quality of the ΠΑΡΕΓΚΛΙΣΙΣ.

Well, I applaud you for making the observation of intentionally with "swerve." So, kudos there. Wiggle is the most fun, but still misleading. 😞

Some random synonyms:

veer

drift

pivot

turn

.... Sigh.... Harder than it sounds like it would be!

PS: Do we know if the clinamen is supposed to be a fast swerving all of a sudden or a drifting off to one side or the other?

Post by “Godfrey” of January 5, 2023 at 12:07 AM

"Drift" is intriguing... with this caveat:

Quote from Don

PS: Do we know if the clinamen is supposed to be a fast swerving all of a sudden or a drifting off to one side or the other?

Post by “Don” of January 5, 2023 at 7:13 AM

Quote from Lucretius, Book 2

The atoms, as their own weight bears them down
Plumb through the void, at scarce determined times,
In scarce determined places, from their course
Decline a little- call it, so to speak,
Mere changed trend. For were it not their wont
Thuswise to swerve, down would they fall, each one,
Like drops of rain, through the unbottomed void;
And then collisions ne'er could be nor blows
Among the primal elements; and thus
Nature would never have created aught.

...

The atoms must a little swerve at times-
But only the least, lest we should seem to feign
Motions oblique, and fact refute us there.
For this we see forthwith is manifest:
Whatever the weight, it can't obliquely go,
Down on its headlong journey from above,

At least so far as thou canst mark; but who
Is there can mark by sense that naught can swerve
At all aside from off its road's straight line?
Again, if ev'r all motions are co-linked,
And from the old ever arise the new
In fixed order, and primordial seeds
Produce not by their swerving some new start
Of motion to sunder the covenants of fate,
That cause succeed not cause from everlasting,
Whence this free will for creatures o'er the lands,
Whence is it wrested from the fates,- this will
Whereby we step right forward where desire
Leads each man on, whereby the same we swerve
In motions, not as at some fixed time,
Nor at some fixed line of space, but where
The mind itself has urged? For out of doubt
In these affairs 'tis each man's will itself
That gives the start, and hence throughout our limbs
Incipient motions are diffused.
Display More

Post by “Godfrey” of January 5, 2023 at 12:23 PM

From a modern perspective:

[Swerve vs Drift - What's the difference?](#)

As verbs the difference between swerve and drift is that swerve is to stray; to wander; to rove while drift is...

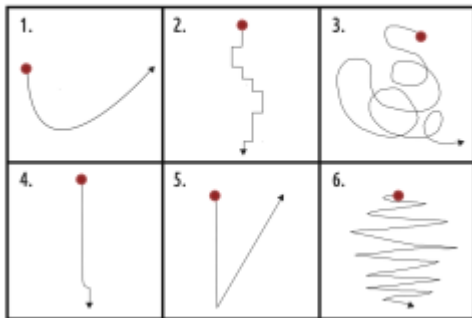
wikidiff.com

[Drift vs. Swerve | the difference - CompareWords](#)

Post by “Eikadistes” of January 5, 2023 at 1:26 PM

Just a quick visual experiment as a point of reference.

The ΠΑΡΕΓΚΛΙΣΙΣ looks like...



Post by “Don” of January 5, 2023 at 3:31 PM

I'm saying 4 with the caveat that that motion can happen more than once over time but not as often as 2.

Post by “Cassius” of January 5, 2023 at 3:34 PM

I agree that the contrast shown by the different options is a useful way to think of the big issue, which appears to be at least in part that the question is how "much" of a deviation occurs.

Post by “Don” of January 5, 2023 at 4:34 PM

And my take is that this was the primordial situation with all atoms falling in parallel "straight down." However, once a couple collisions happened, the order was interrupted by collisions and conglomerations in parts of the cosmos. In other parts, the parallel falling continued. And so on.

Post by “Todd” of January 5, 2023 at 4:38 PM

[Quote from Cassius](#)

...the big issue, which appears to be at least in part that the question is how "much" of a deviation occurs.

Is this really a big issue?

