

## Re: a question on incompatibility of properties in a one particle system

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**From:** Bill Hobba ([bhobba\\_at\\_rubbish.net.au](mailto:bhobba_at_rubbish.net.au))

**Date:** 10/22/04

Date: Fri, 22 Oct 2004 10:03:21 GMT

"Bilge" <[dubious@radioactivex.lebesque-al.net](mailto:dubious@radioactivex.lebesque-al.net)> wrote in message  
news:slrncnfe6c.8l.dubious@radioactivex.lebesque-al.net...

> *Bill Hobba:*

> > *"Bilge" <dubious@radioactivex.lebesque-al.net> wrote in message*

> *[...]*

>

> > *Don't be concerned. To the best I can tell, it means that the  
quantum*

> > *mechanical description of an epr pair as a single quantum state, in  
which*

> > *the state vector contains all there is to know about the state is  
wrong*

> > *and should be replaced by a mixed state in which there is more  
information*

> > *which is simply inaccessible and the environment somehow manages to be*

> > *involved in the conspiracy. It's an elaborate and rather obtuse way  
of*

> > *saying there are hidden variables that conspire to look just like  
quantum*

> > *mechanics. I think the overall bottom line is that you can call a  
theory*

> > *deterministic by attributing the randomness to the unknowable and not*

> > *differentiating between probabilistic and statistical.*

> >

> > *BTW on another matter I must admit defeat with those lectures on QFT you*

> > *gave me the link to. I did get something out of them but its  
mathematical*

> > *complexity is beyond me; and functional analysis – especially Hilbert  
Spaces*

> > *and Distribution Theory – was what I specialized in when I was into  
math.*

>

> *As I mentioned, the material is rather dense. Since the time I mentioned*

> *the link to those lectures, the author of the lectures on renormalization*

> *(the one in which you were interested) was given a nobel prize for his*

sci.physics.relativity: Re: a question on incompatibility of properties in a one particle system

> *work in quantum field theory, so if you found things less obvious than he*  
> *did, (and a lot of the material in those volumes is like that), you have a*  
> *good reason. On the plus side, I'd say it's a rather comprehensive and*  
> *compact treatment of field theory with a good outline of string theory,*  
> *even if terse. Anytime I think it might have been more fun to have been a*  
> *theorist, I can peruse those volumes and realize I had a better aptitude*  
> *for experimental physics. People like ed witten have more mathematics*  
> *at their immediate disposal than I know exists.*

One does not win a Fields medal for no reason. And one does not decide on physics over math without reason. Asimov mentioned all but the greatest mathematicians eventually reach a point where it becomes too hard – that is when you realize either you love math for its own sake and you persevere or you go looking for something else – I went looking for something else – and never regretted it. Greats like Feynman and Witten never did reach that point of it becoming too hard – they choose physics because that is what they liked.

>  
> *As I said at the time be careful what you wish for – you may get it.*  
> *When I got Griffiths book I also got Zee's book on QFT in a Nutshell.*  
> *Its light and breezy style I find quite refreshing highly recommended*  
> *to anyone.*  
>  
> *I haven't seen either of those, but if I come across them, I'll*  
> *give them a look-through. The only book of Griffiths' that I've*  
> *seen was the E&M textbook I used as an undergraduate, which I*  
> *think is pretty good, especially for the physical intuition (although*  
> *I didn't really appreciate that fact at the time.)*

Sorry for the confusion – it is not the same Griffith's (although he also wrote a book on introductory QM). This is the Griffith that along with Gell-Mann and Hartel developed the Consistent Quantum Histories interpretation – [http://info.phys.cmu.edu/people/faculty/griffiths\\_bob/](http://info.phys.cmu.edu/people/faculty/griffiths_bob/)

Thanks  
Bill