

## Re: Quantum Mechanics: established fact?

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  - *Date:* Sat, 10 Jun 2006 15:41:07 +0100
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"srp" <[srp2@xxxxxxxxxxxxxxx](mailto:srp2@xxxxxxxxxxxxxxx)> wrote in message  
[news:448A0D2C.2070105@xxxxxxxxxxxxxxx](mailto:news:448A0D2C.2070105@xxxxxxxxxxxxxxx)

T Wake a écrit :

But it still rests on a complete assumption. You have no way of testing the validity of that assumption. This makes two untestable assumptions your theory relies upon:

- 1 – any untestable conclusion is meaningless
- 2 – If you can not scatter something against "X" then "X" does not exist.

These are assumptions though.

Also, to some extent, 1 falsifies 2.

This is your interpretation. Pretty negative.

My view is. If something can be scattered against something, then that something physically exists. The rest is thin air to me.

The physical existence of something that can be scattered against is not an assumption to me.

No, but the lack of existence of everything else is.

The validity of scattering as the only means of a proof of existence has to be proven though – otherwise this is an assumption.

Maybe to you and possibly to the rest of the community. But not to me.

Ok, however leaving your head in the sand does not imply that a theory is based on a valid premise. Remember, your theory needs to convince people it

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is sound. If your only response to questions over its validity is as above then.... well...

Despite what people want, science has lots of assumptions. You are trying to eliminate all of them and still have two.

Not my view. I have only one criterium, and it is proof enough of physical existence to me.

Ok. As long as you are happy. This provides little which can help advance the sum total of human knowledge and understanding.

Proof to you does not equate to proof to others though.

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

You got it. We don't attach the same meaning to verification, obviously.

Possibly. What is it in cosmology you feel isnt verified?

That the Hubble red shift is strictly a Doppler effect. The very foundation of BB theory and the backbone of GR.

It has nothing to do with GR, as it post dates the theory by about twenty years. GR is built around a steady state universe which has always existed and always will.

Let me get this straight – for my own thinking.

- 1 – you demand rigorous criteria for assuming validity (particle scattering)
- 2 – you assert that anything which cant be tested for doesn't exist
- 3 – you also assert that anything not part of a working model doesn't exist
- 4 – you agree that we can recreate the Doppler based redshift here on Earth and it is seen in our measurements of the Sun

Despite all the above, you feel it acceptable to add some previously unknown effect to account for the observed red shift in the spectra of large scale structures?

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Is that correct?

The Doppler shift is not so much based on GR as the product of several theories (including the fundamentals of EM) and experiments conducted on Earth and within the solar system.

No disputing that. Hubble red shift still not proven to be strictly Doppler based.

It is not proven to be caused by any other effect. Why add to the complexity of the model when we have one which functions and describes the observed data?

Once more, the Aether can be used as an example. You demand more rigorous proof of the cosmological red shift cause than you do to dismiss Aether. Any reason for that?

Nothing about the Doppler–esque Red Shift of light from large scale structures is contradicted by Earth based experiments. In fact, it is supported by the fact we can replicate it on Earth.

What other verification would you require?

That light photon trajectories deflected by galactic masses on their way here do not use up some energy changing direction.

An interesting one.

While the "deflection" of a photon as it travels from Large Scale Structure X to Earth is not the same as (for example) bouncing off a wall, there is some. Mostly this is (according to GR) related to the curvature of space time.

It is a given that some of the red shift is accounted for by the distance involved, but not all – which is why  $H_0$  is based on a distance to recession relationship.

In addition to this, it would imply that all photons suffer an equal proportion of direction changes based on how far away they are from Earth – independent of what masses are in the way.

Well, this is the same data which implies a cosmological red shift and you aren't happy with that.

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Not so. The same data that appears to imply a cosmological red shift.

Semantics. You can use "appears" for pretty much all physics. We can't "see" subatomic particles without specialist equipment which could be creating an illusion.

Do you have different standards of verification for ideas you agree with and ones you don't agree with?

No. The same. There is only one objective reality, as far as I know.

Yet the evidence required to dismiss the Aether is less than the evidence required to support the cosmological expansion.

We know that as temperature and pressure increase the effects of certain laws change.

Certainly not the laws that cause them.

"Laws" are concepts humans use to describe nature. Nature does not have to follow them.

Laws of sciences are always limited in their domain of applicability, if nothing else because they can only describe situations we can experience and re-create.

Gravity can be overcome by a tiny magnet,

I don't think so. When you see a tiny magnet escape the Earth on its own, give me a call.

When you attach a fridge magnet to the fridge, the magnetic interaction between them has overcome the Earth trying to pull the magnet down. I have a lot of paper clips on my desk and the tiny magnet is powerful enough to overcome gravity and lift them.

