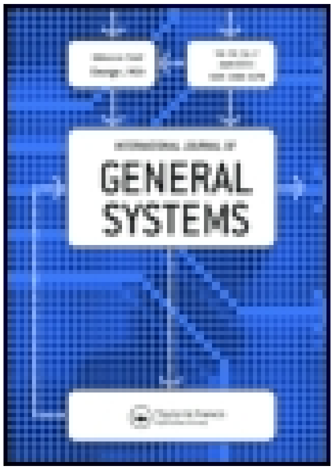

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EXPERIMENTAL VIOLATIONS OF THE PRINCIPLES OF RELATIVITY, EQUIVALENCE AND ENERGY CONSERVATION

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Letter to the Editor

EXPERIMENTAL VIOLATIONS OF THE PRINCIPLES OF RELATIVITY, EQUIVALENCE AND ENERGY CONSERVATION

Sir—This letter was stimulated by the publication of the special issue of your journal on Systems Thinking in Physics (Vol. 11, No. 4, 1985, pp. 279–345). I succeeded to measure the Earth's absolute velocity with three different set-ups[1-3] (the last, so-called "coupled shutters" experiment, gave for the Earth's absolute velocity the magnitude $V = 360 \pm 40$ km/sec and for the equatorial coordinates of the apex $\delta = -24° \pm 7°$, $\alpha = 12.5^h \pm 1^h$) and with my accelerated "coupled mirrors" experiment I showed[4] that a local distinction between a kinematical and a gravitational acceleration can be very easily established (when my apparatus is put in a laboratory with a kinematical acceleration it shows different absolute velocities at the different moments, but when the acceleration of the laboratory is gravitational, no changes in the absolute velocity can be observed). Thus I demonstrated experimentally that the principles of relativity and equivalence are not true. My experiments are neither repeated nor commented by the "orthodox" scientists, although in the domain of space-time physics I published more than 40 papers, the monumental 5-volume work "Classical Physics",[5] and the books "Eppur si muove",[6] "The Thorny Way of Truth", Part I[7] and Part II.[8] I took part at the most important space-time conferences in the last decade, including the last three International Conferences on General Relativity and Gravitation and I organized in 1982 the International Conference on Space-Time Absolutness, publishing together with Prof. J. P. Wesley its Proceedings.[9] I did all what is to be done. If the "orthodox" scientific community still does not "see" my theory and experiments, this is not my fault.

This letter will be dedicated to one of my electromagnetic experiments which showed a violation in the energy conservation law (giving first a short theoretical introduction). Let us have a magnet whose magnetic potential at a certain reference point is $\vec{A}$ and a wire element which moves at this point with a velocity $\vec{v}$ or remains there at rest. I showed[8] that conventional electromagnetism knows only the *motional induction*, i.e., the motional electric intensity

$$\vec{E}_{mot} = \frac{\vec{v}}{c} \times \mathrm{rot}\,\vec{A} \tag{1}$$

which appears when a wire moves with respect to a magnet, and the *pure transformer induction*, i.e., the pure transformer electric intensity

$$\vec{E}_{tr} = -\frac{1}{c}\frac{\partial \vec{A}}{\partial t}, \tag{2}$$

which appears when an electromagnet and a wire are at rest and only the current feeding the electromagnet changes. Conventional electromagnetism does *not* know the *motional-transformer induction*, i.e., the motional-transformer electric intensity

$$\vec{E}_{\text{mot-tr}} = -\frac{1}{c}\sum_{i=1}^{n} \frac{\partial \vec{A}_i\{\vec{r}_i(t)\}}{\partial t}$$

$$= -\frac{1}{c}\sum_{i=1}^{n}\left(\frac{\partial A_i}{\partial r_i}\frac{\partial r_i}{\partial x_i}\frac{\partial x_i}{\partial t} + \frac{\partial A_i}{\partial r_i}\frac{\partial r_i}{\partial y_i}\frac{\partial y_i}{\partial t} + \frac{\partial A_i}{\partial r_i}\frac{\partial r_i}{\partial z_i}\frac{\partial z_i}{\partial t}\right)$$

