

Re: Delayed choice experiment and interstellar signalling

Source: <http://sci.tech-archive.net/Archive/sci.space.policy/2007-03/msg00822.html>

- *From:* Willie.Mookie@xxxxxxxxxx
 - *Date:* 24 Mar 2007 10:36:45 -0700
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On Mar 22, 3:53 pm, thro...@xxxxxxxxxx (Wayne Throop) wrote:

: "Williamknowsbest" <William.M...@xxxxxxxxxx>
: That URL won't load. Like I said I find your comments confusing and
: your URL is unreadable.

The URL reads fine for me, but I can see where it might not for some newsreaders (there's no blank before the "http"). Here's that URL with the offending adjacent characters removed:

http://arxiv.org/PS_cache/quant-ph/pdf/9903/9903047.pdf

I tried it and it still won't load. The URL appears in the address line but the screen stays blank. Adobe Acrobat loaded and it hung up. I went away and got a cup of coffee. The window is still open, and the activity indicator is still working, and the window is still blank – both in the window itself and in the Adobe.

I do have Professional Edition if that means anything. I went back and checked the Adobe program just now and it said "An I/O error has occurred. The file connection has timed out."

So there you go. So much for technology.

So, if you have another solution, I am willing to listen – I would like to see what Sylvia is talking about.

Figure 2 shows exactly what Sylvia said it shows.

Ok – but that is not a description and my confusion still exists since Sylvia clearly speaks about one photon interfering with another. This doesn't make sense in the quantum world.

Re: Delayed choice experiment and interstellar signalling

The entanglement occurs after the passage through the slit.

Alright. I'll take your word for it. But in the experiments I am familiar with there is a quarter wave plate at the slits and the entanglement occurs before the slit. That is, a short wave photon is converted to two entangled longer wave photons. One of these is sent to the double slit apparatus. The other is sent to be measured to determine which slit it went through – or not.

However, it occurs adjacent to either one or another of the slits. The fringe detector can't tell which of the regions were used to do the entangling, but the other, remote detector, can. If the remote detector discovers which slit was used for the entanglement, the fringe doesn't appear, but if it doesn't, the fringes do appear. Note that in the experiment as set up, this is only apparent after you compare events from all the detectors, because you don't know whether the delayed detectors figured out the origin of the entanglement or not (the photons having passed through a half-silvered mirror, and you don't know afterwards which events that occurred for).

Since I don't have access to your image, I can't say anything useful.

Whether the experiment can be set up to signal is unclear to me. As it is described in the paper, it doesn't appear so, because you can only detect these remarkable effects only by comparing all the coincidence data from all the detectors.

Well lets look at another reference I can look up and discuss this using a reference we both can look at

http://www.bottomlayer.com/bottom/basic_delayed_choice.htm

Note that IF the experiment can be set up to signal, I see nothing that prevents constructing a reply that gets back before the signal is sent. "Take that, causality!"

Yes, this was the whole point of Wheeler's thought experiment. The double slit caused by the gravity lensing of a distant galaxy of a photon that is emitted by even a MORE distant galaxy.

Re: Delayed choice experiment and interstellar signalling

Check out the section, does our choice change the past? It does.

And this experimental result

<http://www.sciencemag.org/cgi/content/abstract/315/5814/966?etoc>

And because it does, then an experimental setup can signal along the null surface the photon travels to communicate with the senders of the photon.

Wayne Throop thro...@xxxxxxxx <http://sheol.org/throopw>