Post by “Joshua” of January 5, 2023 at 5:24 PM

Quote from Don

And my take is that this was the primordial situation with all atoms falling in parallel "straight down." However, once a couple collisions happened, the order was interrupted by collisions and conglomerations in parts of the cosmos. In other parts, the parallel falling continued. And so on.

I've never been able to reconcile a 'primordial' downward movement with the concurrent claim that there was no beginning.

Post by “Cassius” of January 5, 2023 at 5:36 PM

[Quote from Joshua](#)

I've never been able to reconcile a 'primordial' downward movement with the concurrent claim that there was no beginning

Isn't it even harder to accept that there **was** a beginning?

Post by “Todd” of January 5, 2023 at 5:37 PM

I think primordial is the wrong word. (I'm now waiting for Don or Nate to go find where Epicurus used exactly that word 😊)

I think the image of atoms falling in parallel was an imaginary construction Epicurus used as evidence that there must be a swerve. I don't think it was intended to describe an actually existing state of the universe.

If there were no swerve, there would never be anything other than isolated atoms falling in parallel. Nothing more complex than individual atoms would ever come into existence. But other things do exist. Therefore...

Post by “Don” of January 5, 2023 at 5:37 PM

[Quote from Todd](#)

[Quote from Cassius](#)

...the big issue, which appears to be at least in part that the question is how "much" of a deviation occurs.

Is this really a big issue?

I would agree that these are [inside baseball](#) discussions. Fun, but we're definitely in the weeds on this thread. 😊

Post by “Cassius” of January 5, 2023 at 5:40 PM

[Quote from Todd](#)

Is this really a big issue?

Yeah I am still channeling the AA Long article and the Sedley article on the swerve deriving from free will rather than physics.

1. Anything more than the slightest deviation would play into the hands of those saying that an unstable universe needs a superintending God, and
2. Is anything more than the swerve of a single atom at a single moment in time necessary to start the chain of collisions needed to bring everything into existence?

Post by “Eikadistes” of January 5, 2023 at 5:41 PM

[Quote from Joshua](#)

Quote from Don

And my take is that this was the primordial situation with all atoms falling in parallel "straight down." However, once a couple collisions happened, the order was interrupted by collisions and conglomerations in parts of the cosmos. In other parts, the parallel falling continued. And so on.

I've never been able to reconcile a 'primordial' downward movement with the concurrent claim that there was no beginning.

I have been considering this point as well.

Epicurus' third elementary principle proposes that "the universe is as *it* always *was* and always *will be*". If the distribution of matter in the universe has always been the same, it seems to follow that there would not have been a period where most particles were moving in a consistent, parallel stream in the same, perfectly "downward" movement. At all points in time, there was never an absolute "up" and "down", and at all points time, particles were falling against each other, so a deviation from perfectly straight paths would not be necessary, because linear motion can describe this.

Post by “Joshua” of January 5, 2023 at 5:44 PM

Perhaps primordial is not so much a time, as it is a state or condition. An uncoupled atom, a "first beginning" or "seed of things" in Lucretian terms, is the atom in its primordial state. It 'falls' along an inertial path in whatever direction, swerves unpredictably, 'falls' again, couples with another atom, joins other couplings to form a body, dissolves, and falls away in an endless cycle of accretion and dissolution.

Post by “Eikadistes” of January 5, 2023 at 8:18 PM

[Quote from Todd](#)

I think primordial is the wrong word. (I'm now waiting for Don or Nate to go find where Epicurus used exactly that word 😊)

I think the image of atoms falling in parallel was an imaginary construction Epicurus used as evidence that there must be a swerve. I don't think it was intended to describe an actually existing state of the universe.

If there were no swerve, there would never be anything other than isolated atoms falling in parallel. Nothing more complex than individual atoms would ever come into existence. But other things do exist. Therefore...

