

Physics for Pedestrians

Young India Fellowship [Term 1]

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Sympathy and Antipathy

- There is a 'disagreement' between magnets and garlic, so that if a magnet is smeared with garlic, it will stop attracting iron.

- Lambs are terrified of wolves.

A drum covered in lambs skin will fall silent if it senses the vibrations from a drum covered in wolfs skin.

Not death – not even tanning – can undo the antipathy between lamb and wolf.

Sympathy and Antipathy

- *[I]t hath been affirmed by many of the Ancients, and questioned by very few of the Moderns, that a Drum bottomed with a Woolfs skin, and headed with a Sheeps, will yeeld scarce any sound at all; nay more, that a Wolfs skin will in short time prey upon and consume a Sheeps skin, if they be layed neer together. And against this we need no other Defense than a downright appeal to Experience, whether both those Traditions deserve not to be listed among Popular Errors; and as well the Promoters, as Authors of them to be exiled the society of Philosophers: these as Traitors to truth by the plotting of manifest falsehoods; those as Ideots, for beleiving [sic] and admiring such fopperies, as smell of nothing but the Fable; and lye open to the contradiction of an easy and cheap Experiment*
– Walter Charleton

There was mention of a certain new astrologer who wanted to prove that the Earth moves and not the sky, the Sun, and the Moon. . . . [Luther remarked,] So it goes now. Whoever wants to be clever must agree with nothing that others esteem. He must do something of his own. This is what that fool does who wishes to turn the whole of astronomy upside down. Even in these things that are thrown into disorder I believe in the Holy Scriptures, for Joshua commanded the Sun to stand still and not the Earth.

If you substitute the word force [vis] for the word soul [anima], you have the very principle on which the celestial physics in the Commentary on Mars [Astronomia Nova] is based. For I formerly believed completely that the cause moving the planets is a soul, having indeed been imbued with the teaching of J. C. Scaliger on motive intelligences. But when I recognized that this motive cause grows weaker as the distance from the Sun increases, just as the light of the Sun is attenuated, I concluded that this force must be as it were corporeal.

– Kepler

Link:

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Aristotle says, A hundred pound iron ball falling from the height of a hundred braccia hits the ground before one of just one pound has descended a single braccio. I say that they arrive at the same time. You find, on making the experiment, that the larger anticipates the smaller by two inches; that is, when the larger one strikes the ground, the other is two inches behind it. And now you want to hide, behind those two inches, the ninety-nine braccia of Aristotle, and speaking only of my tiny error, remain silent about his enormous one.

– Salviati to Simplicio in Galileo's *Two New Sciences*