Re: Twin paradox revisited ll

Source: http://sci.tech−archive.net/Archive/sci.physics.relativity/2007−07/msg03219.html

- *From*: bill <cosmosco@xxxxxxxxxxxxxxx>
- *Date*: Sun, 29 Jul 2007 20:53:40 −0700

On Jul 30, 12:02 pm, "papar...@xxxxxxxxx" <papar...@xxxxxxxxx> wrote:

> On 29 jul, 20:07, bill <cosmo...@xxxxxxxxxxxxxxx> wrote:
>
> > On Jul 30, 4:03 am, Mike Fontenot <mlf...@xxxxxxxxxxx> wrote:
> >
> > > bill wrote:
> > >
> > > > There seems to be a discrepancy in your
> > > > article at http://home.comcast.net/~mlfasf.
> > >
> > > > In paragraph 4 you have the traveler
> > > > accelerating away from the earth
> > > > at 1g for a period of two years his time then
> > > > coasting for 9 years.
> > >
> > > > In paragraph 5 he accelerates at −1g for two
> > > > years [...]
> > >
> > > You apparently misread the 5th paragraph...it actually says
> > > that
> > > he accelerates at −1g for 3 years, not 2. When he starts that
> > > acceleration, his speed is 0.968c (moving away from his
> > > twin).
> > > When he finishes that acceleration, his speed is −0.774c
> > > (moving

toward his twin).

Mike Fontenot

> Thank you, I did make that mistake − reading 2 years ilo the 3 years you specified.
>
> Bill

I think the main interpretation problem in this topic, is the fact that every observer (both twins and possibly an external observer) will have knowledge of what is going on the travel, only by his local information (clocks) and by the outside information he is receiving at Earth or at the ship (like radio messages or position of guiding stars). This received information can only travel from its source at c, since c is the maximum interaction propagation speed.

So the total trip look like this. Let us assume Twin A is staying home, and Twin B is traveling to a star located 6 light years away, at a speed v=0.6c. Every birthday, each twin sends a message to his brother. The only information each has is his local time for the sending of the message and his local time for the reception of his twin message.

a) Twin B will travel, according to twin A, for 10 years before reaching the star. In his local clock, this travel time will only measure 8 years (due to time dilation).
b) Acceleration need not to be considered, since the acceleration period is short with respect to the distance to be covered (at 2g, 4 months will make the ship to reach 0.6c).
c) At the 1st, 2nd, 3rd, 4th anniversary, twin A messages will have to catch the traveling ship, the information will reach twin B at 2, 4, 6 and 8 years of his local clock. The last message will reach twin B just as he is arriving to the destination star.
d) At his own 1st, 2nd, 3rd and 4th anniversaries, twin B will send back to Earth his messages. These messages will reach twin A in his own local time at 2, 4, 6 and 8 years. Twin B 5th to 8th messages will be received by twin A at 10 to 16 years of his local clock.

So we see up to this point that the situation is quite symmetric, with both twins seeing the other as "younger", according to received messages.

e) Direction of travel changes and ship returns to Earth. Trip will

> last 10 years, according to twin A, but only 8 years, according to twin B.
> f) Messages from twin A now arrive more frequently to the ship. So messages from 5th up to 20th anniversaries will be received at twin B location at 8.5, 9, 9.5 and so on to 16 years of his local clock.
> g) Messages from twin B, on his way back to Earth, also arrive more frequently to twin A. Thus twin B messages 9th, 10th up to 16th anniversaries will be received at twin A location at 16.5, 17, and up to 20 years of his local clock.
>
> Again the situation is quite symmetric, but at the end twin B's clock is showing 16 years has passed, while twin A's clock is showing 20 years has passed.
>
> Miguel Rios

You are missing the point of my original posting which was that in the correspondence 10 years ago and now in Mike's posting the traveler determines that his twin appears to be aging at a slower rate than he is thus he concludes that this is *physically, meaningfully, really* taking place; that as Mike points out − when the traveler accelerates during his return trip his sister's aging rate is *reversed*.

In accordance with that concept − the traveler truly believes that during his period of acceleration the earth is *physically* spinning backwards and is orbiting the sun in the opposite direction; that millions of people have come back to life all because he has hit the gas pedal.

This must give the traveler a *real* power of Godlike omnipotence − the power of life over death and the ability to eliminate millions of people by making them go back into the womb and to negate their conception.

He can also 'cause' the galaxy to spin in the opposite direction; reverse its direction of travel toward Virgo and bring about the creation and destruction of millions of planets and stars.

One response to this discussion was that the traveler's actions − his direction or rate of travel and his pressure upon, or release of, the gas pedal − can have *no* physical effect on the earth or his sister or on every galaxy in the entire universe and I tend to agree.

Any 'law' that insists otherwise is asinine.

The traveler is sitting in his ship on the launch pad. He hears the command 'ignition'. He sees voluminous clouds of smoke and flames and feels himself being pushed back into his seat. He continues to accelerate and, as he does so, he sees, out his front window, that section of the universe *appearing* to accelerate toward him and, via

his rear−view mirror, the rest of the universe, including the earth, *appearing* to accelerate away from him.

He takes his foot off the gas pedal and at that very instant, according to some posters, he is of the opinion that he is no longer moving but that he is at rest and it is the universe that is moving past him!

In the nanosecond prior to his taking his foot off the gas pedal he sees what had appeared, prior to take off, a seemingly 'fixed' firmament *appearing* to be flashing past him at close to the speed of light and although he *knows*, having experienced a tremendous force of acceleration during take off, that prior to removing his foot from the gas pedal *he* was moving but a nanosecond later insists that he is *not* moving?

In that previous nanosecond he was conducting an internal dynamic experiment which proved, as he suspected, that his was *not* an inertial reference frame − that his ship was in fact accelerating but a fraction of a second later he concludes that, irrespective of that period of acceleration, he has come to a stop?

If, as some people suggest, he is of the opinion that he does not start moving following ignition but that it is the earth that is dropping away from him he would be fully justified in screaming that the sky is falling.

Why do some people continue to insist that the traveler cannot apply logic and realise that millions of people are not coming out of the grave? That he does *not* possess the power of life over death either for people back on the planet or the stars themselves?

I am of the opinion that this is what they were taught and, in accordance with that 'education' system, have lost, or never possessed, the ability to be able to think for themselves.

In response to one of my postings a Professor of Physics at a major Asian University wrote that whilst he could not agree with the argument I had put forward at least it had made him *think*. What more could one ask?

Bill

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