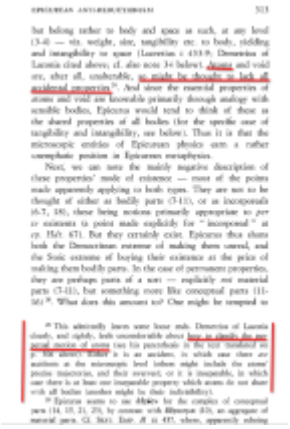
# Is Motion One Of The Three Eternal Properties of Atoms? I.E. Are The Three Properties Shape, Size, and MOTION?

### Post by “Cassius” of March 26, 2026 at 10:20 AM

This topic was also discussed in a recent zoom meeting. The answer appears debatable, and I see that Sedley's article "Epicurean Anti-Reductionism" has this to say (see especially footnote 29):



Here is the translation from Demetrius Lacon cited on page 306:

## Post by “Cassius” of April 12, 2026 at 2:06 PM

This topic arose in today's Zoom meeting and it needs further research and expansion. I am also going to modify the title of this thread to make the issue more clear.

I feel sure there are academic articles directly on point beyond what I've cited above.

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## Post by “Cassius” of April 12, 2026 at 2:17 PM

Ok I asked Claude to summarize David Sedley's position. Apparently the main article is not publicly available but I will include the cite below:

The key Sedley text regarding the Epicurean relationship between weight and motion turns out to be his own entry in the Routledge Encyclopedia of Philosophy (1998), where he lays this out with unusual precision. Here is what he says:

### Weight as the first of three causes of motion

There are three causes of an atom's motion. The first is its own weight, interpreted as an inherent tendency to move downwards. The second is collisions with other atoms, which can deflect an originally downward motion along any number of new rectilinear trajectories, thus generating the patterns of motion of which compounds are born. The third cause of atomic motion is the swerve, whereby an atom may shift from its rectilinear trajectory onto an adjacent one — a displacement sideways by a distance of one minimum. Routledge

So Sedley's answer is precise and structural: weight is not merely a property atoms happen to have — it is the *first cause of motion itself*. It is the explanatory ground of atomic movement before anything else enters the picture.

### Weight does not control speed

Then comes the crucial complication Sedley also states directly: atoms all move at equal speed, since in a vacuum, unlike air, there is no resistance from the medium to slow down the lighter ones more than the heavier ones. Routledge This is Sedley citing Letter to Herodotus 61. So weight is the cause of motion but plays no role whatsoever in determining how fast atoms move — all atoms move equally fast regardless of their weight or size.

### The implication

Taken together, Sedley's position gives you the clearest possible statement of why "weight" in Epicurean physics is so philosophically strange. Weight is the *source* of motion — the intrinsic directional tendency that makes atoms move at all — but it does not differentiate fall-rate, does not produce attraction between atoms, and does not operate the way ordinary physical weight does. The atom's property of weight was designed to account for motion as a whole in Epicurus' physics St-andrews — it is the answer to Aristotle's objection that Democritus had no explanation for why atoms move in the first place.

This is exactly why "motion" seems like it could substitute for "weight" — because in Sedley's reading, Epicurean weight just *is* the cause of natural motion, and the two concepts are inseparable. But Sedley himself maintains "weight" as the right term because the Greek is clearly βάρος, and because weight is the *cause* of motion, not motion itself. Substituting "motion" would collapse the distinction between the property and what the property produces — which matters for understanding how the swerve then modifies things.

