

SIMULTANEITY IN SPECIAL RELATIVITY - 3

by

[Ardeshir Mehta](#)

Ottawa, Canada

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RELATIVITY claims that if two events are simultaneous in an inertial frame of reference, then they cannot be simultaneous in *another* inertial frame of reference which is moving uniformly and rectilinearly at a velocity v relative to the first inertial frame of reference. But a simple thought-experiment, as outlined below, is sufficient to refute Relativity's claims in this regard.

Suppose Klingons and Vulcans do exist, and on their home worlds — which we shall assume are in high-speed relative motion to each other, and to the Earth as well — there are clocks for measuring time, even though their units of time are different from ours. So when our Master Clock **C** at Greenwich, England, shows a time instant t for us today, the Klingon Master Clock, which we shall call **K**, must surely indicate *some* unique time in Klingon units. This time instant we shall call k . And likewise, when it's time instant t for us by our Master Clock at Greenwich, the Vulcan Master Clock, which we shall call **V**, must indicate *some* unique time in Vulcan units: and we shall call that time instant v . So to us, the instant t indicated by our clock **C** is simultaneous to the reading k by the Klingon clock **K** ... which means that to the Klingons too, their reading k on their clock **K** is simultaneous with *our* reading of t . (Simultaneity, after all, works in *both* directions — *i.e.*, if for us humans, an event E_1 in our world is simultaneous with an event E_2 in the Klingon world, the two events must also be simultaneous for the Klingons: which is to say, basically, that the time interval between E_1 and E_2 must be zero for both us and the Klingons, at least up to the limits of the accuracy of the available measuring instruments on each side ... for even if there *is* such a thing as time dilation, zero dilated by any amount is still zero!)

And for the same reason, since to us, our reading of t on our clock **C** is simultaneous with the reading v on the Vulcan clock **V**, this means that to the Vulcans too, *their* reading v on their clock **V** must be simultaneous with *our* reading of t on our clock **C**.

But then v and k must be simultaneous for the Vulcans and the Klingons too; for if not, at least one of these two readings would *not* be simultaneous with our human reading t ! That is, if for the Vulcans, say, the interval between v and k were a non-zero amount of time T' , then this T' would correspond to a non-zero duration T by our clock **C**: which contradicts the earlier statement we made that for us Earthlings, the interval between v and t is zero, and so is the interval between k and t — which means that the time interval T , for *us*, between k and v must be zero. (Again, zero dilated by any amount can only be *zero*, and can never be non-zero.)

This proves that what's simultaneous for one must be simultaneous for all.

Any comments? [e-mail me](#).