

WHAT MIGHT A "MULTIVERSE" BE GOOD FOR? RECREATION?

**MATHEMATICAL PLAUSIBILITY is one thing;
EVIDENCE OF DISCOVERY is another.
Both would be required for making a "real multiverse"**

Young scientists, rejuvenated scientists, the reachers of distinction in domains grown quieter... By the scores and across the fields of science, they are finding a vision of exceeding elegance in the far distance -- and I do mean far.

Vision? What kind of vision? One more poetic expression: Shall we say, a vision of elegance-in-discovery! Just awaiting their talents, which in the recent past have become a bit unbolstered.

String theory, still strung, floats in the background as this relatively new mathorama flourishes. With this one, no collider the size of Saturn -- or even Mercury -- will be required. But the seemingly infinite spatial extension of the multiverse is just as totally beyond the mind's conceiving. To pose that question at the first, just how does one imagine, put into words, or plot where to begin or end the measureless expanse of space, or something, or if you will pardon the expression, "nothing"... envisioned (or calculated, or created) by the Multiverse Theory?

We live on a small planet in a world-famous solar system. Our arrangement of worlds, moons, a star, and loose rocks helps make up a galaxy. So do billions of other systems, in billions of other galaxies. (You can't get away from big numbers in a visionary article.) But the point is, this universe is a sure-fire real universe. We used to think we were alone with the sun, the moon, and the firmament. Later we thought we were Lone Thinkers among thoughtless objects in space. Now we don't know. But if we can make exceptions for those who feel otherwise, we can feel justifiably sure our universe is real.

As for a multiverse, we don't know much at all that is really justified. I know I can't define "multiverse" to my own satisfaction. Or to be more rigorous, what I can't any longer define with satisfaction is a universe. True, we've got a trillion twinklers in our night skies, but we know they are altogether a universe -- ONE THING. The only thing like it! Now appears a throng of multiversers who could ask:

"What do you mean, the only thing like it?"

The fact is, the multiversers are in, at present, a very brain-pleasing situation. Their subject is so far out that only visionaries can envision it, and it swims in an extended version of space that no one can prove exists. Did you know that you can postulate as many other

universes as you please? (I find it consoling to believe that few, if any, astronomers are also multiversers. But how does one ask an astronomer that?)

The only drawback I can see in the multiversers' situation is (and I have no one's confirmation on this either)... that the recognized multiverser must have consummated or have obtained from another mathematician a complete, peer-pleasing set of equations -- and no doubt many more cerebral things I know not of. It seems there would have to exist a mathematical "fait accompli" describing how such a universe could exist. Not just mathematically but materially built upon a sound, even if altered framework of mathematics.*

I realize, of course, that I risk deportation by suggesting that the multiverse bases its validity on the notion that mathematical representation can often be used as though it is bestowing potential existence upon what it actually just stands for. Those who accept such an implication are not called "math creationists", as far as I know, but they do seem very happy in their work. The representation must be made with sufficient evidence, I presume, as well as elegance. And why not? After all, just trying it on to see if it fits a universe must seem like math nirvana.

** If I have this wrong, I'm sorry about it. You can scratch my name off the list for naming universes after cranks.*

In this sort of commentary an example is needed, hard to grasp or not.

To be fair, many different motives could contribute to the popularity of multiverse theories. Some might make for uncertain reading for nonprofessionals (as I can attest). But I don't call it peculiar when a born math-lover finds unique fulfillment in what amounts to making up a new universe. Getting really deep into it might bring a sort of charge. "Cosmic light" would sound better but I doubt you'd be hearing that from a cosmologist. "The author's interpretation", they would say. (Yes, but my "mathematics" wouldn't get me a two-second buzz in the thalamus.)

At any rate, why not enjoy a bit of creativity? Go ahead, make a really peculiar universe. Nobody has got to come live there, you know.

