

Re: Quantum Mechanics: established fact?

Source: <http://sci.tech--archive.net/Archive/sci.physics/2006-06/msg01165.html>

- *From:* "T Wake" <Usenet.es7AT@xxxxxxxxxxxxxxx>
 - *Date:* Fri, 9 Jun 2006 18:56:15 +0100
-

"srp" <srp2@xxxxxxxxxxxxxxx> wrote in message
news:4489AA1D.6090302@xxxxxxxxxxxxxxx

T Wake a écrit :

In the loosest sense of the word proof, a theory which makes predictions about something untestable, but has follow on predictions about things testable is sound.

In my book, any untestable conclusion is meaningless to start with.

In itself though, that is an untestable conclusion. A goodly proportion of ideas and theories come, at some stage, to a point where an assumption has to be made.

In order that human knowledge advances we have to make some assumptions. For example, your criteria remove any ability for science to be conducted beyond the solar system and make anything further away than the orbit of the moon difficult.

Without this extension to the "proof requirements" we would still be in a lot of quandries regarding the universe.

Well, I disagree. If more focus had been put on verifying what is verifiable, I have a view that we would have more verified data at our disposal.

Most of the current ideas in cosmology are verified, although I get the feeling you dont agree with the verification process.

For example, the age of the universe has been determined by several methods – each independant of each other and each others underlying

Re: Quantum Mechanics: established fact?

physics – and they agree (within error bars of course) to the same approximate age.

Also, the equivalence principle is something which has to be "assumed" as being true. We can not, ever, test all the laws of physics in every single part of an infinite universe.

The only real assumption that need be made in my view is that the laws of physics are the same all through the real physical universe.

It is still an untestable assumption. If you make one, why not others?

When you say "real physical universe," what else is there?

This is the assumption I made and it means that all fundamental physical laws can be tested locally.

Yes. This is what happens today. We assume that the laws of physics are the same 3×10^{100} lightyears away as they are here.

This does not imply that they are the same under different temperatures / pressures though.

The downfall of the idea itself appears as you approach $t=0$.

But it does appear at some point.

Yes. All theories have areas in which they cease to be valid.

If you go to a time before $t=0$ then as far as I know, there are no "scientific" theories which can even begin to answer this.

It is almost certain that the models and theories *we* humans use to describe the universe as incomplete and inaccurate.

For now, with the currently integrated verified data, yes.

Tomorrow is another day.

Re: Quantum Mechanics: established fact?

Re: Quantum Mechanics: established fact?

Yes. However, there is no reason to assume humanity will *ever* be able to describe cosmological process in an exact manner. We are a part of the whole, tied into three dimensions of movement with time heading in a specific direction.

I am not doubting that with each passing day our models will become more accurate and make better predictions, but this does not have the inbuilt implication that they describe the cosmos in better detail. They still talk about *our* interaction with the universe.

This is because they are, simply put, models. Ascribing too much significance to the detail is, potentially, a dead end. For example, there may well be a cosmological ether, however none of our theories (which have an excellent track record for matching the experimental data) require it and no experiment has detected it. Therefore, with nods to Occam, it is not required for the model.

And therefore, it is not there.

Well. I for one see no reason to believe in an "Aether" (However cranks here choose to call it), however I am also aware of the fact that because something isn't required for a model doesn't mean it is not actually there.

That doesn't mean it doesn't "exist" though.

In my book, it does mean exactly that.

Either something exists and it can be verified to exist or else it simply doesn't exist. No Goedel middle ground in physical reality.

Ok. But that is a philosophical conclusion to draw.

If a new, better, theory of Quantum Gravity (for example) was introduced and verified, and found to have an Aether, would you ascribe it suddenly beginning to exist? Or would it have always existed, yet not been needed for our models?

A model is a model. It is not reality. It may be an excellent description of reality, but they are different.

First off, what if "other stars" have a different composition to our reference stars (within the local group). This is possible (at the extreme of the range of possible things though) but if it is the case

Re: Quantum Mechanics: established fact?

then we need to review pretty much all our current laws of physics.

I don't think there is any need to. My view is that an electron here is identical to an electron 1 gazillion light years from here. Same for a proton, same for a hydrogen atom and all other more complex atoms.

Ok, we agree on that then.

As these laws function perfectly in all manner of situations on Earth we have no reason to believe the same does not hold true elsewhere.

Absolutely. In fact, it would make no sense if it was otherwise. All spectral data from afar would be meaningless.

While there is no proof that stars a million light years away are identical to our Sun, it would take proof for people to think otherwise.

Then, consider only people who use common sense. That's what I do.

Common sense is often a bad choice when it comes to looking for guidance in physics.

Next weak point is the Doppler shift. We cant fly a billion light years away and shine a torch at Earth to see what happens but we can look at the physics involved and the equipment we have here. It is possible that the redshift from large scale structures could be the result of little green men abducting the photons and experimenting on them. We don't know for sure. What we can do is experiment.

We know that light from the Sun to the Earth is Doppler shifted as the Earth rotates around the Sun.

Yes.

We know we can create a Doppler shift in light between two locations on Earth and that you can still see the Doppler effect after wavelengths have been absorbed by intervening materials.

Yes.

Re: Quantum Mechanics: established fact?

Re: Quantum Mechanics: established fact?

What reason is there to think the red shift is anything other than down to the Doppler effect?

The Hubble red shift could also be a mix of real Doppler shift depending on the real relative velocities of each galaxy with respect to us plus some other effect.

Yet, as we know what would cause the effect – and our models show this will make predictions which match the observed data – it seems that some serious proof would be required to include extra forces which are causing the redshift.

In the absence of any reason to think it is something other than Doppler shift, why look for other reasons?