It's time:

1. That a "Swerve" Is Necessary For Nature To Create:

...corpora cum deorsum rectum per inane feruntur

ponderibus propriis, incerto tempore ferme

incertisque locis spatio depellere paulum,

tantum quod momen mutatum dicere possis.

quod nisi declinare solerent, omnia deorsum

imbris uti guttae caderent per inane profundum

nec foret offensus natus nec plaga creata

principiis; ita nihil umquam natura creasset. (DRN II 217-225)

“...when first-bodies are being carried downwards straight through the void by their own weight, at times quite undetermined and at undetermined spots they **push** a little from their path: yet only just so much as you could call a change of trend. But if they were not used to **swerve**, all things would fall downwards through the deep void like drops of rain, nor could collision come to be, nor a blow brought to pass for the first-beginnings: nature would never have brought aught to being.” (DRN II 217-225; trans. Bailey)

“...when the atoms are being drawn downward through the void by their property of weight, at absolutely unpredictable times and places they **deflect** slightly from their straight course, to a degree that could be described as no more than a shift of movement. If they were not apt to **swerve**, all would fall downward through the unfathomable void like drops of rain; no collisions between primary elements would occur, and no blows would be effected, with the result that nature would never have created anything. (DRN II 217-225; trans. Smith)

“Though atoms fall straight downward through the void | by their own weight, yet at uncertain times | and at uncertain points, they **swerve** a bit— | enough that one may say they changed direction. | And if they did not **swerve**, they all would fall | downward like raindrops through the boundless void; | no clashes would occur, no blows befall | the atoms; nature would never have made a thing.” (DRN II 217-225; trans. Copley)

2. That a "Swerve" Is Required To Refute a Deterministic Universe:

quare etiam atque etiam paulum inclinare necessest

corpora; nec plus quam minimum, ne fingere motus

nec plus quam minimum, ne fingere motus

obliquos videamur et id res vera refutet.

namque hoc in promptu manifestumque esse videmus,

pondera, quantum in <se> est, non posse obliqua meare,

ex supero cum praecipitant, quod cernere possis;

sed nihil omnino <recta> regione viai

declinare quis est qui possit cernere sese?

Denique si semper motu conectitur omnis

et vetere exoritur <motus> novus ordine certo

nec declinando faciunt primordia motus

principium quoddam, quod fati foedera rumpat,

ex infinito ne causam causa sequatur,

libera per terras unde haec animantibus exstat... (DRN II 244-256)

“Wherefore, again and again, it must needs be that the first-bodies **swerve** a little; yet not more than the very least, lest we seem to be imagining a sideways movement, and the truth refute it. For this we see plain and evident, that bodies, as far as in them lies, cannot travel sideways, since they fall headlong from above, as far as you can descry. But that nothing at all **swerves** from the straight direction of its path, what sense is there which can descry? Once again, if every motion is always linked on, and the new always arises from the old in order determined, nor by **swerving** do the first-beginnings make a certain start of movement to break through the decrees of fate, so that cause may not follow cause from infinite time; whence comes this free will for living things all over the earth...” (DRN II 245-257; trans. Bailey)

“So I insist that the atoms must **swerve** slightly, but only to an infinitesimal degree, or we shall give the impression that we are imagining oblique movements—a hypothesis that would be contradicted by the facts. For it is a plain and manifest matter of observation that objects with weight, fell to themselves, cannot travel an oblique course when they plunge from above—at least not perceptibly; but who could possibly perceive that they do not **swerve** at all from their vertical path? Moreover, if all movements are invariably interlinked, if new movement arises from the old in unalterable succession, if there is no atomic **swerve** to initiate movement that can annul the decrees of destiny and prevent the existence of an endless chain of causation, what is the source of this free will possessed by living creatures all over the earth?” (DRN II 245-257; trans. Smith)

“And so again and again atoms must **swerve** | a little—the tiniest bit: we must not picture | crosswise movement, for facts would prove us wrong. | For this, we see, is obvious and clear: weight of itself can never move transversely; | it drops from above straight down, as we observe. | But that no atom ever **swerves** at all | from the perpendicular, who could sense and see? | To continue: if all movement is connected, | (new movement coming from old in strict descent) | and atoms never, by **swerving**, make a start on movement that would break the bonds of fate | and the endless chain of cause succeeding cause, | whence comes the freedom for us who live on earth?” (DRN II 245-257; trans. Copley)