Gravity is by far the weakest of the fundamental forces.

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yet holds people to the planets surface.

I am not saying the temp and pressure dictate the law, but that our laws are based on what we have been able to experimentally create at this time.

Our laws are somehow meaningless to me. What I care about are the fundamental physical laws.

More semantics.

The fundamental physical laws are simply laws humans set out which we think accurately describe the way nature works. It is eminently possible that as we discover a new part of nature, the laws need to change, and this has been a hallmark of science.

Becoming obsessed with the current model as the only description of the universe takes us down a dead end.

I couldn't have said it better.

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.

The real physical universe doesn't. That's what we need to describe.

Probably not possible, certainly not in my lifetime.

I disagree. I think it is perfectly possible.

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We are part of the universe, we have no way to step "outside" and look in to generate the data required. Even a theory of everything would be simply a model of the universe, not the perfect description of it.

There is no need for a perfect description, only a clear understanding of the fundamental laws.

But our understanding is always limited by what we can experience. As we discover the ability to recreate (for example) higher temperature and pressures we discover that somethings behave in a manner other than expected.

Old laws of science are constantly being reviewed and updated. There is no reason to think this will ever change.

Good for you. Personally, I hope not as it will pretty much spell the end of "science."

You are quite pessimistic. I think that on the contrary, it will open up whole new fields of quite fascinating research.

How? When we have an accurate model of the universe which is valid and applicable in all domains, what else is there to research?

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.

As far as I know, we are made of the same fundamental particles as the rest of the universe and that all obey the same very simple fundamental laws.

Simple isnt the word I would use :-)

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Well, I do.

It took me years to get my head around them.

If you are talking about the theories, certainly. but the underlying laws are simple anyway.

The strong force was always something I struggled to come to terms with – for some reason. Again, in retrospect and following a decent enough set of tutors it seems the principles are simple. I would hate to have to teach the strong force to others though. (Or the weak, or gravity or EM)

I see no reason why we could not eventually clearly understand the whole sheebang.

Because we are part of it.

I don't see this as a hurdle.

But it means we can't see the whole picture. We can experimentally test and describe only that which \_we\_ can recreate and experience.

For example nature doesn't care we are limited to a four dimensional existence – there could easily be another seven dimensions curled up as string theory predicts. We have no way of knowing this, or testing for it at this time.

There is no reason to think that we will ever hit the point where we can see, experience and model all of nature.

No. What determines that it isn't there is that it is impossible to detect it.

Until the ability to detect improves I assume? Then was it always there or did it appear?

With our technology, if we have not yet detected it locally. it simply isn't there, from my viewpoint.

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Every day technology improves and detects new things. We are not at the pinnacle of technological development.

With our technology we have not detected any other reason for the cosmological red shift \_other\_ than the recession and associated Doppler effect. Yet you imply there could still be another reason.

While I agree that there probably is no Aether, that is a bold statement to make.

Well, then, trust your own judgment. Strike it off if you are convinced that it can't exist. That's what I did.

A phrase which would spell the death knell of science if it was ever widely adopted.

This, by the way, is one of the reasons we will never have a perfect description of the Universe. The Universe doesn't care what \_we\_ humans can or can't detect.

No, but I care.

So in reality, what you ask for when you ask for a complete model of the universe is a complete model of \_your\_ universe?

Or would it have always existed, yet not been needed for our models?

Same answer. File closed as far as I am concerned. Not detectable.

Not required. Not there. Non-existent.

Not currently detectable is not the same as never detectable.

Again, What we have not yet detected at the infinitesimal level with the quite adequate existing technology, simply is not there.

That's my opinion.

Yet you think an undetected effect could be the cause of the cosmological

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red shift?

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

Exactly my point. What I think is required is describing the only physical reality that exists.

Semantics. That is still a model and it is still limited by what it is possible and what it isn't possible for us to detect and determine.

Not my view.

Yet that is exactly what you said earlier on.

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

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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.

Good. Then we both agree that fundamental physical laws are universal.

Yes. It is also the basic assumption of GR.

Not if the so-called fundamental physical laws that GR rely on break down close to  $t=0$ . They can't be universal if they break down at any level.

Another trip down semantics lane.

The basic assumption of GR is that the fundamental physical laws are applied equally everywhere.

This does not carry the associated assumption that GR is a "fundamental physical law" which applies in all domains. It does however imply that all laws, approximations of the "Theory of Everything" will apply in the same set of circumstances everywhere in the universe. For example, an apple falling from a tree on a planet  $1 \times 10^{10}$  ly away will fall in accordance with Newton's gravity. This is, and has to be, the basic assumption.

No physical laws we have at the moment apply in all domains. It is reasonable to assume all are approximations of some other, more accurate, law.

