Re: twin patadox question

Source: http://sci.tech−archive.net/Archive/sci.physics.relativity/2005−09/msg00166.html

- *From*: "PD" <TheDraperFamily@xxxxxxxxx>
- *Date*: 2 Sep 2005 06:24:24 −0700

TomGee wrote:
> PD wrote:
> > TomGee wrote:
> > > PD wrote:
> > > > TomGee wrote:
> > > > > Harry wrote:
> > > > > > <slefkowit@xxxxxxx> wrote in message
> > > > > > news:1125333294.553585.309380@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
> > > > > > > The usual explanation (as I understand it) as to why the twin paradox
> > > > > > > is not really a paradox is that one twin experiences acceleration and
> > > > > > > the other doesn't.
> > > > > > >
> > > > > > − It's by definition really a paradox. Dictionary.com, paradox:
> > > > > > 1. A seemingly contradictory statement that may nonetheless be true.
> > > > > >
> > > > > > Thus, it doesn't matter if it is true or not to be called a paradox. And
> > > > > > what do you think *is* the twin paradox?
> > > > > >
> > > > > >
> > > > > Assuming I have the right to enter this conversation at this point and
> > > > > offer my opinion of what the TP is, I will.
> > > > >
> > > > Assuming that I have the right to respond to your ragged entry into the
> > > > conversation, I will.
> > > >
> > > >
> > > > I think you all make the TP much more than what it is. It's a paradox,
> > > > alright, but it is a paradox only because SR shows results which can
> > > > only be described as a paradox. There it ends the experiment; it makes
> > > > only one conclusion and that is that one twin aged more than the other.
> > > > SR does not try to explain why that happened, it simply claims it does
> > > > happen.
> > > >
> > > Quite the contrary. I do recommend an excellent book on SR called
> > > "Spacetime Physics" by Taylor and Wheeler, which explains in exquisite
> > > detail the Twin "Paradox". It probably costs no more than Encarta in
> > > terms of wallet, though it will cost a little more of your time.
> > >

> > > > The twin paradox is only a paradox if one uses a naive understanding of
> > > > SR, namely the one that simply states "moving clocks run slow".
> > > >
> > > >
> > > That may be the way you undestand SR, but to me that is now and always
> > > has an incomplete statement. "Moving clocks" run slow only when
> > > compared to slower−moving clocks. That is the resolution of SR's TP.
> >
> > That is still a naive statement and, furthermore, wrong.
> >
> >
> You have said that twice now without any support for it so that makes
> it your own personal opinion. It is not naive nor is it wrong.

Just because I refuse to transcribe here (which would be a copyright violation) the content from the reference cited above, does not mean that it is not without support. The fact that you will not read the reference does not mean that it is without support. The fact that you will not look at evidence that your statement is naive and wrong does not mean that it is not naive and wrong. I could tell you 1+1=2 all day long and you could still tell me it is my opinion without support. Amuse yourself, inflate yourself, befuddle yourself −− heaven help you if you should educate yourself.

> > > >
> > > >
> > > > A more
> > > > careful use of the principles of SR, starting with a more fundamental
> > > > understanding than what is afforded in the quoted sound−bite,
> > > > completely resolves the twin paradox, which is *exactly* why it is
> > > > often used as a teaching example to get students to move beyond the
> > > > sound−bite understanding of SR.
> > > >
> > > >
> > > "Sound bite"? Is that a scientific term?
> >
> > No, it is unscientific, which is precisely my point. Time to get off a
> > sound−bit understanding, Tom.
> >
> > > >
> > > You mean get on a personal opinion basis?

You mean you're not ON a personal opinion basis? What physical evidence do you have that your model is correct and the conventional model is wrong? Where is the point where your model produces predictions that the conventional model does not, and therefore is a testable experiment to validate your model?