3. That Freedom of Mind Is Facilitated By "the Tiny Swerve":

...sed ne res ipsa necessum

intestinum habeat cunctis in rebus agendis

et devicta quasi cogatur ferre patique,

id facit exiguum clinamen principiorum

nec regione loci certa nec tempore certo. (DRN II 289–293)

“But that the very mind feels not some necessity within in doing all things, and is not constrained like a conquered thing to bear and suffer, this is brought about by the tiny **swerve** of the first-beginnings in no determined direction of place and at no determined time.” (DRN II 289–293; trans. Bailey)

“But the factor that saves the mind itself from being governed in all its actions by an internal necessity, and from being constrained to submit passively to its domination, is the minute **swerve** of the atoms at unpredictable places and times.” (DRN II 289–293; trans. Smith)

“...all things are not caused by blows—external force; no internal power | controls the mind in every move it makes, | a helpless captive bound by what must be: | this comes from the tiny **swerving** of the atoms | at no fixed place and no fixed point in time.” (DRN II 289–293; trans. Copley)

Post by “Eikadistes” of January 5, 2023 at 8:54 PM

I am not sure that Lucretius' propositions (1.) and (3.) are supported by Epicurus' writing. (1.) His first point seems to imply that there was a previous time when all particles had the same orientation (the same "down"), prior to those particles becoming entangled to generate compound things. This seems to contradict the propositions of *the temporal consistency of the universe* (EH 39.2-6, 44.6-7) and *the relativity of individual particles' orientations* (EH 60.1-12).

(3.) Epicurus' existing writing are filled with discussions about *choice*, *comparison*, and *contemplation*, but they do not seem to require the ΠΑΡΕΓΚΛΙΣΙΣ to explain. In the same way that sentience is proposed to originate from complex arrangements of insentient matter, it would be consistent to suppose that the capacity to make decisions originates from complex arrangements of choiceless matter. Given doubts on (1.), I am more prone to doubt (3.).

Post by “Little Rocker” of January 5, 2023 at 11:07 PM

I admit to having on occasion approached the question of providence with kid gloves in the past, chiefly because many of the people I care about accept providence. Hell, they even accept petitionary prayer. But the denial of providence and the Epicurean approach to suffering is perhaps the thing that **most** draws me to Epicureanism and the thing I think the Modern

Stoics are most disingenuous about (the second being 'preferred indifferents'). So while I applaud the authors who try to address the providential elephant in the room, my experience is that they: 1) lapse into Epicureanism without knowing it (see, for example, the Irvine passage attached, which is pretty much textbook Epicureanism); 2) say something like 'let's agree to disagree (see Pigliucci); or 3) just redefine providence to mean something it's not (like accepting that the past is fixed).

On the other point: I suppose the thing that intrigues me about the '[insert agreed upon swervish term here]' is that these are, in my admittedly limited understanding, two places where stochastic processes are most commonly invoked at high levels of science--in particle physics and in the shocking amount of spontaneous activity happening in the brain.

Post by “Don” of January 5, 2023 at 11:23 PM

[Quote from Little Rocker](#)

I admit to having on occasion approached the question of providence with kid gloves in the past, chiefly because many of the people I care about accept providence. Hell, they even accept petitionary prayer.

I hear you. I would never (probably) share these sentiments with certain family members, but it does feel pleasurable to me to vent them here 😊

[Quote from Little Rocker](#)

1) lapse into Epicureanism without knowing it (see, for example, the Irvine passage attached, which is pretty much textbook Epicureanism)

I certainly see where you're going with that. Some modern Stoics I've read sound very Epicurean in their attempt to contort "their" philosophy into something palatable.

Post by “Eikadistes” of January 5, 2023 at 11:24 PM

Then again, with respect to (1.), Epicurus **does** discuss the creation of worlds (**EH 45.5**), so perhaps Lucretius is merely referring to the creation of a world-system, and not the universe as

a whole. (*I am imagining – as a reasonable, modern analog – a contracting, pre-solar nebula that flattens into a protoplanetary disc that then rotates around a hot protostar until the rotating matter accretes into planetesimals that eventually develop into different worlds.*) I might have been getting stuck on the idea that "nature creating" refers to a *universal* beginning rather than a *local* beginning.