$$= \frac{1}{c}\sum_{i=1}^{n} (\vec{v}_i . \operatorname{grad})\vec{A}_i, \tag{3}$$

where $\vec{v}_i = -\partial\vec{r}_i/\partial t$ is the velocity of the magnetically stationary *i*th charge of the system and $\vec{A}_i$ is the magnetic potential originated by this charge at the reference point where our test charge rests. The motional-transformer induction appears when a magnet (electromagnet or permanent magnet) moves with respect to a wire. Only when the motion of the magnet is translational with the common velocity $\vec{v}$, the last formula reduces to

$$\vec{E}_{\text{mot-tr}} = \frac{1}{c}(\vec{v}. \operatorname{grad})\vec{A}. \tag{4}$$

For conventional physics an absolute space does not exist, and if there are two objects *A* and *B*, then the cases "*A* moves with respect to *B*" and "*B* moves with respect to *A*" must lead to absolutely identical physical phenomena. For this reason when calculating the effects of the motional-transformer induction conventional physics uses the formula for the motional induction. This, however, is a *tremendous error*. The motional-transformer induction is *not* reciprocal to the motional induction. *Even for translation* they are two different physical phenomena described by two *different* mathematical formulas, namely the formulas (1) and (4). One of the historical reasons for discarding the motional-transformer induction was the complexity of formula (3), where one must take into account the velocity of any current element of the magnetic system, while formula (1) is very simple, as here one must take into account only the velocity of the test charge. Then came the relativity theory with the whole of its nonsense, nipping in the bud any attempt of making difference between formulas (1) and (4), although even a child who has learned what is rotation and what is vector-gradient will say that these two formulas are different. I have met no text-book on electromagnetism where one can see formula (3).

Following the pioneering research of F. Müller[10] who during 10 years carried out very clever experiments revealing the "seats" of the induced electric intensities, I carried out experiments repeating and developing Müller's results and similar experiments revealing the "seats" of the electromagnetic ponderomotive forces. I established that when electric current is induced, then the electromotive and ponderomotive forces have the same seats only in the case of the motional induction, but in the case of the motional-transformer induction the seats can be different (the pure transformer induction leads only to electromotive forces).

Figure 1 represents the diagram and Figure 2 the photograph of the demonstrational Faraday–Barlow machine (as it is called by me). The machine has three parts which can rotate independently of one another: (1) the magnet,

