

How Science Became Fiction

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Background

Modern physics states that twins can become of different ages, if they have moved with very different speeds. The reason is that time is said to progress with different speeds for individuals in different states of motion. This is called time dilation. These ideas are in conflict with common sense, and therefore called the paradox of twins. Time dilation has been very productive for writers of science fiction stories. However, this idea has been devastating for physics.

The idea of time dilation emanated from the development in physics in the years between 1882 and 1887. At that time a very qualified experimental scientist, Michelson, had measured the speed of light. He measured the round-trip time for light moving forth and back between mirrors. He therefore tried, together with Morley, to also detect small changes in light speed due to an effect of an ether wind. This idea was suggested by Maxwell.

The ether wind problem

The ether wind was assumed to be about one part in ten thousand of light speed and caused by Earth **motion** in relation to the Sun, since the Sun was assumed to entrain the ether. However, if so, then the ether should also be entrained by the Earth. Therefore, the effect of the ether wind is only in the order of one part in a million, and caused by the **rotation** of our planet. This idea is in good agreement to the experiences from the global positioning system, GPS.

Michelson used 2 identical systems mounted in a right angle to each other, and tried to observe a difference in propagation time. The equipment was slowly rotated and a maximum difference was expected to occur when the **measuring** arm was in the direction of the ether wind. In the **reference** arm the effect was assumed to be zero, since the ether wind was assumed to be blowing inside the wave fronts.

In 1882 a different interpretation was suggested, stating that an effect of ether wind existed also in the reference arm. Since this effect was assumed to be half the effect in the measuring arm, the total prediction was reduced by half. The motivation to this new idea was that light was assumed to take a longer way. The reason was a hidden assumption that light must reach exactly an unchanged point at the detector. This idea is wrong since light is unchanged in relation to the ether in the reference arm, and not in relation to the equipment, and therefore hits a different point on the detector. However, the detector is hit in an unchanged moment of time. The change at the detector is much smaller than the size of the interference fringes and therefore not relevant. Unchanged time of arrival means that no change is detected, and no effect in the reference arm. The new idea was **wrong**.

The error

The reason to this mistake was an important misunderstanding regarding the relation between wave fronts in light and the mirrors in the MMX equipment. We must observe that mirrors reflect wave fronts but have no relation to the ether wind. This means that an ether wind blowing inside a wave front cannot tilt a wave front. Therefore, in relation to a mirror, light should be described without regarding the components in the ether wind that are falling inside the wave front. So, the wave fronts depend on the ether wind in one dimension only. This is important in coherent systems where detection is based on **phase** and therefore just the normal to the wave fronts can be observed. So, we

describe wave fronts by their normal and call this the **ray** direction. In advanced optical systems it is possible to detect this direction with very high precision based on phase. The ray concept is only a mathematical tool, and the reality is in the wave front. Carel van der Toigt has stated that light moves independent of the state of motion of the ether. So, he seems to be correct in 2 dimensions of 3.

When we use the vector sum of ether wind and wave velocity, we can describe total motion or **beam** direction. However, we cannot find this direction with high precision, since we must detect based on **amplitude**, and not by phase. So, this distinction between ray and beam was not observed in 1882. The difference is small in the horizontal plane. Planetary rotation produces only maximum 1.5 parts in a million at the Equator. By ignoring this small distinction, the wave model was corrupted by particle-based thinking in conflict with the wave model. This created the illusion of particles in light, and also the wave or particle paradox. In relation to a mirror we must use the ray concept – not the beam. So, light does not **move** along the optical axis – but with wave front normal **along that axis**.

We can see another way to explain the error in 1882 by observing that we need a long distance to the distant mirror in order to gain coherence with only one wave front in returned light. We observe that the distant mirror produces a virtual image of the light source at doubled range, that is **fixed** in the equipment frame. So, orientation of wave fronts in returned light is also fixed in the equipment frame. In other words: Pythagoras theorem was used in error. Without wave front tilting the light vector **c** is unchanged in the ether frame. Describing this in the equipment frame gives speed $\sqrt{c^2+v^2}$.

Michelson resisted this new interpretation for a couple of years. However, his opponents were in majority, and he got a nervous breakdown. So, he gave up in 1887. This was a tragedy for Michelson – and for physics.

The fact that transverse ether wind cannot tilt a wave front means that stellar aberration cannot be caused by an ether wind. Instead a wave front, constant in relation to our sun, must have a different orientation in the frame of the moving earth. This effect is u/c equal to one part in ten thousand, (and not v/c equal to one part in a million).

With the measuring arm aligned with the ether wind we have equipment related ether winds of $c+v$ and $c-v$ in 2 opposite directions of light motion. This causes the very small reduction of the round-trip time. However, it was not observed at that time that the separations between atoms in a crystal also are controlled by forces moving in both directions between atoms. These forces must also be assumed to move with speeds $c+v$ and $c-v$ in 2 opposite directions. We can therefore conclude that the separation between atoms in a crystal is reduced to the same amount as the reduction in the 2-way speed of light. This means that a real reduction in 2-way light speed is compensated by a real contraction of matter. **The effect in the measuring arm is therefore not observable.** This is a contraction of matter, and not of space. This contraction is 2 times the currently accepted FitzGerald contraction, and this contraction also exists in the modern, as well as in the older definition of the unit of length.