As these laws function perfectly in all manner of situations on Earth we have no reason to

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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.

I don't think so. I think people should trust their common  
sense more.

I disagree. I have yet to meet anyone whose common sense was born out  
repeatedly regarding physics.

I see nothing in physical reality that makes no sense to me.

Very different from implying common sense is the basis of sound theories.  
What \_you\_ view as common sense is built upon an education which points in a  
set direction. Without that education, your "Common Sense" judgement would be  
different.

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This means, that what is viewed as common sense is simply a term used to cover what the speaker thinks should be known to all.

As an example, children often think the Sun goes round the Earth until they are taught otherwise. In adulthood, common sense "says" the Earth moves round the Sun because we have been taught so much which supports that. Common sense for some one who has had a different educational background would be radically different.

Do you imply that QCD and Quark confinement is bound by common sense? Does common sense explain why some particles have two quarks and some have three?

In fact, throughout my life, I find that reliance on "common sense" is the cause of more error and problem than anything else.

Well, some learn from errors and refine the process. Available to all, it seems to me.

Yes. It is better to teach people, than rely on common sense to come up with the answer though.

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

Do we now! We sure think we do, from what you say.

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Yes. Recession of large scale structures.

Based on the unproven assumed Doppler single cause of Hubble red shift.

Well, it is more proven than any other reason for the red shift. It seems that, as you don't like this theory (despite the common sense which supports it) you have a much higher threshold of proof than anything else.

You are happy to ignore the fact it matches models built and tested on Earth.

You are happy to ignore the lack of any reason to think of another cause and demand that some unidentified effect is taking place.

I dont see much common sense there. Generally speaking, when you explain cosmology to people – the recession of large scale structures is the one which gets the most "common sense" agreement. Yet you are against it.

What evidence do you have to suggest the model is broken?

My use of the word "forces" wasn't in the context of the fundamental forces. However, you call on some unknown aspect of the electromagnetic force when you ask for the photons to lose energy on route.

Not at all. Not some unknown aspect, simply some misunderstood aspect.

Ok. What aspect have we misunderstood?

This has been tested for and does not match the observed phenomena.

The required test has never been carried out, or else I would know about it.

I am sure you would.

Despite your demand for clear, proven, theories you have become somewhat vague and "fluffy" here.

Have I?

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Yes.

Oh yes it will. If not in your generation, then the next, or the next.

How long has your model been in the wild now?

7 years.

Ok. It is still very early days then.

I set the agenda on this one. No delays allowed. And already too late for any attempts at recuperation.

Ok. Your agenda will not get valid work accepted faster than any other.

In my view, it does ensure optimal velocity, given the circumstances.

What circumstances?

We live in the information age, when new theories are being accepted and developed faster than researchers can change their shoes and yours has spent seven years – and is still not widely known.

If your theory is sound, it will be accepted. There is no special secret involved. If it is published it will be studied, tested and validated. If it is not published, it may be read by some people and may be discussed in a few student bars.

If anything, your agenda creates the image of something which is not able to stand up to rigorous scrutiny.

The future will tell. Its being loose out there is not a matter of opinion. It is an objective reality fact.

I never said otherwise.

Are you talking about  $H_0$ ? Lambda? Cosmological expansion? Recession?

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I am talking about the main subject of this thread. The notion that the BB concept is grounded in the belief that the Hubble red shift is strictly due to Doppler shift.

The "subject" of this thread is "Quantum Mechanics: established fact?"

Yes, the concept of a  $t=0$  event, from which what we know of as the universe expanded is based on the Doppler interpretation of the red shift evinced by all large scale structures.

However, "Big Bang" theory has additional support (CMBR for example) which is in keeping with its predictions.

As a result, it is reasonable to assume that as the theory matches the data, has made testable predictions and explains the red shift data, then the theory is sound.

As more and more high energy experiments are conducted, they to are in keeping with a the requirements for the  $t=0$  event.

The BB was based on the red shift data and, in its early years may have required it, but today there is a lot more supporting data for the event.

And I am not suggesting we search for some unexplained phenomenon that we cannot create here on Earth. I suggested verifying a perfectly and very easily explainable phenomenon that can be clarified only by a very simple experiment being carried out in deep space.

Very simple 2nd thermodynamics law application.

What is the experiment then?

To send a heavy wheel deep in space, far from any large body, set it in rotation and observe if whether or not it will gradually slow down.

It seems to me that theory says that it will rotate forever. My model says it will gradually slow down and in time, completely stop rotating.

(I might be missing something here but...) Why will it rotate for ever? What suggests it will?

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As with the Aether, the model (verified from parallax, spectral analysis etc) implies there is no need to find another reason. They may be one, but the model doesn't require it.