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### Post by “Cassius” of April 12, 2026 at 2:19 PM

The Routledge Encyclopedia entry by David Sedley

## 4. Motion

Surprisingly, atoms never stop moving, even within a compound object, since the medium through which they move is void, which can offer them no resistance. More surprisingly, for the same reason they move at a vastly greater speed than any familiar motion through an obstructive medium such as air; even than sunlight, which is seen to spread from horizon to horizon virtually instantaneously (Lucretius II 142–64). More surprisingly still, they all move at equal speed, since in a vacuum, unlike air, there is no resistance from the medium to slow down the lighter ones more than the heavier ones (Letter to Herodotus 61). In stating all these claims, Epicurus is accepting paradoxical consequences of the hypothesis that void exists, consequences which Aristotle had drawn (Physics IV) in the belief that they were sufficiently absurd to discredit the hypothesis. Moreover, the equal speed of atoms was confirmed by another objection Aristotle thought he had found to atomism (Physics VI 2): if there is a minimal magnitude, there can be no differences of speed, because then in the time the faster object took to travel one minimum the slower one would, impossibly, have to travel less than one minimum. Epicurus welcomed this argument, along with the conclusion Aristotle thought absurd, because his theories of void and minima now offered two independent grounds for the

same conclusion, that atoms move at equal speed.

The apparent lack of fit between these findings about atoms and the variable speed of macroscopic motions is explained as follows (Letter to Herodotus 62). Even in a compound object the individual atoms are perpetually moving, but in tight and regular cyclical patterns which make the complex as a whole stable. Phenomenal differences of speed, say between two runners, represent merely the aggregate motions of the atoms in each over an observed period of time.

There are three causes of an atom's motion. The first is its own weight, interpreted as an inherent tendency to move downwards (see §8). The second is collisions with other atoms, which can deflect an originally downward motion along any number of new rectilinear trajectories, thus generating the patterns of motion of which compounds are born.

The third cause of atomic motion is the 'swerve' (*parenklisis*), whereby an atom may shift from its rectilinear trajectory onto an adjacent one – a displacement sideways by a distance of one minimum (there being no smaller distance). This happens 'at no fixed place or time', meaning that the occurrence of a swerve is causally undetermined. The theory, derided by Epicurus' opponents but now recognized as comparable in its implications to modern quantum indeterminism, looks like a drastic solution requiring a drastic problem. Two such problems are recorded (Lucretius II 216–93). First, since all atomic motion starts out as vertical and equal in speed, without a swerve no collisions would ever have started, and hence no world could have been formed. It may be doubted whether this was a sufficiently pressing problem to motivate an abandonment of universal causality: given the infinite past history of the universe,Epicurus had no need to posit a very first collision; in which case every collision could have been explained as the effect of previous ones. The second problem seems to have been the real motivation of the swerve: if all atomic motion is causally determined, free will becomes impossible (see §12).

https://www.rep.routledge.com/articles/thematic/epicureanism/v-1/sections/motion

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## Post by "Cassius" of April 12, 2026 at 2:22 PM

So the reason this topic came up today is that Patrikios brought up the question of whether atoms move because of some external force applied to them. And this directly relates to the motion of bodies such as magnets, discussed in Book 6 of Lucretius.

If I am reading this correctly, then it would not be appropriate to say that the the three eternal properties of atoms are size, shape, and motion. It is correct to say "size, shape, and weight."

However Epicurus intended "weight" to be understood as the internal cause of motion without need of any external force (which we might think of as gravity) acting on it. Thus Epicurus was holding that no external force is required to cause atoms to move, as they have moved eternally.

If someone has a better way to state that please post.

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## Post by “Joshua” of April 12, 2026 at 4:26 PM

> Quote
>
> [54] "Καὶ μὴν καὶ τὰς ἀτόμους νομιστέον μηδεμίαν ποιότητα τῶν φαινομένων προσφέρεσθαι πλὴν σχήματος καὶ βάρους καὶ μεγέθους καὶ ὅσα ἐξ ἀνάγκης σχήματος συμφυῆ ἐστι.
>
> [54] "Kai men kai tas atomous nomisteon medemian poioteta ton phainomenon prospheresthai plen schematos kai barous kai megethous kai hosa ex anagkes schematos sumphue esti.
>
> [54] "Moreover, we must hold that the atoms in fact possess none of the qualities belonging to things which come under our observation, except shape, weight, and size, and the properties necessarily conjoined with shape.
>
> -*Letter to Herodotus*, Epicurus, from Diogenes Laertius Book 10 (Perseus Project)

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## Post by “Cassius” of April 12, 2026 at 4:56 PM

Thanks Joshua. So clearly the word being used is "weight." It seems possible however that that does not end the inquiry because it's potentially not clear what is meant by weight.

