

# Review of: "Dingle's "Clock Paradox" Short Disproof"

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Potential competing interests: No potential competing interests to declare.

## Review of Adrian Sfarti's papeper titled "Dingle's "Clock Paradox" Disproof" by J. N. Percival)

In Einstein's 1905 paper Einstein, right after deriving the time dilation equation, claimed that a (peculiar) consequence of that equation was that if two identical clocks were at rest together and one clock then made a round trip and returned to the "stay-at-home" clock, the "traveling" clock would have accumulated less proper time than the "stay-at-home" clock. This claim was initially questioned by most as his peers could not see how an inherently symmetric cause (i.e., the time dilation equation) could yield an asymmetric result, namely, the alleged net proper time difference. Thus, initially, this puzzle was called "The Clock Paradox" – in 1911, Langevin replaced the clocks with identical twins and it was renamed The Twin Paradox. In fact, explicitly confirms Dingle's argument when he refers to SR's time dilation as a "mutual effect" as that effect is a function of RELATIVE velocity, hence, that rebuts Einstein's use of time dilation from just one twin to predict a difference in the net proper time difference!

Thus, as Dingle made abundantly clear in his book, Science At The Crossroads, the paradox was how could the time dilation equation with the key variable being RELATIVE velocity explain how the traveling clock could accumulate less **proper time** than the "stay-at-home" clock as proper time for both clocks, by definition, is absolute and observer independent.

However, what the author of the paper deals with is "observed time" and NOT proper time. For example, the author's "resolution" states "Therefore, clock A is **seen by observer B** (from his location  $x'$ ) to have the period:" and "Therefore, clock B is seen by observer A (from his location  $xx$ ) to have the period:". This would be a valid defense of Einstein if Einstein had just claimed that both observers **observed the other's clock as running slow**, but that was NOT what Einstein claimed and that was NOT what Dingle's rebuttal was rebutting. Instead, Dingle was arguing that it was illogical to claim that the symmetric time dilation equation explained why the traveling clock accumulated less proper time during the round trip than the stay-at-home clock.

Thus, the paper's "Resolution" basically showed that there would be no paradox, if Einstein had just claimed that both observers just observed the other's clock as running slow. That is a correct conclusion, however, that is NOT the issue of the Twin Paradox nor is it relevant to Dingle's rebuttal of the key issue in the Twin Paradox.