

The Pedantic magic word as used in Physics

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The word “pedantic” is being used as a magic word to dismiss certain objections to mainstream physics. If an objection is raised as to what is being said by a physicist, and the physicist response that it is a pedantic issue, then the magic given to the word pedantic is supposed to make you ignore your objection.

0. Introduction

Pedant usually means: one who is unimaginative or who unduly emphasizes minutiae in the presentation or use of knowledge.

But there can be other meanings and the term “pedant” can be used as an insult.

Anyway, as far as I am concerned: it is one of the problems with Physics that attention to detail is often being ignored, and contradictions are being created in what is being said.

Thus, now starts the Pedantic issues:

1. Inspired by New Scientist article 13 May 2020: “We have seen hints of a new fundamental force of nature”

The New Scientist article [1] starts by speculating about additional fifth force to the four known forces (electromagnetism, weak, strong and gravity).

But what strikes my attention is when the article eventually says: “As physicists close in on the discovery of a fifth fundamental force of nature (see main story), a pedant might counter that we have already found it. And they would be right, sort of.”

There is no mention of Higgs in the above article but raises Higgs as a Pedant issue in the side note. The Higgs field could be said to cause a force- the Higgs Force.

The main bulk of the article talks about the four fundamental forces, wondering about different ideas for a fifth force and ignores talking about Higgs force, and dismisses talking about Higgs force being the fifth force as a pedant issue!

Instead of addressing how Higgs force fits with the other forces it gets dismissed as pedantic.

2. When was discovery made?

Quoting from same article of New Scientist, explains the 4 fundamental forces of nature as:

We currently know of four fundamental forces governing the basic workings of matter in our universe today.

ELECTROMAGNETISM: Explains why atoms hold together and how light behaves

GOVERNING THEORY: Quantum electrodynamics (QED)

MEDIATOR: Photon (predicted by Albert Einstein in 1905)

MAXIMUM RANGE: Infinite

WEAK NUCLEAR FORCE: Accounts for radioactive beta decay and the nuclear fusion that fuels stars

GOVERNING THEORY: Electroweak theory (unified theory with QED at high energies)

MEDIATOR: W and Z bosons (predicted in 1968, discovered in 1983)

TYPICAL RANGE: 10^{-18} metres

STRONG NUCLEAR FORCE: Holds protons and neutrons together within the atomic nucleus

GOVERNING THEORY: Quantum chromodynamics (QCD)

MEDIATOR: Gluons (predicted in 1962, discovered in 1979)

TYPICAL RANGE: 10^{-15} metres

GRAVITY: Keeps galaxies together, the planets moving around the sun and our feet on the ground

GOVERNING THEORY: General relativity

MEDIATOR: None; gravitons if it were found to be quantum

RANGE: Infinite

END-QUOTE

Now that raises Pedant issues.

(a) The two forces: **WEAK NUCLEAR FORCE and STRONG NUCLEAR FORCE** are stated as being mediated by particles that were predicted and then discovered.

But the other two forces no such claim is being made.

(i) First the **ELECTROMAGNETIC FORCE:**

Says that the force was predicted by Einstein as mediated by a particle (photon), but no mention of this prediction being backed up by a discovery. And if there was a discovery made that the electromagnetic force was mediated by a particle, that would prompt the question of what experiment was that.

I suspect anyone pointing out the absurdity of what is being said here (in the New Scientist article) will be dismissed as pedantic. But it hides that Einstein's supposed discovery of photon is probably better described as an interpretation (due to theory) of experiments, and probably the same for the other supposed discoveries are really mere interpretations.

Next:

(2) Gravity says for mediator – there is none. What does that mean (?) And goes on to say if there is a mediator then it is a graviton. i.e. the article does not know if there is a particle mediating the force of gravity and awaits discovery to whether such a particle exists.

So, being pedantic about this – how does Mainstream Physics cope with gravity while it awaits discovery of graviton (?), does it assume no graviton in the meantime(?)

These pedantic issues -Mainstream loves to ignore as it fills up articles of physics with dross.

It's like Pavlov's dogs that were conditioned to salivate (classical conditioning), [2] people have been programmed to respond to the word "pedantic"; bring up an issue querying what a scientist/physicist is saying and if they respond by saying that is a pedantic issue, then they expect that you have been conditioned then to respond to that magic word by ignoring the issue you raised, allowing them their contradictions.

References

[1] New Scientist article 13 May 2020: "We have seen hints of a new fundamental force of nature", Daniel Cossins

[2] https://en.wikipedia.org/wiki/Classical_conditioning

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