Now about the example. First let me say I did not pick this passage solely for purposes of criticism. I have paraphrased it, as best I'm able, to parallel in expression and meaning a very striking article appearing in a well-known publication a few months ago. I think its writer, who is not among the scientists involved, deserves kudos for his handling of a subject that has to waver in and out between material visualization and the abstractness of its underlying thesis, which I would call mathematical origination.

(Let me explain that I try never to quote scientists or science writers directly. It's a matter of permissions. I figure that as a practicing crank I might not encounter enthusiasm on the part of publishers. Also I almost never give names or identify source, and when avoidable do not throw water on somebody's bonfire; end of blurb.)

The article writer explains earlier on that about five scientists (I can't be sure) have been involved in this multiverse project. They are described as a team: four from the U.S. plus one from the U.K. The general impression is given that they have been employing a variety of approaches to the problems of altering formulas for different multiversal examples. This is usually done, it is implied, by changing one important factor in a summarizing equation. By some means or other they can then predict what would happen in that universe if so changed.

As concerns the "discovery", it seems that one member of the team has perhaps gone farther than the others in bringing about a major change in the procedure resulting after a big-bang universe. Such change does not form the beginnings of a regular big-bang. Instead it causes a cold bang. (The regular result is a bang that is hot. I should have known that, but it never occurred to me.) The team knew about it and were not surprised; they went right ahead.

One display of strangeness, which I incidentally found hard to paraphrase, affects the stars. It turns out that in a cold-bang universe stars come into existence so rapidly that they rush away from each other. It seems that one change introduced was to increase a cosmological constant to be 10 to the 17th power stronger. There was anxiety, I presume, that such privacy-seeking stars might fail to form galaxies. But I couldn't find where it said they did or not. No one was said to be worried. What worries me is that the part which sort of summarizes the team's "discovery" is now coming up. It was very hard to paraphrase, though very short. I for some reason wish it had been longer:

There is no reason why a star in such a cold-bang universe could not manage to have planets and those planets to have observers. Since we (the discoverers) have discovered two islands in the multiverse (ACTUALLY THREE WHEN WE INCLUDE OUR OWN UNIVERSE)... the only question remaining is... Are there any more? MANY more?

(Evidently in answer to that question, one of the scientists replied with a word I am paraphrasing: "Indubitably".)

— — — — —

Meaning that in the minds of a pioneering group of, you might say, scientists without boundaries, an unlimited number of potential universes which might occupy assumed extensions of space can be designated a multiverse. If, of course, they can be somehow brought into existence.

My inability is quite evident: I cannot reach enthusiasm about universes that are expected to exist, primarily by mathematical assurances. Can that bestow enough figmentary reality to convince of their likely existence, now or in the future?

Maybe I misunderstand about the two islands; it sounds like they have been discovered close enough to us to be in this, here, universe. Surely we are still in this run-of-the-mill little universe? But if our best telescopes can't see them, how does anybody know they're anywhere? Meanwhile they establish a multiverse, into which that puts us. Doesn't that sort of thing have to be serious?

Yet to me there has not been told enough to determine certain facets of the writer's investigation. Such as exactly how should the term "discovered" be interpreted? Discovering two new universes has got to be important -- islands or no islands.

All this would seem to be important, yet I have not heard nor read of astronomers waving flags and gesticulating around their observatories. And there are certainly plenty of those in Arizona.

My first total reaction to all matters concerning a multiverse was simply to give up and say WHO NEEDS IT? A lot of questions remained, but only one optimistic answer came to me. Instead of some version of creation, perhaps the idea of a multiverse has to do, instead, with recreation.

Recreation is known by one and all to be a good thing. So who knows how much of great value to science, religion, neutrality (and for all we know the blossoming of intercosmic civilization) may come from the present interest in multiversal recreation?

It could become much more than recreation, of course, but at this stage of the game that is exactly what it seems to be. Surely we can think of all manner of good, important things that began as recreation?

Maybe we do need it.



Great Expectations follows on next page