Then the model is flawed.

All models are flawed in one respect or another.

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

???

You stated that if the model didn't require something (Aether in the example) then it didn't exist.

No, I said that since it can't be detected, then I conclude that it does not exist.

We have not detected anything causing the photons from distant objects to lose energy, other than the experimentally verified Doppler effect.

The model for cosmological expansion does not require any other activity to reduce the energy of the photons, therefore your criteria demands that no other activity exists.

Then the model for cosmological expansion is wrong, from my view point.

Well, it seems more than sound from my viewpoint.

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

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and take it  
up.

Not likely. Waste of time.

Why? What is the rush?

There is no rush. It simply is useless and only serves as focal  
point  
for futile controversy. Website publication is simply not the  
way that  
real knowledge is spread.

Ok. Largely I agree.

Well, generally speaking, very little in  
science actually gets  
"repressed."

Exactly. Nothing can. Formal publication is not required.

But, if the theory is sound, it will receive formal publication  
eventually.

Not any time soon was my conclusion. I feel this too important to be  
left to the whim of reviewers.

On the contrary. The more important it is, the more it needs to be reviewed.

What formal publication allows is the formal community  
discussing  
the issue. Not required either for spreading the ideas.

True. Ideas can spread in many forms. For an idea to gain scientific  
acceptance, though, it is slightly different.

Not my problem any more. I did what I had to do. The rest is not  
my baby.

If people can not cite the "idea" then it will be phased out of the  
consciousness eventually.

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I don't think so.

Time will tell. There are millions of un-cited theories around. I bet less than 1% of the population can think of more than a few.

If and when it gets used as a citation, the orthodox community will have been defeated in maintaining the status quo. And real research will then resume. If I am still around, I will deeply enjoy.

I have never seen the "orthodox community" in science. When I was still interested and able to go to conferences there was constant debate and very little which could be described as orthodox.

And zero progress. That's orthodoxy in full regalia.

Nonsense. There has been more progress in science in the last twenty years than in the four hundred before it.

I know of no one active in the physical sciences who is trying to maintain the status quo. (Drug reps are a different matter...) Scientific research is about finding out new things. All the students studying for their PhDs for instance need to add to the sum total of human knowledge. This is not done by re-inforcing the status quo.

That's exactly what I have been seeing happening for the past decades.

Again, I suspect you are either looking in the wrong place or simply offended that the "scientific community" don't agree with your particular world view.

No, but I can scatter against the particles that are interacting. The interaction can then be studied and ascertained. It has been long ago.

Yet this does not prove the existence of gravity. There are no known particles of gravity – some are theorised but none have been found.

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Your absolute requirement for scatterability means gravity no longer exists.

Absolutely not.

So how to explain a force which has no mediating particles and cant be "scattered" against?

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.

I don't think the "scaling" has been done correctly. No re-scaling has been done, for example, since we have found out the internal structure of nucleons. The Pioneer so-called "anomalous" acceleration is directly tied to that faulty scaling, in my view.

Ok, this isnt quite true though. The internal structure of nucleons has been determined for quite some time (and predicted for longer).

Not that long ago. Quarks up and down were detected only in the second half of the 1960's.

A lot has happened in the last forty years though. Most of current cosmology has been determined in that intervening period.

What about the internal structures changes the way things scale up?

SR was developed 100 years ago, defining rest mass based on the notion that nucleon rest mass was invariant. Never was adapted to take into account that nucleon inertia would vary with proximity of large quantities of matter due to coulomb interaction.

How does this answer the "pioneer anomaly" better than any other reason?

Simply because the effective mass of the Pioneer crafts can only be

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slightly larger in deep space than measurable at Earth's surface.

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

This is the general view. My model reveals a different picture.  
Discussed in some other thread lately, mainly with Freddifizzx and also Ken.

Ok. Do you model it as the same as on the large scale then?

In my model, there is only one scale. That of the only physically existing scatterable particles.

There is no physically existing scatterable particle of gravity.

At the particle scale, gravitational forces are almost non-existent.

The data supporting the theories remains robust though. What is there you dont agree with?

I have no specific point of disagreement. I simply refocused everything on a scatterable only particles basis. I observe the new picture. I do not systematically try to find specific faults in the existing models.

What in the picture changes?

Quite a bit. I have discussed just about every aspect of it right here over the course of the past 8 years, if you are curious.

If you have a specific question on some point and if it makes sense to me, I will give you my opinion.

Why thank you. I would hate to take up your time unnecessarily.

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What does refocussing on scatterable particles change about the accepted theories of cosmological expansion?

It just causes it to make no sense.

I think you are wrong there.

I have no idea how to make it any more specific at this time.

Me neither.

Oh well.

.