Today (i gather) we are using weight as something that is attracted differentially by gravity (?)

Epicurus apparently was not using that paradigm (and would not, given that what we think of gravity would be a force outside the atom) ??

What Seldey seems to be saying is that Epicurus is using the term to mean a potential to move when space allows it, which itself is the cause of motion without interaction with anything

outside it.

Am I reading that right? If so then a straight use of "weight" in our modern context might be confusing the issue just as it is confusing to think that Epicurus meant "atom" in the same way we do.

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## Post by “Eikadistes” of April 12, 2026 at 5:53 PM

I've been wondering lately if there might be an innate correspondence between the three qualities and the atomic motions, being falling, recoiling (10.44), and swerving. Epíkouros writes to Hēródotos that the βάρους (*bárous*) "**burden**" (*so I'm translating to avoid any modern ideas*) justifies why any one particle *falls* (10.61). I don't find it being directly expressed, but I imagine that the μεγέθους (*megéthous*) "magnitude" partially determines the manner in which any two particular *rebound* off of each other, as the case when particles of different, atomic sizes collide.

I've never been conceptually satisfied with my own model of "the swerving", but I toy with the idea that the particular σχήματος (*skhēmatos*) "scheme" of a particle results in a swerve ... I personally imagine the *schemes* as being like the different shapes in Tetris and the rotating blocks skipping spaces when you turn them as being a crude example of a kind of lateral swerve.

That may be totally off, but it's also a concept for which we have the least, thorough documentation. just to note those instances, so far as I know, we've got Philódēmos' *On Signs* (36.12-13), Cicero's *On Ends of Good and Evil* (where a character dismisses the swerve as an "arbitrary fiction"), Diogénēs of Oìnóanda's inscription in refuting Dēmókritos (fr. 54, col. 3, no. 6), and Lucretius (Book II). So, anyway ... I've been thinking "Tetris" lately with regards to the unpredictable wiggle.

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## Post by “Cassius” of April 12, 2026 at 8:14 PM

Good thoughts as to the correspondence, Eikadistes. I haven't got much to go on yet but I think there's a bright line and that Epicurus would require that "weight" not imply that this particular cause of the motion of atoms is operating only because of some external force separate from matter and void. (In other words, given that the universe is infinite in size in all directiions and there's no "bottom," there's no force outside the atoms pulling them "down."

Regardless of anything else, our notion of gravity implies something giving off an attractive force at a distance. Maybe there's something in the magnetism discussion in Lucretius that could be used to explain what "weight" might mean without requiring "action at distance" (without touch being involved).

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## Post by “Eikadistes” of April 13, 2026 at 9:47 AM

I don't *love* the following description by Pseudo-Ploútarkhos, but as is translated by Goodwin, it presents "burden" (usually translated as "weight" or "mass") as "gravity:

> Quote
>
> *Those bodies acknowledge these three accidents, figure, magnitude, and gravity. Democritus acknowledged but two, magnitude and figure. Epicurus added the third, to wit, gravity; for he pronounced that it is necessary that bodies receive their motion from that impression which springs from gravity, otherwise they could not be moved*. (Book 1, Chapter 3)

I don't know if that's accurate about Dēmókritos because Pseudo-P. was writing something like 800 years or so after him, so his (whomever he was) reviewing these ideas is like me writing a biography about Genghis Khan, and then people in 3800 CE using me as a source; too-far removed.

Still, I found the phrasing interesting. Just an anecdote.