> >
> > > > >
> > > > > >From there, everyone has argued every aspect of that claim and has

> > > > > tried to explain away the paradox. Myself included, in my model of the
> > > > > universe, which I have posted piecemeal in these sci.ngs for years now.
> > > > > I have even shown a different experiment which better explains the
> > > > > paradox, and I have endeavored to explain it away with my claim that
> > > > > time is a property of motion and that it passes for discrete objects in
> > > > > accordance with their states of motion.
> > > > >
> > > > > My conclusion takes the result of the TP and develops the conclusion
> > > > > that the time rate for one twin varies from the other during the trip
> > > > > because of their states of motion which changed during the experiment
> > > > > out and back because to go away from Earth and then to return to it
> > > > > requires that the spaceship go faster than the planet during the trip.
> > > >
> > > > Faster with respect to what?
> > > >
> > > >
> > > I SAID faster than the planet. What part of that did you
> > > miscomprehend?
> >
> > Where the velocities of the earth and the spaceship are measured with
> > respect to what reference point? What part of that did you
> > miscomprehend?
> >
> >
> So each time I answer one of your questions, you add a few more words
> to it and ask it again? Then you answer my question by repeating it?
> The fact is, you don't even know how to ask a question properly. Your
> questions are silly at first, then you have to add more to them to make
> them sound reasonable. Now repeat after me: If someone says, "faster
> than the planet", that means wrt the planet. That means the planet is
> the reference point, so you have no reason except stupidity to ask,
> "with respect to what reference point?"

And that is completely incoherent. My point is this: How do you *know*
if something is moving faster than the planet if you don't know how
fast (or what direction) the planet is moving? See the example below
(which you rudely snipped).

> > > >
> > > >
> > > > You know that the tangential orbital speed
> > > > of the Earth around the Sun is about 67,000 mph, don't you? So if the
> > > > spaceship is returning to Earth, head−on in the same road that the
> > > > Earth is taking around the Sun, is it traveling faster or slower than
> > > > the Earth?

Still haven't answered this, Tom.

> >
> > If that one's too hard,
> >

> >
> It's not too hard, it's just too stupid.

If it's not hard, answer it, and then we'll move on to a harder example. Here, since you rudely snipped it, I'll reclip it here for you to answer.
==========
If that one's too hard, let's take a more bonehead case to see if it helps you grasp the above question.
Let's take a truck (a Czech model call the Urth) and have it rolling on

a highway at 60 mph. Now, a motorcycle (also Czech, called the Spach Tzip) rolls off the front of the truck and heads down the highway at 90

mph in the same direction as the truck, so that it has a *relative* velocity of 30 mph with respect to the truck. At some point down the road, it turns around and heads back toward the truck so that it again has a relative velocity of 30 mph with respect to the truck, but now approaching the truck. Now, while the motorcycle is on its return trip,

is it moving faster or slower than the truck?

Now note in this example that the relative velocity of the truck and the motorcycle is 30 mph always (part of the trip separating, part of the trip approaching), which is a context identical to the twin paradox.
==========
You'll not the last sentence, which points out why it is not only not stupid, but relevant. Answer the question, Tom.

> >
> >
> SNIP another stupid example.
> >
> >
> > > And what if it isn't returning in the orbit of the planet?
> >
> > That's not the question. What if it IS returning in the orbit of the
> > planet?
> >
> >
> Well, it's my turn to ask you a question, and that's my question.
> Answer it.

I asked first, and you haven't answered it.

> >
> >
> > > If the
> > > astronnaut leaves the region encompassed by the Earth's orbit, it must
> > > speed up to return during the time when his twin is still alive, as the

> > > experiment dictates.
> >
> > I see *nothing* in the gedanken experiment that says that the spaceship
> > has to leave and return along a line that is not tangent to the orbit.
> >
> >
> To see *anything* in it you first have to understand it, and obviously
> you don't.
>
> The experiment says nothing about a whole lot of things, so are you
> saying that whatever it says nothing about must be considered as part
> of it? I'm ROTFLOL so hard my ribs hurt!! What a gross ass you make
> of yourself, fool.

