

ED WITTEN – ELEPHANT ANALOGY

Article Number **8.81**By **Nick Ray Ball** 13th October 2018**Ed Witten - Mystery Theory ('Big Ideas' Interview)**<https://www.youtube.com/watch?v=77wN6C-NWD8>

Video Time 4:14

Ed Witten:

So it's great to have a theory that forces you to have gravity instead of the old framework where gravity is impossible.

Interviewer:

And weren't there 5 possible theories for string theory?

Ed Witten:

The Traditional viewpoint back in the 1980s was that there were five possible string theories, which was a big improvement over physics as it had been before because, in the standard quantum mechanical framework there are all kinds of theories that they could have, in fact, infinitely many.

What we learned in the '90s was that the different string theories as we had known them traditionally were actually different aspects of one bigger theory.

It's a little bit as if one string theory describes the tusk of the elephant and one describes the tail, one describes the elephant's ears and another describes the trunk, and then finally in the 90's we learned what we had been studying from different points of view were different aspects of one Elephant. It's a very dimly lit elephant, we don't understand it well, but at least by now, we know that there just one Elephant, one candidate for super-unification of the laws of nature which we've been studying from different points of view for so long.

Interviewer:

Why call it the M-theory?

Ed Witten:

If we really knew what it was we would give it a name that would describe it better, but since we don't really know what it is we give it a temporary name like M-theory. I always say that M stands for Magic, Mystery or Matrix according to taste.

(Note that Witten also suggests the M is for Murky, as our understanding of the theory is so.)