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## Post by “Cassius” of April 13, 2026 at 10:06 AM

Yes I presume Goodwin is struggling with the same issue we are discussing. Epicurus is apparently using the word to designate a capacity for self-generated motion (as in the swerve) and in English "weight" does not give us that self-moving capacity. We need to figure out how to convey this better.

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## Post by “Cassius” of April 13, 2026 at 2:24 PM

And solving the problem of terminology doesn't require that we wait for some kind of explicit physics rechnology explanation, any more than Epicurus waiting before taking about uncuttable atoms or the swerve. The issue is that the atoms possess within themselves the power of movement and don't wait on gods or outside forces of any kind to bestow it on them.

The sole external requirement is space to move within.

"Weight" carries modern connotations that obscure that original intent of independent capacity, and also makes it harder to see how the swerve is equally uncaused.

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## Post by “Bryan” of April 13, 2026 at 3:30 PM

I think the English word "weight" works. We know what it means, it is the heaviness in an object.

If certain trends in modern science do not use words in their normal and correct sense, I'd say that is their problem!

Just like we do not throw out "god" or "atom" from our vocabulary *just because the authorities attach non-physical aspects to it* -- so too we should not throw out "weight" from our vocabulary *just because the authorities attach non-physical aspects to it!*

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## Post by “Cassius” of April 13, 2026 at 4:38 PM

Good thoughts Bryan. I would not want to use a word not closely related to something actually used.

Do you have any thoughts on the Greek or Latin words used in any of the places you have seen this discussed? I don't gather that "weight" is a direct transliteration of either Greek or Latin.

I see βαρύς (*barys*), meaning heavy, but that goes to barometer or "barium" rather than our english word.
And I see Lucretius uses both **pondus** which gives us "ponderous," "pound," and related English words and also *gravis* (heavy)

Is it as Eikadistes quoted earlier perhaps better to use the term gravity if Lucretius is using gravitas? Did the Greeks have separate word for "gravitas"?

In english gravity to me implies a force, which is really more what we are looking for.

i am finding no academic articles, but I see citation to the following place (On Fate 24) where Cicero apparently used BOTH pondus and gravitas in the same sentence, *arguably* implying that he considered them to be separate things (perhaps having weight BECAUSE of the gravitational force within it):

**Cicero, *De Fato* 11.23–24**

*De Fato* 23: "*si semper atomus gravitate ferretur naturali ac necessaria*" — "if the atom were always carried along by natural and necessary *gravitas*"

*De Fato* 24 (repeated): "*per inane moveatur gravitate et pondere*" — "moved through the void by *gravitas* and *pondus*" — and then immediately: "*ipsius individui hanc esse naturam, ut pondere et gravitate moveatur*" — "it is the nature of the atom itself to be moved by *pondus* and *gravitas*"

[23] Hanc Epicurus rationem induxit ob eam rem, quod veritus est, ne, si semper atomus gravitate ferretur naturali ac necessaria, nihil liberum nobis esset, cum ita moveretur animus, ut atomorum motu cogeretur. **11.** Id Democritus, auctor atomorum, accipere maluit, necessitate omnia fieri, quam a corporibus individuis naturalis motus avellere. Acutius Carneades, qui docebat posse Epicureos suam causam sine hac commenticia declinatione defendere. Nam cum docerent esse posse quendam animi motum voluntarium, id fuit defendi melius quam introducere declinationem, cuius praesertim [p. 261] causam reperire non possent ; quo defenso facile Chrysippo possent resistere. Cum enim concessissent motum nullum esse sine causa, non concederent omnia, quae fierent, fieri causis antecedentibus; voluntatis enim nostrae non esse causas externas et antecedentis.

