

# Episode One Hundred Seventeen - Letter to Herodotus 06 - The Doctrine of Infinity of Worlds And Its Implications

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Welcome to Episode One Hundred Seventeen of Lucretius Today.

This is a podcast dedicated to the poet Lucretius, who wrote "On The Nature of Things," the only complete presentation of Epicurean philosophy left to us from the ancient world.

I am your host Cassius, and together with our panelists from the EpicureanFriends.com forum, we'll walk you through the ancient Epicurean texts, and we'll discuss how Epicurean philosophy can apply to you today. We encourage you to study Epicurus for yourself, and we suggest the best place to start is the book "Epicurus and His Philosophy" by Canadian professor Norman DeWitt.

If you find the Epicurean worldview attractive, we invite you to join us in the study of Epicurus at EpicureanFriends.com, where you will find a discussion thread for each of our podcast episodes and many other topics.

Today we continue our review of [Epicurus' letter to Herodotus](#), and we move further into fundamental physics.

Now let's join Martin reading today's text:

Bailey:

[45] These brief sayings, if all these points are borne in mind, afford a sufficient outline for our understanding of the nature of existing things.

Furthermore, there are infinite worlds both like and unlike this world of ours. For the atoms being infinite in number, as was proved already, are borne on far out into space. For those atoms, which are of such nature that a world could be created out of them or made by them, have not been used up either on one world or on a limited number of worlds, nor again on all the worlds which are alike, or on those which are different from these. So that there nowhere exists an obstacle to the infinite number of the worlds.

[46] Moreover, there are images like in shape to the solid bodies, far surpassing perceptible things in their subtlety of texture. For it is not impossible that such emanations should be formed in that which surrounds the objects, nor that there should be opportunities for the formation of such hollow and thin frames, nor that there should be effluences which preserve the respective position and order which they had before in the solid bodies: these images we

call idols.

[47] Next, nothing among perceptible things contradicts the belief that the images have unsurpassable fineness of texture. And for this reason they have also unsurpassable speed of motion, since the movement of all their atoms is uniform, and besides nothing or very few things hinder their emission by collisions, whereas a body composed of many or infinite atoms is at once hindered by collisions.

[48] Besides this, nothing contradicts the belief that the creation of the idols takes place as quick as thought. For the flow of atoms from the surface of bodies is continuous, yet it cannot be detected by any lessening in the size of the object because of the constant filling up of what is lost. The flow of images preserves for a long time the position and order of the atoms in the solid body, though it is occasionally confused. Moreover, compound idols are quickly formed in the air around, because it is not necessary for their substance to be filled in deep inside: and besides there are certain other methods in which existences of this sort are produced. For not one of these beliefs is contradicted by our sensations, if one looks to see in what way sensation will bring us the clear visions from external objects, and in what way again the corresponding sequences of qualities and movements.

[49] Now we must suppose too that it is when something enters us from external objects that we not only see but think of their shapes. For external objects could not make on us an impression of the nature of their own colour and shape by means of the air which lies between us and them, nor again by means of the rays or effluences of any sort which pass from us to them — nearly so well as if models, similar in color and shape, leave the objects and enter according to their respective size either into our sight or into our mind; moving along swiftly, and so by this means reproducing the image of a single continuous thing and preserving the corresponding sequence of qualities and movements from the original object as the result of their uniform contact with us, kept up by the vibration of the atoms deep in the interior of the concrete body.

[50] And every image which we obtain by an act of apprehension on the part of the mind or of the sense-organs, whether of shape or of properties, this image is the shape or the properties of the concrete object, and is produced by the constant repetition of the image or the impression it has left. Now falsehood and error always lie in the addition of opinion with regard to what is waiting to be confirmed or not contradicted, and then is not confirmed or is contradicted.

[51] For the similarity between the things which exist, which we call real and the images received as a likeness of things and produced either in sleep or through some other acts of apprehension on the part of the mind or the other instruments of judgment, could never be, unless there were some effluences of this nature actually brought into contact with our senses. And error would not exist unless another kind of movement too were produced inside ourselves, closely linked to the apprehension of images, but differing from it; and it is owing to this, supposing it is not confirmed, or is contradicted, that falsehood arises; but if it is confirmed or

not contradicted, it is true.

