Introduction

Metaphysics of Physics is the much needed and crucial voice of reason in the philosophy of science, rarely found anywhere else in the world today. We are equipped with the fundamental principles of a rational philosophy that gives us the edge, may make us misfits in the mainstream sciences but also attracts rational minds to our community.

With this show, we are fighting for a more rational world, mostly by looking through the lens of the philosophy of science. We raise awareness of issues within the philosophy of science and present alternative and rational approaches.

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Hi everyone! This is episode seventeen of the Metaphysics of Physics podcast and I am Ashna, your host and guide through the hallowed halls of the philosophy of science. Thanks for tuning in!

Today we are going to discuss the book "A Rational Cosmology" by Gennady Stolyarov II. This is part one of a series.

What is this book and why are we talking about it? Is it as rational as it claims to be?

All good questions and today we will answer the first two and start to answer whether or not it is as rational as it claims to be.

Okay, so let’s dive in.

What Is This Book About?

Well, the title gives a not so subtle clue. It is a book intended to present a rational cosmology.

Lets quote the author himself:

"As constructive alternatives to these fallacies, A Rational Cosmology presents objective, absolute, rationally grounded views of terms such as universe, matter, volume, space, time, motion, sound, light, forces, fields, and even the higher-order concepts of life, consciousness, and volition. The result is a system verified by ubiquitous observation and common sense, the underpinnings of objective science which

demonstrate a knowable, fathomable reality and set the stage for unfettered progress, confidence in reason, and full-scale logical investigation of just about everything existence has to offer." - http://rationalargumentator.com/rc.html

[Editorial: What are “these” fallacies? Well, we will soon provide examples of the kinds of fallacies the author has in mind.]

Before we go further, what is cosmology?

Wikipedia defines cosmology as:

"Cosmology (from the Greek κόσμος, kosmos "world" and -λογία, -logia "study of") is a branch of astronomy concerned with the studies of the origin and evolution of the universe, from the Big Bang to today and on into the future. It is the scientific study of the origin, evolution, and eventual fate of the universe." - Wikipedia article on cosmology.

The universe is simply "the totality of all things that exist. It does not make sense to say it has an origin.

The universe is not a thing that can have an origin. It is simply "all the things that exist". In no sense does this have an origin. What could be the origin of "everything that exists"?

Something outside of existence? No. Something before anything existed? No.

Nor does "everything that exists" evolve. The concept of change does not apply to the concept "universe". So, it cannot be said to be evolving.

The concept "universe" is a pretty simple one and there is not a lot to discuss.

In episode three, we discussed the "configuration of the universe". This simply refers to the various relationships between things that exist. This is the kind of "configuration" cosmology might study.

Suppose that we consider various things like galaxies, stars, planets, moons, asteroids, comets and the like. This includes most of the things that exist.

And we then consider the various relationships between them. That combination, on a large-scale, is what we mean.

For instance, existence, in general, seems to be arranged as a series of stars, solar systems, galaxies. And various things in between. That is one "configuration" of existents. It need not be the only "configuration".

Perhaps before the "Big Bang", things were arranged in some other configuration. This is the kind of "evolution" cosmology might validly study. Although, "change" would be a better word than "evolution".

I don't really think that there is a lot for us to discuss here. At least not on Metaphysics of Physics. This is not an astronomy show. And philosophically speaking, cosmology does not give us much to talk about.

So, we will probably not cover the essays that discuss cosmology itself. Not in any great depth. With perhaps a few exceptions.

However, "A Rational Cosmology" discusses a lot more than just cosmology. It deals with the physics and philosophy of science in general. Although mostly physics.

It includes coverage of topics such as: axiomatic concepts, the difference between physics and cosmology, the concept of the universe, space, time, motion, waves, light, forces, infinity, life and consciousness.

It goes into other topics, but these ones and their implications are the main topics it covers.

One might wonder why it is not called "A Rational Philosophy of Physics". Or even "A Rational Philosophy of Science". Either would probably have made better titles. Especially as it does not even focus that much on cosmology as such.

Well, we may never know that, unless we ask the author.

What parts of the book are we going to cover? Well, not the entire book. At only 186 pages, we certainly could cover the entire book. But we will not do that.

We will confine ourselves to the more interesting parts of the book. We will cover some of the more rational parts of the book. As well as some of the less rational parts of the book. Mostly tackling whatever ideas are interesting or which bring up interesting topics of discussion.