24] Communi igitur consuetudine sermonis abutimur, cum ita dicimus, velle aliquid quempiam aut nolle sine causa; ita enim dicimus “sine causa”, ut dicamus: sine externa et antecedente causa, non sine aliqua; ut, cum vas inane dicimus, non ita loquimur, ut physici, quibus inane esse nihil placet, sed ita, ut verbi causa sine aqua, sine vino, sine oleo vas esse dicamus, sic, cum sine causa animum dicimus moveri, sine antecedente et externa causa moveri, non omnino sine causa dicimus. De ipsa atomo dici potest, cum per inane moveatur gravitate et pondere, sine causa moveri, quia nulla causa accedat extrinsecus.

M. Tullius Cicero, De Fato, section 24

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## Post by “Martin” of April 14, 2026 at 2:26 AM

Today's meaning of "weight" is indeed a poor fit. The modern term "inertial mass" seems to be accurate for βάρους in the context of Epicurean atoms moving with constant speed. There was no proper understanding of gravity in ancient times, but anyone could sense the effects of inertial mass.

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## Post by “Cassius” of April 14, 2026 at 4:33 AM

Martin what is the understanding of gravity today?

Is it held to exist independently as its own entity separate from all other things?

Is gravity itself "uncaused"?

Given that it appears to take a moon-sized or planet-sized body to generate much gravity, I am still thinking that it is something that is associated with "matter" even today (?)

Edit: Do you agree with this from Grok?

Does an atom generate gravity?

Yes, a single atom generates gravity. According to both Newtonian gravity and Einstein’s General Relativity (our best current theory), any object with mass (or energy) produces a gravitational field and curves spacetime. An atom has mass—mostly from its protons and neutrons in the nucleus, plus a tiny contribution from electrons and binding energies—so it sources gravity just like a planet or star does, only vastly weaker.

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## Post by “Patrikios” of April 14, 2026 at 12:08 PM

> Quote from Cassius

> The issue is that the atoms possess within themselves **the power of movement** and don't wait on gods **or outside forces of any kind to bestow it on them**.
> ...
> An atom has mass—mostly from its protons and neutrons in the nucleus, plus a tiny contribution from electrons and binding energies—so it sources gravity just like a planet or star does, only vastly weaker

Cassius , Martin, thanks for a fascinating discussion on causes of motion.
If I do the thought experiment of placing an object (e.g. 10kg weight) in the void outside of the earth's gravity, would the object move on its own? Or would that object's inherent "gravity" attribute cause it to move, or could it just stay where it was placed in space (if placed with no external movement force)? In other words, is "gravity" an inherent **potential** for movement, but it requires interaction with the gravity potential of another object to cause movement? The gravity field of a second object could be considered an "outside force" acting on the first object (10kg weight).

Is this potential for movement what is meant by "inertial mass?

To clarify this very broad statement (**or outside forces of any kind**), could we say that movement of objects only occurs because of the natural, inherent properties of objects (matter) and the interactions of those objects, even at great distances apart through unseen natural phenomena. Such movements are not caused by gods or any non-natural force.

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## Post by "Cassius" of April 14, 2026 at 12:38 PM

Excellent questions Patrikios. Thanks for asking them and it seems to me thought experiment is a useful way to approach the problem.

It's possible "modern physics" might have one answer, but even if it's different -- and I'm not sure it would be -- it would be helpful to think about that from Epicurus' perspective. Would the atom require interaction with another atom to move, or would it simply move due to the available space around it?

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## Post by "Martin" of April 15, 2026 at 6:36 AM

Here are my answers to Cassius' questions:

Gravity is one of four fundamental forces which can be considered as independent and their own entities in easy-to-understand models. There is a unified theory for the other three forces. Moreover, there are attempts toward a grand unified theory which would include gravity as well. I have no expertise in the unified theories. I am not aware of a generally accepted grand unified theory at this time.

In the easy-to-understand models, gravity appears to be uncaused. This might not by the case in more sophisticated models and is not the case in one type of monism.

Gravity is associated with "matter" in the adequate models I know.