We can conclude that effects of ether wind do **not** exist in MMX reference arm and in the stellar aberration, and in the measuring arm the effect is not observable. So, the original basis for the theory of special relativity, SRT, is gone away. Instead of the Lorentz transform we can use the Galilean transform, without the γ -factor. For matter only we can use the factor γ^2 .

We should give up SRT and reintroduce the ether. In the context of black matter and black energy it is remarkable that black ether is denied. The Sagnac correction in GPS supports this idea, and Sagnac effect has also, in error, been used against the ether by referring to a rotating area, although the correct **physical** description is a translating line, that **not** has to be closed. So, the great mistake was

describing light as a vector sum of 2 very different phenomena, namely wave velocity and ether wind, influenced by particle-based thinking. We must try to think based on wave fronts instead.

A deviation from the wave model produced the illusion of time dilation and light particles.

The solution

Without time dilation we must hold the atomic clocks themselves to be responsible for their behavior in the GPS system. Since bound electrons move forth and back in relation to the ether wind in 1 dimension of 2 it can be reasonable to assume that an effect equal to half the effect in measuring arm in MMX is present in atomic clocks. This assumption predicts the same as SRT by an ether wind equal to the satellite speed (3.87 km/s).

To find an equal prediction to substitute GRT we try an ether wind equal to the escape velocity (11.2 km/s near Earth and 5.5 km/s in a GPS satellite). However, this prediction equals GRT **in radial direction only**, since GRT prediction emanates from a **scalar**, and the ether wind effect comes from a **vector**. So, we find that **one** ether wind effect predicts the same as SRT **plus** GRT.

The fact that we have introduced a radial ether wind means that we can explain light bending near our sun without faking mass into light. Just before light is passing the Sun the ether wind is added to light speed and strongest nearest to the Sun. Therefore, light, according to the ray concept, is bent **away** from the Sun. Just after passing the Sun light is bent back to the same direction – but **not** to the same position. Observed from the Earth the effect is about the same as predicted by GRT – but without faking mass into light.

The radial ether wind is also useful for explaining the Pioneer anomaly. The radial ether wind from the Sun (equal to the escape velocity) changes 2-way light speed between 20 and 70 AU (astronomical units). This change can simulate a change in the speed of the space station and explain the Pioneer anomaly.

Gravity

The high precision in the GPS system can be explained by a constant ether wind, a frame, that is translated – but not rotated – by our planet. However, it is not common sense to assume our planet to define ether wind in the Universe. Instead, by regarding the fact that GPS is a spherically symmetric system we can see that a spherically symmetric ether wind also is a possibility. Besides, such an ether wind can also explain the spherically symmetric force of gravity by a force proportional to the ether wind squared. This idea can be united with Newton's model for gravity from a body with a spherically symmetric density function.

Newton abolished an interesting hypothesis sent to him by Fatio, who explained gravity by an ether based on small and fast particles moving in all directions. This flow was assumed to be attenuated by matter and thereby disturb the spherical symmetry and thereby produce the force of gravity. Fatio's model does not **demand** spherical symmetry but predicts the same as Newton's gravity for this special case. The need for an explanation to tidal water indicates that Fatio's model is more realistic than Newton's model, based on mathematical idealism. Another important indication is that Fatio's – but not Newton's model – can explain how a shielding effect can explain that we observe anomalies during solar eclipses – the so-called Allais effect.

Newton's denial of Fatio's idea seems to be very harmful to science.

Einstein's denial of the ether made the explanation of gravity impossible.

Summary

The confusion in modern physics started as early as in 1882, when the distinction between the concepts ray and beam was unobserved, and beam instead of ray was used in the law of reflection in a mirror. So, the wave model was infected by particle-based thinking, causing light to appear having particles. Wrong interpretations of Michelson's tests with Morley also had to be explained away with the concept dilation of time. This means that the transition from particle model to wave model for light has not been done in a correct way. **So, the transition from particles to waves is not completed, and deviations from the wave model produced the twin paradox and the wave-particle paradox.** It is an ironic fact that a very small angle (in the order of one part in a million) caused devastating effects in physics.

Since the theory of relativity is based on these mistakes it must be given up, and the ether must be reintroduced. It is remarkable that we can introduce black matter and black energy, but nevertheless deny the black ether. We find that the contraction of matter – not space – is 2 times the accepted FitzGerald contraction – also existing in the old, as well as new, definition of the unit of length. By regarding these facts, we find that we do not need the Lorentz factor γ for light and space – but instead we need γ^2 for matter only. So, we can use the Galilei transform, since this contraction also exists in the definition of the unit of length.

The introduction of light particles, as well as the abolishing of the ether concept, have been devastating for physics, and made an explanation to gravity impossible. This demonstrates how eminent scientists like Planck, Einstein and Bohr, after making great contributions, seems to be accepted for everything. Another example is Kepler who after great contributions to planetary orbits was almost believed when he tried to explain planetary separations by means of Platonic bodies. Einstein also used geometry, to explain gravity.

Scientists appears to be dreamers, searching only behind the horizon into distant galaxies, and never look backwards. So, discussions regarding something that happened in 1882 is not as 'sexy' as wormholes. Therefore, more critical thinking is of great need in physics. So, inability to look backwards is the reason to the fact that **science has become fiction.**

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