Fundamental Error Behind Time Dilation

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The ether wind can be blowing inside the wave fronts of light. This means that light does not always move transverse to wave fronts. The ether wind, v, caused by planetary rotation is about 10^{-6} times c. Therefore, the difference between total motion, according to the vector sum, **c**+**v**, and the normal to the wave front, **c**, in most cases can be ignored. However, when we regard Michelson-Morley's tests this small angle, 10^{-6} radians, becomes important. We will later see that relevant light description in relation to Michelson-Morley test is $\mathbf{c}(1+v_L/c)$ with v_L as longitudinal component in the ether wind.

Based on Huygens's principle we can conclude that light moving between 2 points on different sides of a refracting surface always takes the path that minimizes consumption of time. From the same principle we also can see, in a resonator, that wave fronts consuming least amounts of time have priority. This means that standing waves in a resonator *always* have wave fronts parallel to the mirrors. So, these wave fronts become amplified by the resonators Q-value (about 10^2).

In Michelson-Morley's original tests a light source of finite size was used. So, a specific beam width produced many wave fronts. This beam width is much larger than the effect (about 10^{-6} radians) produced by a moving beam splitter. Therefore, there will always be some wave front, parallel to mirrors, that can be amplified by the Q-value. A sometimes-stated effect of the beam splitter (explaining wave front tilting) does therefore not exist. Another wrong idea states that light must move with **c**+**v** orthogonal to mirrors in order to stay for a very long time inside the resonator. This idea is also wrong, since light cannot know that mirrors have finite sizes. Therefore, **c** is *always* transverse to mirrors in a resonator. No effect in the transverse arm in Michelson-Morley tests.

Reflectors and refractors are transparent to the ether wind - a local and constant property, **v**. However, **c**, the wave vector is oscillating and moving and relevant in relation to mirrors. So, **c** - not **v** - is relevant in coherent systems. These 2 concepts are very different. So, in these systems light must be described as the *ray* direction $\mathbf{c}(1+v_L/c)$ with v_L as the longitudinal component in **v**. So, in the law of reflection it is theoretically wrong to use the vector sum, or *beam* direction. However, in reality the distinction is important only when regarding Michelson-Morley tests. A difference is also that ray direction can be detected with very high precision, and beam direction only roughly estimated.

Potier's idea that transverse ether wind can tilt a wave front is in error. So, there is no effect of the ether wind in the transverse arm in Michelson-Morley tests. Therefore, time dilation and Lorentz transform (instead of Galilean transform) are just a cover up for Potier's mistake. He introduced some particle thinking in wave mechanics and did not notice the distinction between beam and ray. Unfortunately, Potier's ideas were accepted. So, the debate 1882-1887 had a tragical end for science, and also for Michelson, who had a nervous breakdown.

A contraction of physical bodies (2 times present contraction of space) can be united with no time dilation. We cannot see this contraction since the contraction also affects our definition of length. The behavior of atomic clocks (change of frequency) can be explained by a second order effect of the ether wind, since bound electrons move forth and back in relation to the ether wind.