Re: Proof that macintosh is better than VMS

Source: http://unix.derkeiler.com/Newsgroups/comp.os.vms/2008−03/msg00960.html

- *From*: AEF <spamsink2001@xxxxxxxxx>
- *Date*: Thu, 20 Mar 2008 12:37:04 −0700 (PDT)

On Mar 17, 8:45 am, davi...@xxxxxxxxxxxxxxxx wrote:

> In article <4e7e482c−d37b−4084−8cec−1ce8dcc42...@xxxxxxxxxxxxxxxxxxxxxxxxxxxxx>,
> AEF <spamsink2...@xxxxxxxxx> writes:
>
> > Hello,
> >
> > Comments interspersed below. Sorry for the delay, but it took me a
> > long time to write this. I have tried to be as clear as possible while
> > still not spending too much time on it. The better thing to read is
> > Feynman's The Character of Physical Law and his Lectures on Physics
> > book.
> >
> > Abstract: I'm showing how I'm basing my convictions on not just QM,
> > but on the wave−particle duality, the de Broglie relation, the results
> > of a vast array of experiments, one of which is described here in
> > detail. Nevertheless, QM is so amazingly successful for such a huge
> > range of phenomena, that there must be something very right about it.
> > All this leads me to conclude that Nature, at the level of atoms and
> > below, is intrinsically probabilistic, even if QM is eventually
> > superseded by a better theory.
> >
> > It's a little long. Please be patient as it takes a little while to
> > explain it properly.
> >
> > Enjoy.
> >
> > AEF

> On Mar 13, 11:01 am, davi...@xxxxxxxxxxxxxxxx wrote:
>
> > In article
> > <42e3bcd3−a7d0−4fd6−badf−bc7623f68...@xxxxxxxxxxxxxxxxxxxxxxxxxxxxx>,
> > AEF <spamsink2...@xxxxxxxxx> writes:
> >
> > > On Mar 12, 8:11 am,
> > > davi...@xxxxxxxxxxxxxxxx wrote:
> > >
> > > > In article
> > > > <d605f298−85d8−491f−aeb7−3ba58aa7a...@xxxxxxxxxxxxxxxxxxxxxxxxxxx
> > > > AEF
> > > > <spamsink2...@xxxxxxxxx>
> > > > writes:
> > > >
> > > > > On Mar 11,
> > > > > 1:19 pm,
> > > > > billg...@xxxxxxxxxxx
> > > > > (Bill
> > > > > Gunshannon)
> > > > > wrote:
> > > > >
> > > > > > In
> > > > > > article
> > > > > > <ueEuesurz...@xxxxxxxxxxxxxxxxxxxxxxx>,
> > > > > > koeh...@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
> > > > > > (Bob
> > > > > > Koehler)
> > > > > > writes:
> > > > > >
> > > > > > > In
> > > > > > > article
> > > > > > > <960d254f−6ae7−4334−ab8e−e58e2b1ed...@xxxxxx
> > > > > > > Doug
> > > > > > > Phillips
> > > > > > > <dphil...@xxxxxxxxxxxx>
> > > > > > > writes:
> > > > > > >
> > > > > > > > You
> > > > > > > > are
> > > > > > > > confusing

quantum mechanics math with reality. If you mean that the mathematics of quantum mechanics is not concerned with resolving apparent randomness, then you are correct. You might want to look into the de Broglie−Bohm theory, more recently called Bohmian Mechanics.

Quantum mechanics math vs. reality? You think reality

differs?

I'll
bet
a
lot
of
people
do.
When
science
requires
faith
than
religion
in
order
to
accept
that
which
can
neither
be
observed
nor
satisfactorily
proven
I
think
more
and
more
people
will
see
the
difference.

I assume
you meant
"When
science
requires
more
faith..."

Scientists have faith in the scientific method which requires evidence. Religious people have what James Randi calls "blind faith"[1]. That makes all the difference in the world.

[1] Seehttp://www.randi.org/jr/072503.html(Mostlyagood article, but I disagree with his opinion of the Wizard of Oz.)

As far as using local hidden variables to restore determinism that only "appears" probabilistic, the experimental evidence ruling these out is more

compelling
than ever.
Many,
many
experiments
have been
done and
QM always,
always
wins.

This is a strawman since
there are non−local hidden
variable theories.

We're not
talking
about the
possibility
of
experimental
error
clouding the
results. The
skeptics
who
complained
that the
early
experiments
could still
allow local
hidden
variables
because of
events
missed by
detectors
because
said
detectors
were not
100%
efficient.
OK. But the
efficiencies
have been

greatly
improved
and the
room for
determinism
has been all
but wiped
out. Then
there is the
GHZ
paradox
which
largely
sidesteps
the issue.
There is
simply no
way to
explain the
results of
GHZ
experiments
using
local hidden
variables.

These experiments rule out
local realistic theories.
This just leaves two choices

1) non−locality

or

2) non−realism

But what about Feynman's argument?

