THE PROBLEM OF THE SPEED OF LIGHT

The daring assertion that one can never observe velocities larger than the velocity of light contains a hypothetical restriction of what is accessible to us, one which cannot be accepted without some reservation.

Hendrik Lorentz (1913)

Even today we have no deep explanation of why the speed of light is constant.

Jay Kennedy (2003)

The speed of light now takes the two of us right back to where this started. Well, at least it's where the twentieth-century-revolution story started. As even he knows, nothing can go faster than the speed of light. And this time what he knows is roughly right. It makes no difference if the source moves toward or away from the detector, or if the detector moves toward or from the light. Even if they move at near light-speed the measured speed of light remains the same.

There are basically three ways to get a constant speed for light. One way is to measure it. That's what Michelson and Morley do in 1887. It's their failure to find any change that sets a physics fox among the cosmologic chickens. Another way is to assume it. That's what Einstein (who's an even swifter fox) soon does. The third way is to explain *why* the speed of light is constant. That's what, as Kennedy remarks, no one has done.

Some think Einstein showed the speed of light is constant. It's true that SR math can calculate the speed of light arriving in an apparatus. And, no matter how the apparatus moves, the math spits out the constant speed of light. But the reason is: SR *assumes* that it is constant. Math echoes the assumption. It explains nothing.

SR's emphasis on *c* seems to me to need an explanation: What's light got to do with all this anyway? On the surface there's an easy answer: Spacetime replaces time with a spacelike dimension—time multiplied by the speed of light. It sounds as if it must mean something. I hit the books again in search of reasons and again they tell me that it works but do not tell me why.

Then I stumble on the fact that light-speed *isn't* constant. The constant is the speed of light in space. Media like air or glass make light go slower. Recent quantum trickery stops light in its tracks; then, unleashed, it springs forth as if it

never was held up.

It seems to me the constancy of light's speed isn't quite a property of light. If he thinks, he'll want to think about my clued-in question: It's a property of what?

I leave a kinder, gentler version on his desk and take off for the beach.