Not at all. I'm saying that you cannot impose restrictions on the
motion that are not implied in the example. You are implying that the
paradox as posed *must* mean that the spaceship *must* be flying faster
thant the earth in both legs of the trip, and I am pointing out to you
that, in a case that is perfectly allowed by the twin paradox, this is
not the case. The fact that it might be so in one case of your
imagining does not make the the resolution of the paradox because the
setting makes no such stipulation. And indeed, SR provides the
resolution of the paradox for *all* orientiations of travel.

> >
> >
> > Where did you make that up from? So, in your mind, the twin only
> > returns younger if it heads away from the sun? Where does it say that?
> >
> >
> I knew sooner than later you would return to your lying ways. You're
> the one that made all that up in trying to escape from the cage you
> have built for yourself.

SR says the twin returns younger if it returns along the tangent of the
orbit, as well as any other path. It makes *no* special requirement
about the direction of the path of the spaceship. So, in the case of
the spaceship returning along the tangent of the orbit, as I posed it
above, how do YOU resolve the twin paradox, Tom?

> >
> >
> > > The ship can travel at the same speed as the
> > > Earth and return, but then the time difference will be much less as it
> > > will cover only the faster speed of the escape velocity. If it travels
> > > slower than the Earth to return back to it, it could be that the
> > > astonaut twin will be older than his twin instead, depending on how
> > > slow it moves getting back.
> >
> > And this is counter to SR and counter to experiment. Nice job, Tom.
> >

> >
> Another wild opinion with no support for it. Bad job, PD.

No, repeat no, experiment has ever shown a relatively moving clock to return "older" than a twin clock. Counter to experiment, Tom. Counter to SR, Tom.

> > > >
> > > > > >
> > > > > > − "experience of acceleration" is indeed not the issue, and anyway
> > > > > > irrelevant for calculation for acceleration has no relativistic effect on
> > > > > > clock rate. See below.
> > > > > > >
> > > > > > >
> > > > > > I agree, of course.
> > > > > > >
> > > > > > >
> > > > > > > > Consider the following example:
> > > > > > > > spaceship 1 is statinonary
> > > > > > > >
> > > > > > > > spaceship 2 accelerated to .99c before we began this experiment. It
> > > > > > > > passes spaceship 1 and they synchronize their clocks at time 0. It
> > > > > > > > travels 10 light years (as measured by spaceship 1).
> > > > > > > >
> > > > > > > > spaceship 3 has also accerated to .99c before we began the experiment
> > > > > > > > and is travelling in the opposite direction from spaceship 2. At the 10
> > > > > > > > light year mark (as measured by spaceship 1), '2' and '3' cross paths
> > > > > > > > and '2' tells '3' what time it is. '3' continues on, passes '1' and
> > > > > > > > reports the time at which it passed '2'. What time does '3' report to
> > > > > > > > '1'?
> > > > > > > >
> > > > > > > > Time dilation (if I calculate correctly) would say '2' should have
> > > > > > > > recorded about 1.4 years at the 10 light year mark. But without
> > > > > > > > acceleration, '1' and '2' would appear to be in symmetric situations,
> > > > > > > > so that '2' should also think about 10 years passed.
> > > > > > > >
> > > > > > > > What is the correct calculation?
> > > > > > > >
> > > > > > > > The correct calculation method you can find online by Einstein in 1905,
> > > > > > > > paragraph 4 :
> > > > > > > >
> > > > > > > > " If one of two synchronous clocks at A is moved in a closed curve with
> > > > > > > > constant velocity until it returns to A, the journey lasting t seconds, then
> > > > > > > > by the clock which has remained at rest the travelled clock on its arrival
> > > > > > > > at A will be 1/2tv^2/c^2 second slow. "
> > > > > > > > http://www.fourmilab.com/etexts/einstein/specrel/www/
> > > > > > > >
> > > > > > > >
> > > > > > > I would agree except with his statement of "constant velocity".
> > > > > > > Perhaps it meant something different then, but today it means "wrt to
> > > > > > > another object moving at the same speed and direction". If my claim is