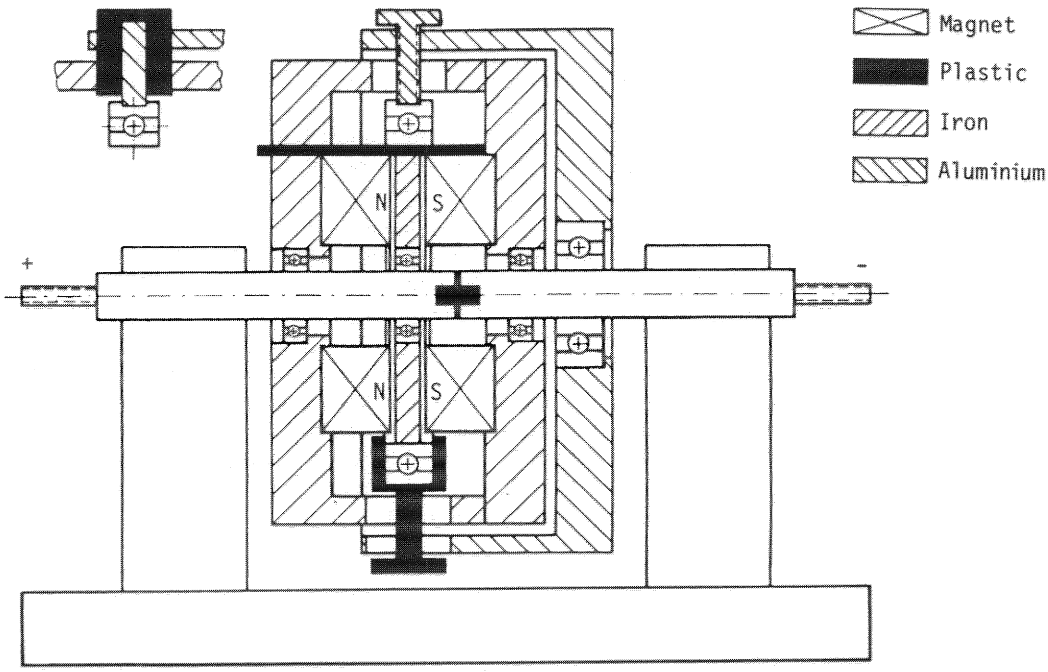

FIGURE 1 A diagram of the demonstrational Faraday–Barlow machine.

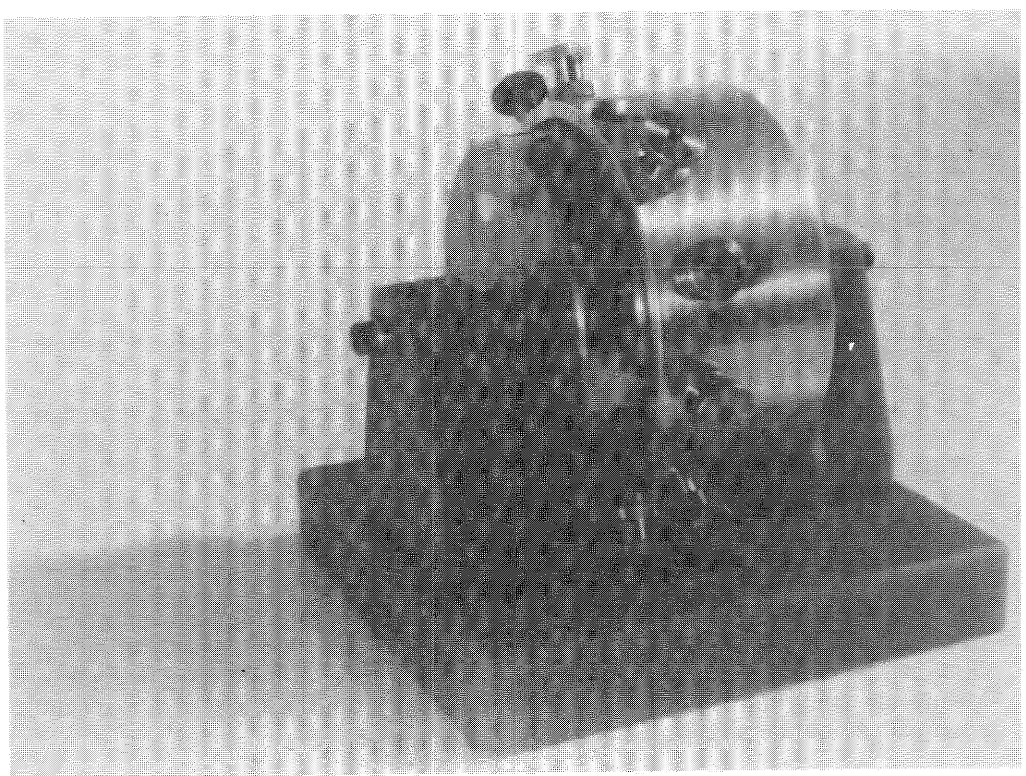

Figure 2 A photograph of the demonstrational Faraday–Barlow machine.