We will not cover the book in order, from start to finish. We will go from early on and then jump around as we find interesting or related topics.

However, we will try to look at things in a logical order, without grossly violating any conceptual hierarchy.

What is Wrong with Modern Physics?

If you keep up with modern physics or this podcast, then it should not be too hard to find many examples.

Physicists talk of curved spacetime. As though space and time were physical aspects of the universe. As though space can bend and time can dilate. When in fact, both are relational concepts.

They talk of unobservable dark matter. Which they made up as a fudge factor to make their mathematics work.

It does not occur to them that their premises or their mathematics might be mistaken. No, they simply assume that something they cannot observe must be out there.

They talk about how light is both a wave and a particle. As though a wave was anything other than an abstraction. As though something could be an abstraction and a particle at the same time.

They speak about fields such as the electromagnetic or gravitational field. Without explaining what a field is. And treating a field essentially like a bunch of numbers describing the properties of various points in space.

They talk as though time travel might be possible. As though time was some physical thing one could travel through.

They talk about things magically jumping from point A to point B without covering any of the distance in between.

They talk about electrons and other subatomic particles and how they are governed by the laws of probability. But are not subject to the law of identity.

I could go on and on, but I think you get the idea. There are a lot of grossly irrational ideas in modern physics.

The reason there are so many of them is because many in physics have adopted irrational philosophies. They view reality in a very mystical, rationalist way.

If you treat reality this way, then you are bound to come to accept some pretty irrational conclusions.

Does the book cover any of these issues? Yes, it does. But, more importantly, it covers some of the philosophical issues which lead to such irrationalities.

The Author

Before we start going into the book, let us talk briefly about the author. Who is this Gennady Stolyarov II guy?

Stolyarov II is an actuary, science-fiction novelist, independent philosophical essayist, poet, amateur mathematician, composer and writer of countless articles.

He is very interested in philosophy. Many of his written works deal with many different aspects of philosophy.

He says that he is inspired by Ayn Rand. And this is quite easy to believe. His thinking has clearly been influenced by her philosophy. He mentions her ideas several times in the book and in his writings. As well as sharing many of the values typically held by Objectivists.

Is he an Objectivist? I am not sure. His understanding of her ideas is somewhat incomplete. It is unclear to what extent he consciously attempts to integrate them into his life. He very well might be.

However, that is not too important. What matters is that he has been influenced by her philosophy and that it has helped him develop some fairly rational ideas.

Alright, let us start to cover the book itself. But, where to start? Hmm…

What the Universe Is and Is Not…

This is the first part of chapter one and is the fifth essay. It starts on page 11.

"The term 'universe' does not denote an entity, however. It is the sum of all entities that exist. It is not a "whole" in the sense that a person, a planet, or a star is a "whole"

That is true. The term "universe" is "the totality of all things that exist".

As such, it is not an entity. By which, Stolyarov presumably means a solid, physical thing. A thing which one can point to and say, "this is what I am talking about".

He then goes on to point out that the universe is neither a quality nor a relationship.

It should be fairly obvious why "the totality of all that exists" is not a quality. What could all the things that exist be a quality of?

To quote him: "Nor is the universe a relationship. A relationship is an interaction between or among several entities that affects, in some manner, the qualities of these entities"

A relationship need not be an interaction. Relationships can also refer to commonalities between entities. Such as shared qualities. Or ways in which facts about one entity implies things about another entity. Or a causal connection between certain events.

For instance, humans and chimpanzees have a relationship between them. They would even if humans and chimpanzees never interacted.

They are related in the sense that they share common features. And in the sense in which man is also an ape, man must share all defining characteristics of an ape.

Or, take a parent and their children. They are related in several senses. Such as the fact that the children share their parents' DNA.

And that the children are descended from their parents, which describes a causal connection between the event of their parents mating and the birth of the children.

Nor need a relationship affect the qualities of the relevant entities. A chimpanzee and a human may be related, but this relationship in no way affects the qualities of any living human or chimpanzee.

They are related even if no human or chimpanzee ever interacted with and hence affected each other.

What about relationships between abstractions?

One and two are numbers, which are abstractions. Two is evidently related to the number one. Yet, the numbers one and two do not interact with each other. Nor does it make any sense to speak of numbers "interacting".