> All these things combined (which includes
> stuff I don't have time to
> document here) leads me to believe that
> there is almost certainly no
> way out.

> > To my mind the latter
> > doesn't actually make much
> > sense. If the wave function

> What makes sense is not as important as
> experimental results. See, you
> know the drill (Beginning of Chapter 6 and
> parts of Chapter 7).

> > doesn't actually have a
> > physical existence and a
> > particle doesn't have any
> > properties until you measure
> > them then how are
> > entangled particles actually
> > linked. (If the wave function
> > does physically exist then
> > it's collapse will be
> > a non−local effect so such
> > versions of the Copenhagen
> > interpretation are
> > non−local).

> I think the realism quandary is a red herring.
> QM tells you what you
> will observe and that is what you observe.

The problem I have is that such an interpretation is just

"thats the way it is"

> which to me isn't a scientific statement. With non−local interpretations there
> is at least some possibility that in the future it might be possible to explain
> the non−locality. If you just take it thats "thats the way it is" then you are
> in effect giving up on trying to find an explanation.

I think more than non−locality is involved. There's still intrinsic probability to consider. There's also the issue of the subtle difference between locality and separability, but I have to review the Don Howard paper Einstein on Locality and Separability first. I have a barely legible .pdf of a .tif of a fax (or other scan) of it.

> > As to what's "scientific", please read Chapter 6 of The Character of Physical Law and get back to me. (Parts of Chapters 1 and 7 are also relevant.) You will find the answer to that in this book. Obviously I'm not going to quote entire chapters of the book. But I'll say this here: How does gravity work? Think about it. Any two masses, no matter how far apart, attract each other. Isn't that kind of amazing? You say there is a field that permeates all of space. Just what is this field made of and how is it generated by mass? How can it be like that? But we grow up with gravity from day 1 and it becomes so familiar we think of it as being totally normal. So what mechanism could be behind this? At the classical level, physics has indeed given up.
>
> I wasn't going to respond to this but felt I had to respond to the above.

I have no problem with you responding. If you want to continue via email, drop me a note at the spamsink2001 address. If you don't, then stop. It's up to you.

> > If by the classical level you mean excluding relativity then you are correct in the sense that noone is looking for a mechanism − but that is because Newtonian theory has been superseded.
> >
> > If however by classical level you just mean excluding QM then that is rubbish. The mechanism for Gravity is well understood − the curvature of space−time. How mass/energy causes space−time to curve is well described by GR. Why mass/energy has that effect on space−time isn't explained but undoubtedly requires a better understanding of the structure of space−time.

Well, if you insist on disagreeing to agree, that's okay. What is the

mechanism by which mass curves space−time? I meant that there will always be a level at which you will say, "Well what is that? What mechanism generates that?" Either there are an infinite number of layers, or there exists a bottom layer. Either you think it's infinite or that we simply haven't reached bottom yet. Either way, you will always be left with a mystery as to the nature of the lowest known level.

[Note that there are two possible meanings of "how" here: (1) In what manner is it curved? That's akin to asking: "What is the magnitude and direction of the force produced at this point in space by a given distribution of mass?" or, in GR terms: "What curvature is produced at this point by a given distribution of mass?" Then there's (2) "How does mass achieve this result? These are different questions. GR answers question (1), but not question (2). The "force as a result of virtual particle exchange" paradigm answers question (2), except you are then left with question (2) for that!]

> In QM, it is
> thought that it is the exchange of virtual gravitons that causes the attraction, just like it is the exchange of virtual photons that carries the electromagnetic force.

> Quantum Gravity theorems are still extremely speculative eg Loop quantum gravity, String theory. The existence/non−existence of the graviton and it's properties would help either support these speculations or refute them.
>
> The graviton does not fit into the QM standard model.

Irrelevant. It is thought by most physicists that all fundamental forces arise from the exchange of virtual particles. I don't know of any reason that the virtual−particle mechanism is restricted to the Standard Model.

Physicists are looking for real gravitons in, e.g., the LIGO expriment. If one is found, it will likely be big news (well, for physicists at least). I don't think you need a Quantum Gravity theory first. In fact, QM and GR are incompatible as is. The resolution of this, of course, is one of the greatest mysteries in physics today. The answer should prove exciting indeed!

Anyway, AFAIK, no one knows any mechanisms behind the spooky correlations we see in QM experiments, or the generation of virtual particles out of nothing (but it is known how they generate forces!). We may never know, and if you ever do, it will probably just be another layer to ask the same question about. I brought up gravity to

show that it seems normal only because we grow up with it from day 1 and we'd likely thing the same of intrinsic probability if we grew up from day 1 experiencing that.

