



No. Or, at least, we have zero evidence that it does.

We can't make causal inferences about things we can't perceive. We can't perceive the Higgs boson. Therefore we can't infer that the Higgs Boson exists from experimental data.

Without a doubt

On 4 July 2012, the [ATLAS](#) and [CMS](#) experiments at CERN's [Large Hadron Collider](#) announced they had each observed a new particle in the mass region around 126 GeV. This particle is consistent with the Higgs boson predicted by the Standard Model.

Karl Popper

Probably, though science can never be certain.

Though science can never know whether the claims of a theory are totally certain, the risky prediction of the Higgs boson by the Standard Model has survived repeated attempts at falsification. That's all we can ask of a theory, according to Popper, since he doesn't believe in induction and thus doesn't think we accumulate evidence for scientific claims.

N. R. Hanson

Maybe. Depends on your theory.

How scientists see observations is partly determined by their theories. Particle physics scientists with different theories can see different things — maybe a Higgs, maybe not a Higgs — while looking at the same observational data.

Definition: A massive subatomic particle with zero electric charge. It is postulated to interact with other particles in such a way as to impart mass to them (*American Heritage Science Dictionary*)

Hilary Putnam

Sure. Why not.

Putnam doesn't really address the issue directly. But he doesn't think talk of nonobservables is particularly spooky or odd, e.g., when he writes that "[t]here was never a stage of language at which it was impossible to talk of unobservables."

Stephen Toulmin

Depends on what you mean by 'exists'.

The Higgs boson certainly does not exist in the same way that an animal species exists or a fictional character exists. But it may exist in the same way that lines on a cartographic map exist.

Rudolf Carnap

Probably, though it's somewhat beside the point.

We can only know about unobservables, such as the Higgs boson, indirectly. However, since the Standard Model has predicted many empirical laws — and since the theoretical term Higgs boson is part of the Standard Model — we have every reason to think that the Standard Model is a good theory.