I agree with the answer from Grok. There is one caveat which I mentioned in one of our Zoom calls. That mass (or energy) produces a gravitational field and curves spacetime is only one of three possibilities and assumes that mass and space exist independently (dualism) but affect each other. The other possibilities are that mass creates space (monism) and that space creates mass (monism). Each of the three possibilities is compatible with observations and the currently best models to explain the observations. Choosing one over the other three possibilities is rather belief akin to religion than knowledge at this time. In practice, publications typically imply dualism like in the quote from Grok.

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## Post by “Cassius” of April 15, 2026 at 7:25 AM

Thank you Martin!

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## Post by “Martin” of April 15, 2026 at 7:39 AM

Here is my comment to Patrikios' thought experiment:
Placing the object outside Earth’s gravity would not be enough because then it could be in the Sun's gravity. Placing it outside the Sun’s gravity would still not be enough because then it could be in the gravity of the Milky way.
We might find a point between two galaxies at which the gravitational forces of both galaxies cancel out each other and where the gravity of further away galaxies is too small to be significant for a reasonably long time of observation.
We can define a frame of reference there at which the object would stay at rest once placed

there without initial speed in that frame of reference. (There is a logical circle in it because the definition of an inertial frame of reference is that an object without external force keeps moving with its initial speed, i.e. stays at its place if initially at rest.)
If we want to move that object, we need to apply a force to accelerate it. The proportionality constant between force and acceleration is the inertial mass. (I would not call that "potential for movement".)
If we place the object in a gravitational field, the gravitational mass of the object is the proportionality constant between the force on the object and the gravitational field strength.
Gravitational mass and inertial mass are conceptionally different. We have defined our system of measurement units such that both masses are measured in the same units.
In a system, in which the units are not the same, the two types of masses are proportional to each other but not identical, which makes the conceptional difference more obvious. This is an ongoing topic of research into the foreseeable future. Physicists keep designing new experiments to test the proportionality between gravitational mass and inertial mass with ever increasing measurement accuracy.

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## Post by “Cassius” of April 15, 2026 at 8:12 AM

Martin - Is this saying that a single atom in an infinite void would not move, but require the presence of at least one other atom for there to be attraction capable of resulting in movement?

If so that might reconcile how gravity results in motion but that nothing is required (no third category) other than matter and space.

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## Post by “Martin” of April 15, 2026 at 11:03 AM

In a Newtonian universe with absolute space and time and when there is a point in time where there is no motion of that atom in the chosen frame of reference, yes, this would be the case at all other points in time, the atom would never move and would have never moved in the past.
In an Einsteinian universe with only one atom, there would be no references to measure space and time. Therefore, statements like "the atom moves" or "the atom does not move" would have no meaning.

The case of two atoms in an infinite void:
In a Newtonian universe with absolute space and time and when there is a point in time where there is no motion of both atoms and there is a distance between them, both atoms would accelerate from that point in time toward each other, collide, move with decreasing speed back to their points of rest, simultaneously come to rest there and accelerate again toward each other, repeating that cycle all over again into eternity and would have done so in all eternity of the past. (This is the simplest example of an eternal, pulsating universe. Until the discovery of the accelerated expansion, eternal pulsation between big bang and maximum extension was a credible scenario for our universe.)
In an Einsteinian universe, the two atoms would behave similar to the two atoms in a Newtonian universe. The distance between resting points would provide a reference for measuring space in the direction along which the atoms move. The period for one pulsation would provide a reference for measuring time.

There is a caveat: The physics of a universe might depend on what is in it. So, the laws which we know for our universe of maybe 10^89 particles might not apply in a universe with considerably less particles.

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## Post by “Patrikios” of April 16, 2026 at 10:04 AM

> Quote from Martin
>
> I agree with the answer from Grok. There is one caveat which I mentioned in one of our Zoom calls. That mass (or energy) produces a gravitational field and curves spacetime is only one of three possibilities and assumes that mass and space exist independently (dualism) but affect each other. The other possibilities are that mass creates space (monism) and that space creates mass (monism). Each of the three possibilities is compatible with observations and the currently best models to explain the observations. Choosing one over the other three possibilities is rather belief akin to religion than knowledge at this time. In practice, publications typically imply dualism like in the quote from Grok.

