

# My Thoughts

Do I think string theory is “not even wrong”?

Experimental results from the Large Hadron Collider show no evidence of the extra dimensions or supersymmetry that string theorists had argued for as "predictions" of string theory. The internal problems of the theory are even more serious after decades of research. These include the complexity, ugliness and lack of explanatory power of models designed to connect string theory with known phenomena, as well as the continuing failure to come up with a consistent formulation of the theory.

Are multiverse theories not even wrong?

Yes, but that's not the main problem with them. Many ideas that are "not even wrong", in the sense of having no way to test them, can still be fruitful, for instance by opening up avenues of investigation that will lead to something conventionally testable. Most good ideas start off "not even wrong", with their implications too poorly understood to know where they will lead. The problem with such things as string-theory multiverse theories is that "the multiverse did it" is not just untestable, but an excuse for failure. Instead of opening up scientific progress in a new direction, such theories are designed to shut down scientific progress by justifying a failed research program.

Sean Carroll has written that falsifiability is overrated as a criterion for distinguishing science from pseudo-science?

No one thinks that the subtle "demarcation problem" of deciding what is science and what isn't can simply be dealt with by invoking falsifiability. Carroll's critique of naive ideas about falsifiability should be seen in context: he's trying to justify multiverse research programs whose models fail naive criteria of direct testability (since you can't see other universes). This is however a straw man argument: the problem with such research programs isn't that of direct testability, but that there is no indirect evidence for them, nor any plausible way of getting any. Carroll and others with similar interests have a serious problem on their hands: they appear to be making empty claims and engaging in pseudo-science, with "the multiverse did it" no more of a testable explanation than "the Jolly Green Giant did it". To convince people this is science they need to start showing that such claims have non-empty testable consequences, and I don't see that happening.