

# Infinity and the Expanding Universe

Post by "Cassius" of July 25, 2020 at 7:25 AM

From [that article I just cited](#), here is the part that seems to me to be the center of the criticism against "A Universe From Nothing: Why There Is Something Rather Than Nothing," both the book and the terminology. I think the questions I underlined here are things we have to wrestle with in thinking about "Infinity and the Expanding Universe":

## Quote

That brings me to South African physicist George Ellis. [When I interviewed Ellis last year](#), I asked him if Krauss's book answers the question posed by its subtitle. Ellis responded:

*Certainly not. He is presenting untested speculative theories of how things came into existence out of a pre-existing complex of entities, including variational principles, quantum field theory, specific symmetry groups, a bubbling vacuum, all the components of the standard model of particle physics, and so on. He does not explain in what way these entities could have pre-existed the coming into being of the universe, why they should have existed at all, or why they should have had the form they did. And he gives no experimental or observational process whereby we could test these vivid speculations of the supposed universe-generation mechanism. How indeed can you test what existed before the universe existed? You can't.*

*Thus what he is presenting is not tested science. It's a philosophical speculation, which he apparently believes is so compelling he does not have to give any specification of evidence that would confirm it is true. Well, you can't get any evidence about what existed before space and time came into being. Above all he believes that these mathematically based speculations solve thousand year old philosophical conundrums, without seriously engaging those philosophical issues. The belief that all of reality can be fully comprehended in terms of physics and the equations of physics is a fantasy. As pointed out so well by Eddington in his Gifford lectures, they are partial and incomplete representations of physical, biological, psychological, and social reality.*

*And above all Krauss does not address why the laws of physics exist, why they have the form they have, or in what kind of manifestation they existed before the universe existed (which he must believe if he believes they brought the universe into existence). Who or what dreamt up symmetry principles, Lagrangians, specific symmetry groups, gauge theories, and so on? He does not begin to answer these questions. It's very*

*ironic when he says philosophy is bunk and then himself engages in this kind of attempt at philosophy.*

So as to: "*The belief that all of reality can be fully comprehended in terms of physics and the equations of physics is a fantasy.*" I think Epicurus would say that statement is exactly correct. Our human reality cannot be fully understood as "physics." Our human reality is real to us through the canonical faculties, including not just the bodily senses, which are "more" understandable in terms of physics, but also the feeling of pleasure and pain and anticipations, which arise from physical processes but in effect constitute a separate playing field of understanding. On that playing field we are competing with supernatural religion and philosophical questions to which our nature impels us toward finding answers, and I think Epicurus would say that the best (most pleasurable) life requires that we address these issues as best we can.