"...such a world may come into being both inside another world and in an interworld, by which we mean a space between worlds; it will be in a place with much void [...] **this occurs when seeds of the right kind have rushed in** [...] little by little **they make junctions and articulations, and cause changes of position** to another place [...] **and produce irrigations of the appropriate matter until the period of completion and stability**, which lasts as long as the underlying foundations are capable of receiving additions." (*EP 89.2-90.1*). So Epicurus *does* identify a preceding stage of instability, *per kosmos*.

Therein, particles moved from a stage of "falling raindrops" (*DRN II 223*) "first", "and gradually grew in size by the aggregations and whirlings of bodies of minute parts" (*EP 90.8-91.1*). At some point "stability" is reached. I am comfortable with "creation" when taken as the development of a system of celestial bodies ... however, I still don't see the need for the "swerve" to create this arrangement. Perhaps one particle re-bounded from an "interworld" and started a cascade amid the cloud of "falling raindrops" (rather than one drop in the cloud "swerving" into another).

Overall, I question whether or not the "swerve" served any other function for Epicurus besides providing a rational counter-point to Democritus' determinism. Epicurus explained how world-systems develop to Herodotus and Pythokles without discussing the "swerve", and he explained choice and contemplation to Menoikeus without referring to an atomic "swerve". I am speculating that the *declinando* or *clinamen* in *De Rerum Natura* – described as a world-building and thought-forming agent – was more of a poetic embellishment by Lucretius than a reflection of Epicurus.

Post by “Cassius” of January 6, 2023 at 6:14 AM

Nate my reading of your last two comments is consistent with the views taken in that A. A. Long article, and by Sedley as well in his article on Determinism, and I am pretty strongly convinced of the correctness of that position. I think it's especially important to always be thinking about the implications of the eternal universe issue, as you are doing, and to never allow implicitly or explicitly for a time "before" in our thinking about the universe as a whole. Whatever is happening now has been happening, or at least was possible to happen, eternally into the past, and any kind of "first" collision, even or especially a single one, did not bring the universe as a whole into being from something different that existed beforehand.

Post by “Don” of January 6, 2023 at 12:24 PM

Sedley, in *Lucretius and the Transformation of Greek Wisdom*, posits that the swerve doesn't show up in the letter to Herodotus because the letter only covers *On Nature* books 1-10. He further conjectures that the swerve showed up in book 25 or books in that area, but there's no surviving fragments of book 25 that contain mention of it.

I doubt Lucretius would have included the swerve without justification from a source text. That said, it certainly doesn't seem pivotal or foundation to Epicurus's philosophy. It could be part of a specific argument against Democritus and his physical determinism but may have become overblown with later commentators and critics.

Post by “Don” of January 6, 2023 at 12:42 PM

Book 25 (very fragmentary):

[DCLP/Trismegistos 59749 = LDAB 853](#)

Also

[Synopsis of Epicurus' “On Nature”, Book 25: On Moral Development | Society of Friends of Epicurus](#)

Post by “Cassius” of January 6, 2023 at 12:51 PM

And related is David Sedley's commentary on the same subject in ["Epicurus' Refutation of Determinism"](#)

Post by “Bryan” of March 28, 2024 at 6:28 PM

[Quote from Twentier](#)

what do you make of Erik Anderson's translation of U56 that renders ΣΤΟΙΧΕΙΩΣΕΙΣ ΔΩΔΕΚΑ as "Doctrine of the Elements (12 Books)"?

Thank you for asking this question!

[Quote from Don](#)

Yeah, I'm not seeing this as "12 volumes" but rather as a summary of something with 12 items.

I agree. Thank you for your comments here Don. my guess is one book about 12 principles, but I have no further evidence beyond what you have already provided.

[Quote from Don](#)

There's no way to tell what those 12 basics were (other than the 1, 2, or 3 stated there

Sad but true. Still, I cannot help but appreciate the efforts of those who try to make a list (because I am not so bold).