Thanks Martin and Cassius for your explanations.

Here is how Claude AI helps explain.

> Quote

> Would the object move on its own in “the void”?
> If placed perfectly isolated from all other matter, with zero initial velocity, the object would remain stationary. Gravity is a relational phenomenon — it describes the interaction between masses. A lone object has no “other mass” to attract or be attracted by, so no net gravitational force acts on it. Its own gravitational field exists as a potential, but potential without another mass to interact with produces no movement. So yes, gravity is an inherent potential for interaction that only manifests as force through the presence of another mass.
>
> Is this what “inertial mass” means?
> Not quite — this is an important distinction. There are actually two related but conceptually separate properties at play here:
> • Gravitational mass is what you’re describing — the property that causes objects to attract one another and be attracted. It’s the “charge” of gravity, analogous to electric charge.
> • Inertial mass is resistance to acceleration from any force — it’s the “stubbornness” of matter against changes in motion, regardless of what’s causing that change.
>
> The remarkable and somewhat mysterious fact is that these two quantities are always exactly equal (the equivalence principle), which Einstein built general relativity upon. But they’re conceptually distinct. Your isolated object would have inertial mass even in a universe with no other matter, whereas its gravitational interaction would be zero.
>
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So as I understand, the constant movement of the smallest indivisible particle (Epicurean atoms) creates the potential for movement by the compound object, but does not mean that all material objects just move without interaction with some relative force from another object. When compound objects do move, it is because of these invisible, **natural** forces arising between objects, not some divine unnatural force.

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## Post by “Cassius” of April 16, 2026 at 11:22 AM

Thanks Patrikios. It's always tricky to try to fit the "logic" arguments with the latest "science."

Going back to Sedley's Article "The Inferential Basis of Epicurean Ethics," I think there's a relationship here between Epicurus' decision to divide the entire physical universe between

"matter" and "void," and the entire "feeling" universe between pleasure and pain.

Certainly there are many types of atoms and bodies, and many types of pleasures and pain. And Nature doesn't have an intelligent design which inscribes a book with those labels and blesses this decision to divide between matter or void and pleasure or pain. There's some kind of "proleptic" decisionmaking that tells us to do that rather than to try to categories - say - matter into five types and void into five types, and pleasures into five types and pains into five types.

It seems to me that this is the question of "universals" -- what is the justification for your categorization decision?

I'm gathering that Epicurus is resting his justification on the senses while also recognizing that he is reasoning. Like Jefferson says, the senses ultimately give us bodies moving through space. That's two things, and while it's important that ultimately the bodies be composed of indivisible atoms, it's really at the sense level that we divide things into to.

And on the feeling level it makes sense in the end to say that there's "desirable and undesirable" (pleasure and pain).

All of this revolves around the issue of whether this world of the sense is the real world, or whether there's a hidden "true world" set of forces or beings or forms behind it and directing it. Epicurus is showing that it is possible to construct a system that is totally consistent with our senses and feelings, but which operates without divine or other hidden forces directing it.

So from that perspective, I would expect that when Epicurus divided the universe between matter and void, the last thing that he would have accepted would be that there is some "third force" that sets everything in motion and keeps it moving.

So I am saying all that to agree with where I think you are going, which is that motion (or the capacity for motion) is something that is inherent in the nature of matter, and that all you need for motion is atoms (more than one) and space. I don't think Epicurus would have accepted conceptually that it is possible for there to be any force which ultimately does not derive/arise/emerge from one of the two categories - bodies and space.

And this is where I think there's a lot more discussion to be had of what "emergence" entails. If everything in the universe is composed of "atoms" and void, then *everything,* including motion/gravity/whatever, arises from the interaction of those two categories, with no other category possible or conceivable. if something "exists," it arises / emerges from "matter" and "void."