consisting of two ring magnets and a yoke of soft iron; (2) the Faraday–Barlow disk of soft iron; and (3) the six bar conductors of aluminium crossing the yoke through holes large enough, so that a limited motion of the bars with respect to the yoke (and vice versa) can be realized. The magnet rotates on the first and third small ball-bearings, the disk rotates on the second small ball-bearing, and the bar conductors rotate on the middle and on the big ball-bearings (the inner race of the big ball-bearing is solid to the disk). The current (when the machine is used as a motor) goes from the positive electrode of the battery through the second small ball-bearing, crosses the disk, the big ball-bearing, the bar conductors, and through the middle ball-bearing reaches the negative electrode. The bars can be made solid to the magnet by the help of a plastic "cap" shown on the left of the figure. The magnet can be made solid to the disk by the plastic "spoke" shown in the upper part of the drawing. The bars can be made solid to the disk by the help of the plastic "cap" shown in the lower part of the drawing which blocks the rotation of the big ball-bearing. The disk can be made solid to the lab by the help of a "spoke" (not shown in the drawing) which blocks the rotation of the second small ball-bearing. The magnet and the bars can be made solid to the lab by hand. The effects observed by me are presented in Table I.

Table I

	Rotation or possibility for rotation of:			Generator Effects			Motor effects	
	Magnet	Disk	Bars	Measured tension	Kind of induction	Seat of induction	Torque at	Reaction at
1.	0	0	0	0			0	
2.	0	0	Ω	0			0	
3.	0	Ω	0	+	motional	disk	disk	magnet
4.	0	Ω	Ω	+	motional	disk	disk	magnet
5.	Ω	0	0	+	mot.-tr.	bars	magnet	disk
6.	Ω	0	Ω	+	mot.-tr.	bars	magnet	disk
7.	Ω	Ω	0	0	mot.-tr mot. (opp.)	bars disk	0	
8	Ω	Ω	Ω	0	mot.-tr. mot. (opp.)	bars disk	0	

The sign "0" signifies that there is no rotation and there is no tension. The sign "Ω" signifies that there is rotation and the sign "+" signifies that there is tension.

Take into account that in Case 6 a continuous rotation can be realized. Thus in Case 6 the generator produces continuously direct current and the tension is induced in the bar conductors which the whole time remain in space domains where the magnetic intensity is *zero*. Thus the current is produced only because of the availability of magnetic potential in the location domain of the bar conductors. But note there is *no* relative motion between the magnet and the bar conductors! Conventional physics has to eat much bread until it will understand why in such a case the seat of the motional-transformer electric intensity is in the bar conductors. Meanwhile conventional physics defends the tremendous *lie* that the magnetic potential can not be physically observed!

My discovery that the seat of the motional-transformer induction may be at such points of the wire which lie *outside* the magnetic intensity field produced by the moving magnet leads to the conclusion that induced electrical energy can be obtained without spending some mechanical energy. Indeed, at the motional induction the magnetic intensity field of the current induced in the moving wire interacts with the stationary magnet and always the motion of the wire is braked (see Cases 3 and 4 in the table). This is also the case at the motional-transformer induction when the seat of the induction is in parts of the wire which lie in the magnetic intensity field of the moving magnet, i.e., as I say, which are "under the poles" (such a case cannot be realized in the apparatus from Figure 1, as the disk lies in a magnetic intensity field with rotational symmetry and a motional-transformer electric intensity cannot be induced in the disk). But motional-transformer induction can appear also at points of the "wire" which are outside the magnetic intensity field of the moving magnet, i.e., which are "outside the poles". In such a case a magnetic interaction, and consequently a braking, is impossible. It turns out, however, that for closed loops always certain parts are "under the poles" and always a braking does appear. This is demonstrated clearly by Cases 5 and 6 in the table, where the motional-transformer tension is induced in the bars but the braking appears because of the interaction of the current in the disk with the magnet.

