

The cause of rotation of torsion balance in Cavendish experiment.

Although the cause of rotation of torsion balance has not been investigated yet, the Cavendish experiment is used as proof for the law of universal gravitation and to calculate the gravitational constant. However, it is not difficult to verify that the real cause of the rotation of torsion balance is not gravitational force, but the interaction of two pairs of masses - systems of duality, as it is shown on the picture.

In the first column, combinations of pairs of masses and torsion balance which can cause the rotation are shown. The first combination at top left corresponds to the Cavendish experiment. The rotation of torsion balance can take place even when the masses are on one line with the masses of torsion balance, which does not correspond to the concept of the force of gravity at all. All the combinations in which one mass is removed from the experiment do not cause rotation, therefore, the Cavendish experiment with one mass and torsion balance contradicts the law of universal gravitation. The insertion of the second mass can cause rotation again.

A symmetrical system, in which two identical objects determine the behaviour of the whole system, can be called the system of duality. In the Cavendish experiment, two pairs of masses are both systems of duality. Before conclusions about the existence of gravity can be drawn, one must try to distinguish to what extent the observed phenomenon is separated from other phenomena and to what extent it forms a part of the whole:

If for example I put my hand to my forehead, I shall not dream of saying that my forehead "attracts" my hand, but I shall say: It is an inner deed done by the underlying soul-and-spirit. My hand is not independent of my forehead; they are not really separate entities. I shall regard the phenomenon rightly only by recognising myself as a single whole.

The implications of this are significant and far-reaching. Namely, for every phenomenon, we must examine to what extent it is a reality in itself, or a mere section of some larger whole. If you consider Sun and Moon, or Sun and Earth, each by itself, you may of course invent and add to them a force of gravity, just as you might invent a force of gravity by means of which my forehead would attract my right hand. But in considering Sun and Earth and Moon thus separately, the things you have in mind are not totalities; they are but parts and members of the whole planetary system.

Rudolf Steiner. GA 320. First Scientific Lecture-Course.
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The experiment can be carried out without much effort and costs in a lab. It disproves the law of universal gravity and refers to the existence of the systems of duality which can be also found in the phenomena of electricity and magnetism. The systems of duality are perceived sensibly as well as supersensibly and allow transition from natural science to spiritual science.

The Cavendish experiment.

Two masses **M** cause the torsion balance to rotate.
One mass **W** $\geq 2 * M$ does not cause the torsion balance to rotate.
The real cause of rotation is not the force of gravity but the interaction of two pairs of masses – systems of duality.