For example real loss of energy of incoming photons due to some other cause. This has already been considered, but always rejected out of hand because the Doppler idea no doubt was more appealing, particularly since it seemed in sync with GR and more simple to mathematically address.

Well, earlier you discuss the requirements for testable proofs and experimental validity.

We can test, prove and validate the Doppler effect on photons here on Earth. It seems you are suggesting we search for some "unexplained phenomenon," which we can not create here on Earth, because you dont like the implications of the Doppler shift.

As with the Aether, the model (verified from paralax, spectral analysis etc) implies there is no need to find another reason. They may be one, but the model doesnt require it.

By your own assertion, this means there is no other reason.

Ok. Publish them on a website and wait for a scientist in need of a PhD subject to read them, agree with them, and take it up.

Not likely. Waste of time.

Why? What is the rush?

Re: Quantum Mechanics: established fact?

Re: Quantum Mechanics: established fact?

I hate red tape.

Same here. Wasnt much when I was in academia. (I was still pants though)

Second hurdle: there is no way this will be subjected to the whim of insufficiently knowledgeable reviewers.

Well this is a problem.

In science, if you come up with a groundbreaking new idea you have two choices.

1 – submit it for the review of people who dont understand it as well as you do.

No way.

2 – keep it a secret and take it to your grave.

No way either.

The stuff is safely out of the box and safely impossible to repress by anybody. It simply is not yet within reach of the physics community.

Well, generally speaking, very little in science actually gets "repressed." If something new and groundbreaking is found then it gets publically debated – despite the best wishes of those who disagree. If a theory is sound, it will survive anything its detractors throw at it. (For example the H. florensis debate)

If it is not sound, no one will be interested.

Until you publish, no one will know it.

It is in print. And already fairly widely, however thinly, distributed in institutions all over the big ball.

That is enough. It will be peer reviewed though, in that your peers (people

Re: Quantum Mechanics: established fact?

Re: Quantum Mechanics: established fact?

who are also interested in / studying cosmology) will read it and pass judgement on it. If they like it and agree with what it says, then it will grow.

Publishing requires peer review otherwise every nutcase would change science every ten minutes.

Well, no peer has nor will review this particular nut case before it eventually climbs the metaphorical leg of the physics community on its own.

Ok. It is being peer reviewed though, just in a different manner than required for formal publication.

Despite peoples fears, the peer review process is not as "nasty" as some think. Most people chosen to review a document look forward to learning new things. Let them read it, if they learn and agree your document is sound. If you cant convince them, then you need to rewrite it.

I know the drill. The answer is no. Not this time around.

As I said, it will be reviewed. When it gets used as a citation you know you have succeeded in getting it accepted.

You can start by describing the experiments you feel would support your ideas.

I have. Exhaustively.

Ok. Are they feasible? Can they be conducted easily?

Yes very easy to conduct. The problem is, no one will any time soon, since it based on a model that won't be considered any time soon.

Well, you would be surprised what people are willing to do as experiments.

Surely the experiment required to validate the model does not require acceptance of the model prior to the experiment though?

Re: Quantum Mechanics: established fact?

Re: Quantum Mechanics: established fact?

Generally speaking, there are hordes of scientists who would bite your arms off for a head start in re-writing cosmology. The fame and kudos that would attach to such a person are phenomenal.

No doubt. All they need to do as I did: isolate the verified data and reconsider.

Ah, this is often not the case. Isolating data is sometimes the road to madness. What person A may feel is sufficiently isolated may not match person B's opinion.

Who said that B had to agree. You define your own validity criteria.

Well, this is the problem with trying to "isolate" data from other peoples works. Some one may come up with an almost random conclusion.

Mine is, if something can be scattered against, it is physically there and you can study it, otherwise, it is not there (it does not exist, so no need to waste time considering whether or not it may exist while not being verifiable.).

Well, I dont have any problem with this, I think. It depends on your use of terminology being the same as mine. Can you scatter against gravity? Can you scatter against the weak force?

Not to mention, in Cosmology most of the verified data relies on other theories to support the verification process. We have never had ANY actual contact with anything outside our solar system, so almost all verification is by third party means.

This is not what I call verification. I call verification, verification of physical (scatterable) existence. I found that this can occur only at the particle level.

Interesting, yet you miss the fact we verify the particle interactions and scale that up to produce the cosmological data used day in and day out.

How do you verify gravity exists? On the particle level it is very different to what happens on the big scales.

Re: Quantum Mechanics: established fact?

Re: Quantum Mechanics: established fact?

Every day, in universities across the globe, there are young scientists who are trying to re-write the books on cosmology and the big bang theory. The reason none (so far) have succeeded is that the data supporting the idea is actually quite robust.

My view is that it is because they have been relying on _supposedly_ verified data and on unverified and often unverifiable assumptions.

Often they haven't. There are a lot – especially undergraduates – who try to recreate from first principles as it were.

The data supporting the theories remains robust though. What is there you don't agree with?

Seriously, if you are confident about your ideas then you will find a scientist who will look into it.

Well, I have no doubt that this will happen some time in the future.

With 3000 copies of my book already floating about, this is unavoidable.

Excellent.

But as I said, I have no control over the timescale.

That is a secondary consideration.

Yes. The real important consideration in my view is that the community has no control over its spreading either.

Yet the science community has total control. Without getting scientists "on side" a theory is dead in the water. Scientists can be recruited to a theory based on successful (reproducible) experimental data, or a very sound mathematical model.

If they are not recruited, then how does the theory grow and gain acceptance?

Despite what is often alluded to on USENET, there is not a conspiracy to

Re: Quantum Mechanics: established fact?

Re: Quantum Mechanics: established fact?

keep scientific advances hidden (no, the stone cutters don't exist :-)) –
when a new, good, theory appears it spreads. This is despite the best
efforts of its opponents (Evolution for example).