I constructed an apparatus where a motional-transformer electric tension is induced in a *closed* wire which lies *thoroughly* outside the magnetic intensity field of the moving magnet. The digram of the machine is shown in Figure 3 and the photograph in Figure 4. In the "gap" of a torus of soft iron with permeability μ (my torus was made of transformer iron sheets) there are two similar disks consisting of an equal number of sectors of axially magnetized magnets. In the space between the sectorial magnets there are sectors of non-magnetizable material (I have used bronze). The one disk is solid to the torus and the other one can be rotated by an electromotor (in Figure 4 the electromotor drives the rotating disk by friction and not as it is shown in Figure 3). When the sectorial magnets of the rotating disk overlap the sectorial magnets of the solid disk, the magnetic flux in the torus has a certain value $\Phi = B(S/2)$, where B is the magnetic intensity originated in those "sectors" of the torus which "overlap" the overlapping sectorial magnets, S is the cross-section of the torus, and I assume that the magnetic intensity in those "sectors" of the torus which overlap the overlapping bronze sectors is zero. When the sectorial magnets of the rotating disk overlap the bronze sectors of the solid disk (and consequently the bronze sectors of the rotating disk overlap the magnet sectors of the solid disk), the magnetic flux in the torus is $\Phi' = B'S$, where $B' = (\mu'/\mu)B$ is now the magnetic intensity in the whole torus and $1/\mu' = 1/\mu + L_d/L_t$, where L_d is the thickness (the height) of any of the two disks and L_t is the middle length (middle circumference) of the torus. If $\mu \gg L_t/L_d$, a case which can be easily realized, we can assume $\mu' \cong L_t/L_d$, thus $B' \cong \{(L_t/L_d)/\mu\}B$, and then accept $B' \cong 0$, and consequently $\Phi' \cong 0$. As

$$\Phi = \int_S \vec{B} \cdot d\vec{s} = \int_S \operatorname{rot} \vec{A} \cdot d\vec{s} = \oint_L \vec{A} \cdot d\vec{l}, \tag{5}$$

where L is the circumference of the surface S, we shall have for the magnitude of the *alternating* motional-transformer electric tension induced in a wire consisting

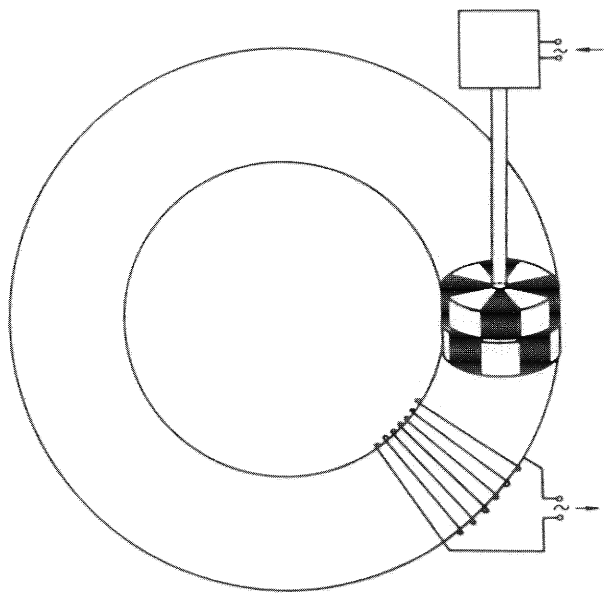

Figure 3 A diagram of the perpetuum mobile MAMIN COLIU.