His main argument that the universe is not a relationship seems to hinge on the fact that:

"The term 'universe' implies no actions by any entity"

Which reinforces that he thinks relationships involve actions. Which need not be the case. Actions and interactions are not essential to the concept of "relationship".

A better argument would be that a relationship requires some connection between two or more entities. Or between two or more attributes of a thing. Since the term "universe" already includes everything, what else could there be for it to be related to?

The point is that a "relationship" extends beyond "interaction". Things do not need to interact to share a relationship. Nor do relationships have to affect the qualities of related entities.

He then points out that the term "universe" is simply shorthand for everything that exists. As opposed to separately listing out everything that exists. Which is obviously impossible and pointless.

Or as opposed to saying "everything that exists" all the time.

This we agree with, of course.

The Impossibility of the Universe Having a Shape, Boundary, or Edge

This is the sixth part of chapter two and is essay number ten. It starts on page 18.

Believe it or not, some physicists like to discuss the "shape" of the universe. They propose that it is donut shaped or torus-shaped or whatever.

They like to ask if it has an edge. Or some kind of boundary?

The author correctly points out that the universe cannot have a shape:

" Shape is a quality pertaining to an entity; it is a quality derived from a given entity's measurements in three spatial dimensions, such measurements being a topic for later discussion. 'Boundary' is another quality derived from the quantitative extent of a given entity's measurements in three spatial dimensions. Wherever these measurements end is the entity's boundary."

It is true, shape pertains to entities. Shape is an abstract concept which identifies certain spatial relationships.

When I say that a piece of paper is "round", I am simply identifying certain spatial relationships which describe the relationship between the edges of the piece of paper.

When I say that a tennis court is a rectangle, I simply mean that there is a certain spatial relationship between its edges which match the concept of a "rectangle".

This implies that the concept of "shape" only applies to physical objects, things with boundaries.

Boundary is a concept which applies to entities, things that have physical extension. But the term universe is not an entity and has no physical extension, therefore no boundaries.

He then proceeds to point out that the term universe refers to everything that exists. And is therefore not a physical entity. As shape applies to physical entities, the universe cannot be said to have a shape.

He then points out that it is not infinite. And that because it is not a physical entity, it cannot have any spatial measurements and thus it is neither finite nor infinite.

Indeed, the concept of "size" has no relevance to the concept of "the universe".

Infinity refers to a certain kind of potential to progress in a mathematical series. It does not refer to size. So, even if the universe was an entity, infinity would still not apply to its size.

Since the universe has no size, does this mean that the universe is not finite either?

No. The universe is finite. In the sense that it includes so many entities and no more. Let me explain...

The universe includes everything that exists. Only a certain number of entities. It may be a very large number of entities, but it is some number of entities.

The universe is therefore limited in as far as the number of entities it includes. So, in that sense it is finite.

Before we move on, I have a few further comments.

I do not agree that shape must be measured in three dimensions. For instance, you can identify a drawing and identify it as a circle. You can do so by only considering two dimensions and ignoring the third.

In an earlier chapter, he discussed the axioms. This is a good chapter and it is rare that such things are properly covered in any kind of philosophy book.

We have not covered this essay and probably will not do so in this series.

We will cover the axioms. But, not his coverage of it, as it is mostly not all that interesting.

However, there is this bit from that chapter which I would like to quote from page 9:

"The third corollary of identity: Anything that exists must have some relationship to everything else that exists"

The author had also said, quoted earlier in our discussion, that “ A relationship is an interaction”.

If a relationship is an interaction, then how is this a corollary of identity? How does the fact that to exist is to have a specific nature imply that everything must interact with everything else that exists?

Obviously, it does not. The axiom of identity in no way implies this. In fact, whether all things interact is not a philosophical issue. It is an issue of physics.

I have to wonder if he is using "related" in two different senses, without clearly indicating this. I would not have mentioned it, but unfortunately, it does make one curious whether he is overreaching as to what the axioms and their corollaries are.

Alright. That brings us to the end of this episode. Thanks for listening!

Outro

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As always, you are welcome to send in questions about any of the things talked about in this episode or about irrational stuff in physics or the philosophy of science in general. Send them in to questions@metaphysicsofphysics.com.

Please tune in for the next episode and start thinking of some questions! Until then, stay rational!