> But these virtual photons −− or gravitons −− materialize out of nowhere, travel between particles to carry the force, and then disappear (thanks to a variation of the uncertainty principle, a violation of conservation of energy is allowed if it occurs over a short enough interval of time, and this allows virtual particles to have their fleeting existences). And you're still stuck with trying to find a mechanism for the virtual particles. Good luck. We don't grow up experiencing QM at all, so it seems really strange. But we are not to tell Nature how She's got to be. [Until we detect actual gravitons, the existence of virtual gravitons remains speculation. However, most physicists, AFAIK, believe they must exist.]
>
> So you're always going to reach a point at which you say, "But what is that? What is the mechanism behind that?" I think with QM we've hit rock bottom.

Here we disagree. Since QM is undoubtedly incomplete it is much much too early to say we have reached rock−bottom. If you give up looking for mechanisms and just accept that "that is the way it is" then you might as well join Boob and put it all down to God's mysterious actions.

Well, no need for insults! Just my opinion. You'd have to say the same about Feynman. Please. I just think it is very unlikely that a "reasonable" way will ever be found to "explain" what today appears to almost certainly be "intrinsic probability in nature". "Boob" says his stuff is 100% certain without giving any reasonable logic behind it. I give valid logic and solid scientific evidence in support of my ideas whereas "Boob" claims to do that, but as you well know, doesn't. Some things are pretty certain: There are eight "major planets" orbiting our Sun. Ordinary matter is made of atoms. Do you think these things will be superseded some day? The evidence in favor of these two things is overwhelming! I think Feynman's argument (combined with all the experimental evidence) is very compelling. I don't accept it on faith. I studied his argument and it seems quite valid to me. Sometimes you can rule things out. A theory can be proved to be wrong, but you can't prove a theory to be right. Feynman's argument falls into the former case. He rules out hidden variable theories. No, it's not at the level of a mathematics proof such as proving that the square roots of non−perfect squares are irrational numbers, or that pi is transcendental,

or that a real number squared cannot be negative, etc., but I think it's pretty damn good. Don't compare me to "Boob"! That "theory" or conjecture is without doubt easily proved false!

Did you see part 1 of the video at www.feynman.com? It's free! Let me know if you ever do. And wake me when someone gets deeper. I meant that we most likely can't go deeper to see what happens between observations. If you can know where the particle is after passing the double−slit, or beam splitter A, or what have you, it cannot contribute to an interference pattern. If you get an interference pattern, you cannot know which way the particle went because if it went only one way it couldn't contribute to an interference pattern. Even Einstein admitted that arguments like this are logically self−consistent. From Cropper's "The Quantum Physicists" when discussing the EPR paradox: "Einstein did not hesitate to say that he accepted the logical force of [Bohr's] argument and its possible validity; yet he still had reservations".

Look, this is just my opinion after years of pondering the problem and considering various experiments and reading various books and seeing how things have developed over time. We disagree. That's okay. There's no need to get all worked up about it!

> Note. All the interpretations agree on what you will observe so in that sense
> it doesn't matter. However interpretations can give insight into how to produce
> a more complete theory and as I have pointed out QM is not the final theory of
> everything.

> [I'm not basing my claims solely on QM. I still think a more accurate theory will still not be able to get rid of the intrinsic probabilistic nature of things. See below.]

> And how will you test it? As for QM being "final", I think certain aspects will survive. Note that Ehrenfest's theorem shows how quantum mechanics goes over into classical mechanics at the macroscopic level.

> Any future theory of everything will have to incorporate all the results of QM experiments at least as approximate results just as GR incorporates Newtonian theory.
> That doesn't mean that the mechanisms of the theory will necessarily be

> identical. We can see this by looking at the case of Gravity.
> In Newtonian theory gravity is a mysterious force acting at a distance.
> In GR it is the result of matter/energy curving spacetime.

But you will still have the wave−particle duality which is what causes all these problems in the first place, just like you'll still have the idea that oridnary matter is made of atoms, or are you expecting that to be superseded one day, too? And I forgot in all these discussions to mention tunneling! I think the Bohmian theory will not be able to handle that to a satisfactory degree because the particle cannot be observed within the pentrated barrier. There will be a gap in the Bohmian "path" of the particle. Einstein wrestled with tunneling, too, in the form of alpha decay. The wave function for the alpha particle grows outside the nucleus and shrinks inside until the alpha particle is observed which implies that there is no definite moment of decay independent of the measurement! (See "Albert Einstein: Philosopher−Scientist" edited by Arthur Schilpp, pp. 667ff, for Einstein's description of the problem and his views, but I wonder what Einstein would think if he were alive today to see all the knew experimental results and entanglement and such.)

If you can, in prinicple, determine the path of a particle through an interference appartus, it cannot contribute to an interference pattern and vice versa. This means you cannot predict ahead of time which path the particle will be found in when you check which path it's in. I cannot see how you can ever get around this.

If you watch part 1 of the video or read The Character of Physical Law (at least chapter 6 thereof) and let me know what you think (via email).

> Respond to this if you want but I won't be responding any further.

OK.

[...remainder of quoted post omitted as it contains nothing new...]

AEF
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