> > > > > correct, moving B away from A at constant velocity in a closed curve
> > > > > will result in no time dilation between between the two clocks. The
> > > > > reason why is because the time rates of the twins upon separation
> > > > > remained the same throughout the trip.
> > > > >
> > > > > As I explained it, the astronaut twin has to have accelerated to escape
> > > > > velocity in order to leave the planet, and that of course means it has
> > > > > to increase its speed above that of the Earth's speed. Plus, in order
> > > > > to catch up with the planet again later, it has to have moved faster
> > > > > then as well.
> > > >
> > > > See above.
> > > >
> > > > > >
> > > > > >
> > > > > > BTW, that 1905 calculation of the two identical clocks (later twins) was the
> > > > > > first.
> > > > > > The correct way to calculate such problems was never an issue: you'll get
> > > > > > consistent results when you stick to a single inertial system of
> > > > > > coordinates. '1' and '2' didn't do so, thus '2' should have made a
> > > > > > correction because of "frame jumping".
> > > > > >
> > > > > >
> > > > > Let's say we have two inertial coordinate systems in one FoR and two
> > > > > others in an second FoR. They are separate FoRs so long as you keep
> > > > > one from including any space or objects from the other. Immediately
> > > > > upon mixing anything from one to the other, they are no longer separate
> > > > > FoR, but a single one. Thus, there can be no such thing as
> > > > > "frame−jumping", in my opinion, except in error, and so, that is not an
> > > > > issue in the TP.
> > > >
> > > > Your lack of understanding of what a FoR is, is profound and pervasive.
> > > >
> > > >
> > > Pot. Kettle. Black.
> > > >
> > > >
> > > > Consider a car that is rolling through an intersection with a stop
> > > > sign, with Bill driving the car and Betty leaning against the
> > > > stop−sign. (Betty is a hooker.)
> > > >
> > > >
> > > I hope your comprehension problems are not due to your being hard up.
> > > >
> > > >
> > > > There is a FoR that is moving along
> > > > with the car, in which the car and Bill are stationary and Betty and
> > > > the stop sign are moving.
> > > >
> > > >
> > > Bill is in a moving car and Betty and a stop sign are moving? That

> > > makes sense to you?
> >
> > Absolutely. In Bill's frame of reference, the stop sign and Betty are
> > moving backwards.
> >
> >
> When did you say that? Do you imagine you said that? You didn't. You
> said two things: Bill is in a moving car, and also that Betty and the
> sign are moving backwards. Are we supposed to guess that you meant to
> say, "In Bill's FoR, Betty et al are moving backwards"? Or were you
> trying to show off that you know what everyone else already knows, that
> in Bill's FoR it can be said that Betty et al are moving backwards?

OK, so look above where I explicitly said: There is a FoR that is
moving along with the car, in which the car and Bill are stationary and
Betty and the stop sign are moving.

So you have a problem understanding that in this FoR, Bill is not
moving and Betty is moving?

No, I did not *imagine* I said that. I checked. I really did say that.
And yes, you do have a comprehension problem.

>
> Actually, that's not correct in the above situation because the car is
> moving wrt to the ground which is stationary wrt to the car. I don't
> expect you to understand that either, I'm sure it's too deep for you.

The ground is stationary with respect to the car? Certainly not. The
ground is moving with respect to the car. The ground is stationary with
respect to the stop sign (the two are not separating). You apparently
don't understand the meaning of "moving with respect to" and
"stationary with respect to". You apparently think that "stationary
with respect to" means something to the effect of "more stationary
than".

Furthermore, it's wrong, plain wrong. What makes you think the ground
is stationary? The ground is traveling from west to east at 1000 mph.
If the car is traveling to the west, then it is in fact "more
stationary than" the ground! See if you can get your little mind around
that concept.

But wait, there's more! The earth's counter−clockwise orbital speed
around the sun is 67,000 mph. So if we're talking about Bill and Betty
passing at noon, the ground is traveling *against* this
counter−clockwise motion (you may need one of those solar system models
with cranks and gears to see this, Tom) and so it is "more stationary"
than the center of the earth. But if we're talking about Bill and Betty
at midnight, the ground is traveling *with* this counter−clockwise
motion and so it is "less stationary" than the center of the earth.