Sure it's possible to divide things into five or fifty categories of bodies or of feelings. But what Epicurus is working for, and what we need, is a manageable system of thought through which we can understand our place in the universe and from there how best to live. That's what analysis based on "atoms and void" and "pleasure and pain" gives us.

## Post by “Matteng” of April 16, 2026 at 3:21 PM

In the past I thought laws of nature and natural forces are missing in Epicurean physics.

I searched for them and yes would like partly in this thread see the forces in the „motion of uncuttables“ but maybe also with an extension like an additional attribute(s) for void like curved space-time.

From where for example comes electromagnetic charges for protons ? Maybe from own motion/spin or the quarks in it ( the nowadays „atoms“ / uncuttables next to electrons and phitons ? ).

Or we extend Epicurean physics from atoms and void to fields and void ?

Stoics see in forces and laws of nature their physics confirmed, bit AI says me that even than when seeing energy, fields and information as fundamental, Epicurean physics is more realistic and closer to modern physics ( no intentional, governing Logos ). Exciting discussion.

Is modern physics an extension of Epicurean physics and follows from it ?

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## Post by “Cassius” of April 16, 2026 at 8:31 PM

> Quote from Matteng
>
> Is modern physics an extension of Epicurean physics and follows from it ?

I would not say that, and I feel certain Martin would not say so either.

Epicurus is targeting his claim of their being an ultimate limit to divisibility to the opposite argument made by prior philosophers - that there is no conceivable limit to divisiblity.

That's somethat that is not resolvable technically, with at least one reason being as observed by Lucretius/Epicurus that the instruments of precision are always going to be themselves composed of something that by nature those instruments cannot measure.

This is very theoretical area and I am not able to talk about it articulately, but there are as i understand it many articles out there on the intersection of philosophy and science that do.

What I think I am confident of, and what Epicurus was confident of, is that we will never know everything we would like to know. There will for all foreseeable future likely be new discoveries and new levels of detail. At the very least the discoveries will extend outward into unlimited space.

We know already that we will never visit every location in the universe nor travel in time as far back or forward as we would like to do. No human being ever has, not is there any reason to think that one could. Therefore we are not going to ever be able to argue that something has been "proven" to a standard of having examined every corner and every time in the universe.

An impossible standard like that makes no sense for humans to pursue, but yet we have to make decisions on how to spend the short lives that we have, so we have to make decisions on what levels of proof are "good enough" and possible.

Therefore Epicurus suggests a method of deciding what is true and false based on information that IS available to us through the senses, processed rationally by the mind. The ultimate stress of "trusting the senses" I think means exactly that: As humans there is no reason to think we will ever have information beyond that which is confirmed by the senses (and by the instruments which extend our senses) so we have to get comfortable going with what our senses consistently establish to be our reality.

> Quote from Matteng
>
> Epicurean physics is more realistic and closer to modern physics ( no intentional, governing Logos ). Exciting discussion.

So I think that's the ultimate point. All evidence points to nature working on its own without an external supernatural force behind it. That's the ultimate conclusion of Epicurean physics based on rational processing of the senses. I too see that as consistent with modern physics, but technicians, even though they select standards of certainty they think are practically useful, generally make no claims to address the ultimate correctness of when evidence is sufficient.

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## Post by “Matteng” of April 17, 2026 at 1:22 AM

Right, this was not good formulated from my side. Modern Physics are all new discoveries.

I think that Epicurus would integrate their findings today in his Philosophy when they have good evidence.

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## Post by “Martin” of April 17, 2026 at 2:50 AM

There are analogies between modern physics and ancient philosophies. In comparison, the most and strongest analogies appear to be with Epicurean physics.

A new theory typically does not follow from the old theory it replaces. Nevertheless, the old theory typically has enabled the development of the new theory. Similarly, the development of modern physics was enabled by Epicurean physics.