[52] Therefore we must do our best to keep this doctrine in mind, in order that on the one hand the standards of judgment dependent on the clear visions may not be undermined, and on the other error may not be as firmly established as truth and so throw all into confusion.

HICKS

[45] The repetition at such length of all that we are now recalling to mind furnishes an adequate outline for our conception of the nature of things.

Moreover, there is an infinite number of worlds, some like this world, others unlike it. For the atoms being infinite in number, as has just been proved, are borne ever further in their course. For the atoms out of which a world might arise, or by which a world might be formed, have not all been expended on one world or a finite number of worlds, whether like or unlike this one. Hence there will be nothing to hinder an infinity of worlds.

[46] Again, there are outlines or films, which are of the same shape as solid bodies, but of a thinness far exceeding that of any object that we see. For it is not impossible that there should be found in the surrounding air combinations of this kind, materials adapted for expressing the hollowness and thinness of surfaces, and effluxes preserving the same relative position and motion which they had in the solid objects from which they come. To these films we give the name of 'images' or 'idols.'

[47] Furthermore, so long as nothing comes in the way to offer resistance, motion through the void accomplishes any imaginable distance in an inconceivably short time. For resistance encountered is the equivalent of slowness, its absence the equivalent of speed.

Not that, if we consider the minute times perceptible by reason alone, the moving body itself arrives at more than one place simultaneously (for this too is inconceivable), although in time perceptible to sense it does arrive simultaneously, however different the point of departure from that conceived by us. 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. In the next place the exceeding thinness of the images is contradicted by none of the facts under our observation. Hence also their velocities are enormous, since they always find a void passage to fit them. Besides, their incessant effluence meets with no resistance, or very little, although many atoms, not to say an unlimited number, do at once encounter resistance.

[48] Besides this, remember that the production of the images is as quick as thought. For particles are continually streaming off from the surface of bodies, though no diminution of the bodies is observed, because other particles take their place. And those given off for a long time retain the position and arrangement which their atoms had when they formed part of the solid bodies, although occasionally they are thrown into confusion. Sometimes such films are formed

very rapidly in the air, because they need not have any solid content; and there are other modes in which they may be formed. For there is nothing in all this which is contradicted by sensation, if we in some sort look at the clear evidence of sense, to which we should also refer the continuity of particles in the objects external to ourselves.

[49] We must also consider that it is by the entrance of something coming from external objects that we see their shapes and think of them. For external things would not stamp on us their own nature of colour and form through the medium of the air which is between them and us, or by means of rays of light or currents of any sort going from us to them, so well as by the entrance into our eyes or minds, to whichever their size is suitable, of certain films coming from the things themselves, these films or outlines being of the same colour and shape as the external things themselves. They move with rapid motion; and this again explains why they present the appearance of the single continuous object, and retain the mutual interconnexion which they had in the object, when they impinge upon the sense, such impact being due to the oscillation of the atoms in the interior of the solid object from which they come.

[50] And whatever presentation we derive by direct contact, whether it be with the mind or with the sense-organs, be it shape that is presented or other properties, this shape as presented is the shape of the solid thing, and it is due either to a close coherence of the image as a whole or to a mere remnant of its parts. Falsehood and error always depend upon the intrusion of opinion (when a fact awaits) confirmation or the absence of contradiction, which fact is afterwards frequently not confirmed (or even contradicted) following a certain movement in ourselves connected with, but distinct from, the mental picture presented - which is the cause of error.

[51] For the presentations which, e.g., are received in a picture or arise in dreams, or from any other form of apprehension by the mind or by the other criteria of truth, would never have resembled what we call the real and true things, had it not been for certain actual things of the kind with which we come in contact. Error would not have occurred, if we had not experienced some other movement in ourselves, conjoined with, but distinct from, the perception of what is presented. And from this movement, if it be not confirmed or be contradicted, falsehood results; while, if it be confirmed or not contradicted, truth results.

[52] And to this view we must closely adhere, if we are not to repudiate the criteria founded on the clear evidence of sense, nor again to throw all these things into confusion by maintaining falsehood as if it were truth.

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