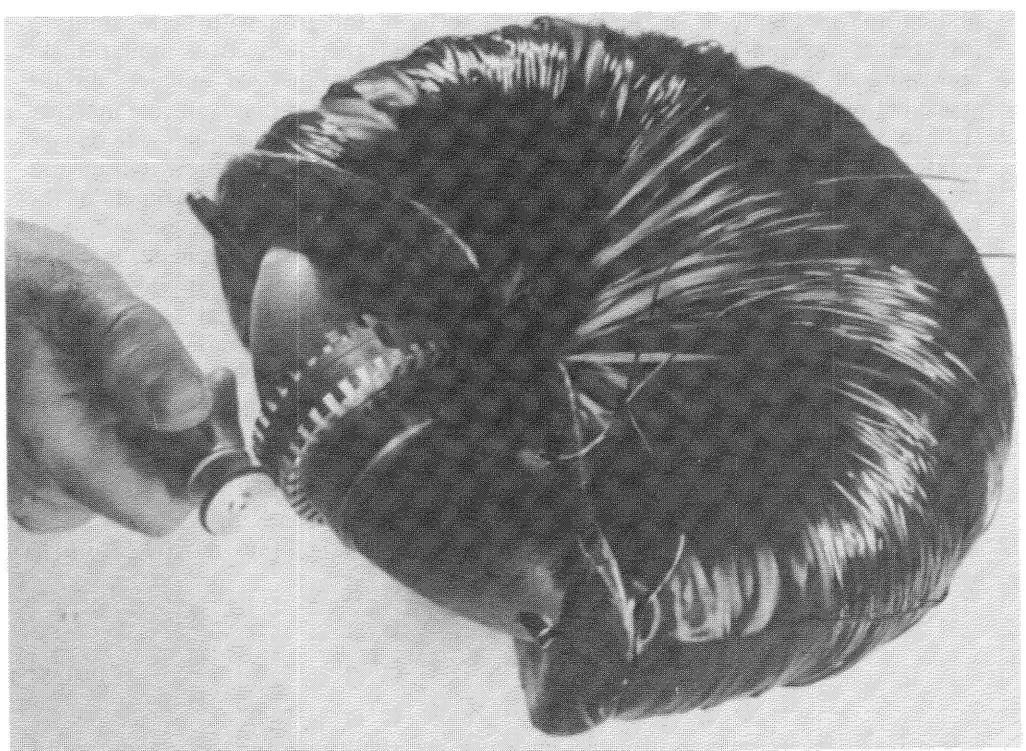

Figure 4 A photograph of the perpetuum mobile MAMIN COLIU.

of n turns wound on the torus

$$U=\frac{n}{c}\frac{\Delta}{\Delta t}\oint\vec{A}\cdot d\vec{l}=\frac{n}{c}\frac{\Delta\Phi}{\Delta t}=\frac{n}{c}\frac{\Phi-\Phi'}{1/pN}\cong\frac{nBSpN}{2c},\qquad(6)$$

where p is the number of the sectorial magnets in one of the disks and N is the number of revolutions per second of the rotating disk.

It is evident that in this generator the motion of the rotating disk cannot be braked by the magnetic field produced by the electric current induced in the solenoid, as this magnetic field has a *rotational symmetry* about the axis of rotation. On the other hand, as the width of the "gap" is practically $2L_d$ (let us assume that the permanent magnets have quasi rectangular hysteresis loop, so that we can set $\mu_{magn}\cong\mu_{bronze}\cong 1$), the magnetic intensity, B_{ind}, originated in the torus by the current induced in the solenoid will be very low. This machine thus can be only a generator but cannot be a motor, because if feeding the coil by an alternating tension, the disk cannot be set in motion. Indeed, at different positions of the rotor I fed the coil by very strong electric pulses but not even slightest motion of the rotor could be observed.

The motional-transformer inductors of this type can be called *non-polar* machines, as no pieces of the coil lie "under the magnetic pole". The non-polar machines can only be generators and since they do not brake the motion of their "rotor", the induced electric energy is *produced from nothing.* Feeding the motor in Figure 4 by the current produced in the coil, one can run the machine eternally, if the motor will overcome the friction of the system. I call this perpetuum mobile MAMIN COLIU, coining the name from the words MArinov's Motional-transformer INductor COupled with a LIghtly rotating Unit.

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