

Where Is The Unicorn?

Thoughts about Theories, Truth, and Unicorns

By Kathrin Strauß

Are unicorns a real thing? Not the ones printed onto bottles of alcohol or condoms, but as living, breathing creatures? No? Can you proof it?

Now you might refer to a big book on species (or – you know – the internet) and tell me that there is no section on unicorns, that nobody has ever described one and that this is ridiculous. But can you proof that on Proxima Centauri b unicorns do not happily live in a land filled with cotton candy and lollipops? Granted, we know very little about Proxima Centauri b and certainly do not have information about unicorns, lollipops, or cotton candy on its surface. Yet, is that enough to make the statement *There are no unicorns anywhere* true?

We commonly use something called the Correspondence Theory of Truth. Whether a statement is true or false is determined by how it related to reality. If it accurately describes a state of affairs the statement is true. If it does not, it is false. Take an example: It is raining in Münster right now. The statement – or for the more nerdy ones amongst us: the assertive Speech Act – is true, if it is actually raining in Münster right now. So obviously yes. But why is this different from the unicorn?

On an ontological level, it is not. There is a reality, either with rain or no rain in Münster and with unicorns or no unicorns. Both statements may correspond to said reality and that makes them true. Epistemically, however, there is quite a difference. I could prove that my statement is true. I just need to observe the entirety of my relevant reality and show that there is rain. It might be challenging, given the size of my relevant reality, but *Oh, I get by with a little help from my friends*.

You on the other hand try to prove that something is *not* the case *within all of reality*. And regardless of the number of friends you have and considering the expanding universe, you will not be able to do that.

Karl Popper can explain why that is. *There are no unicorns* is expressing a universal statement. It claims that something – a unicorn – does not exist. If they do, it is wrong. If they do not, the statement is true. The unfair thing is that there is an unbalance. I can falsify your claim, if I catch a unicorn, send it to one of those fancy, high impact score journals and gracefully drop you a copy. There you go. There are unicorns, you are wrong. However, you cannot verify the claim accordingly. Sending me a video of your unsuccessful unicorn hunt does not convince me that there are no unicorns, but merely that you did not look close enough.

The same is true for theories of empirical sciences. As soon as they entail a general claim about how something is or not is. Regardless of in how many cases it accurately depicts reality, the one counter example where it does not disprove the entire theory. Fitting in does not verify the theory, but not fitting in does falsify it. Therefore, if scientists use phrases like *as far as we know*, it does not mean that there is a low level of certainty to their theory. It merely means, that they know that every fitting case is not a proof and that every ill-fitting case is a disproof, they simply have not found yet. This is as good as it gets. As soon as we find that case, we have to adjust it. That is what we call scientific progress.

There are no unicorns, *as far as we know*.