But wait! The sun and the whole solar system are traveling about the
center of the galaxy at... oh, it hurts the head to imagine it all. How
will I *ever* know what is traveling faster than what?

Where is your *REFERENCE POINT*, Tom? What is stationary and what is
not? If you think your chair is stationary, then you have not
understood a single page, a single line, a single word of special
relativity.

> >
> >
> > You must be assuming that you can tell which one is moving and which
> > one is not. So tell me, which one of these is moving? (Before you
> > answer that, be sure you consider the reference point that you think is
> > absolutely at rest.)
> >
> >
> Yas, it's way too deep for you to comprehend, obviously.

Obviously.

> > > >
> > > >
> > > > There is a FoR that is moving along with the
> > > > stop sign, in which the stop sign and Betty are stationary and Bill and
> > > > the car are moving. Bill, Betty, the stop sign and the car are all
> > > > objects that exist in *both* FoRs.
> > > >
> > > >
> > > I thought I had taught you better than that, and I did, but your
> > > comprehension problem is obviously deeper than I thought. You are
> > > still confused about FoRs, but maybe this will help. You can have your
> > > two FoRs even if Bill is leaning out the window kissing Betty as she
> > > moves by. In fact, FoRs are imaginary and so you can make up any you
> > > wish. But you cannot use any you wish to use without making them into
> > > a single FoR!
> >
> > Kiss, schmiss. Bill would have to pay extra to kiss.
> >
> >
> Good lord, if masturbation doesn't help, find someone with similar
> needs.
> >
> >
> > There are a multitude of reference frames in which all four of these
> > objects live. There is a reference frame moving at 550 mph with respect
> > to the stop sign (in which a pilot overhead happens to be at rest), and
> > Bill and Betty and the stop sign and the car are all moving in that
> > one.
> >
> >

> No, sorry. FoRs exist only in our minds. That explains why there are
> a multitude of them, as you put it. If there is anything which is
> infinite, it is probably FoRs.

Indeed, this is right. And just a moment ago, you said there were two before Betty and Bill made contact, one when they made contact, and two when they separated. Oh, I see! You must think that a FoR must be tied to a human being, and that every human being has one that's parked atop his/her head! And that if there is no human being in the FoR, then it's not an FoR! Oh, ho ho ha ha hee hee, oh my sides hurt. So this is what comes from attempting to learn physics from Encarta!

> In our minds, we can make up any number
> we want of FoRs. Try to get through your muddled mind just what a FoR
> is. There are many like you who think they know, but they know it only
> the same way you do, incorrectly.

Oh, ho ho ha ha hee hee. Stop, Tom! I can't take it any more, I've got tears running down my cheeks.

> >
> > >
> > > If you have Bill leaning out kissing Betty, the two FoRs become one
> > > because you are using Bill to kiss Betty. Let's say Bill is moving in
> > > his car and as he passes Betty he sticks out his hand and slaps her in
> > > the face. As he approaches Betty, he and Betty can be in the same
> > > frame or in two different frames. At the point where his hand makes
> > > contact with her face, they are in the same frame of reference. As his
> > > hand leaves her face, you can say they are in two separate FoRs if you
> > > want to and for whatever reason. Understand?
> >
> > You clearly have no understanding of what a frame of reference is. I
> > suggest you do some reading in Encarta on the subject. Failing that,
> > you can try this one:
> > http://en.wikipedia.org/wiki/Frame_of_reference
> >
> >
> Wikipidi is the online ref. work which can be edited by anyone, right,
> no matter how much or how little they know about a topic?

Quite right. Buy a book.

PD

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- ***Follow−Ups***:
  - ***Re: twin patadox question***

◊ *From:* TomGee

- ***References***:
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    - ◊ *From:* PD
  - ♦ ***Re: twin patadox question***
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    - ◊ *From:* PD
  - ♦ ***Re: twin patadox question***
    - ◊ *From:* TomGee

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