

GRAVITATIONAL THEORY & WEIGHTLESSNESS—PART II

With heaven my throne and earth my footstool, what house could you build me, what place could you make for my rest? All of this was made by my hand; all of this is mine—it is the Lord who speaks. But my eyes are drawn to the man of humble and contrite spirit, who trembles at my word.

Isaiah 66 : 1-2

If, as we have argued, the behaviour of bodies removed from the influence of earth's gravity demonstrates a reversal of the ontological order between centripetal force and circular motion with which we are familiar, both Newton and Einstein have misconceived the dynamic that obtains throughout the universe. Accordingly, while their *calculations* may be demonstrated to predict behaviour with greater or less accuracy, their *assertions about causes* are fundamentally flawed.

Newton's is the more rational representation, if it flies in the face of human experience of the connection between centripetal force and circular motion. For the order he postulates lacks any medium whereby the immense supposed attractive forces between celestial bodies could be conveyed. In fairness to him, Newton recognised the difficulties. Einstein didn't pretend that his conceptualisations could be accommodated to human experience. They are, in truth, no more than mathematicians' fantasies, graphs come to life in three dimensions to represent an ersatz reality whose only justification is the accuracy of the behaviour predicted. The mathematician operates at a level of formal abstraction which renders him insouciant about reality's demands.

The Influence Of Materialism

The modern scientist tries to find all causes of the behaviour of the things he studies in the things themselves. He is resistant to any suggestion of causality from outside. Insofar as he does allow an *efficient* cause, he will insist that it arises from the thing in which the effect is found, its *material* cause. This protocol is a consequence of the lambent materialism which affects all science's ruminations. We remarked in an earlier paper how the modern scientist resembles nothing so much as a man walking in a field narrowly overtaken by a bouncing ball who declines to investigate its trajectory to discover the responsible agent and the agent's intent, in favour of dissecting the ball. This defect of vision may be seen in the way the modern scientist deals with the phenomenon of sphericity in fluids removed from gravitational influence. He is convinced that surface tension in the fluid is sufficient to explain it. The same applies in his consideration of the causes of gravitational force. He thinks, as Einstein thought, that the *matter* of the effect, the heavenly body itself and its interplay with "space", is sufficient to explain the centripetal force found in it.

Materialism is a sort of ideology. Its votaries do everything they can to force reality to conform to their thinking rather than, as Aristotle did, endeavour to conform their thinking to the demands of reality. Materialism did not develop in a vacuum. At the root of its mindset is the atheistic inclination which shies away from the thought of an efficient cause of any natural effect. Under its influence, the modern scientist finds in the magnetic effects attached to iron a useful analogy for what he says befalls

bodies in their apparent mutual attraction (in Newtonian theory), or their inter-relation with “space” (in Einsteinian theory), and sees no difficulty in postulating corresponding “gravitational fields” in consequence. On the face of things magnetism seems to involve an *intrinsic* efficient cause. Iron attracts iron—provided polarity is properly aligned. Nothing extrinsic is involved. Why should there not be a similar *intrinsic* ordination of one body towards another? A few moments' thought will demonstrate that the proposition is misconceived.

First, it is impossible that the efficient cause of a thing could be intrinsic to it, except in the case of living things whose principle of operation is immanent—one part, its soul, moves another, its body. Secondly, iron is a peculiar case in that it involves an *intrinsic* ordination. We put intrinsic ordinations in many of the things we make. Consider the design of the rifle. Its ordination, to shoot a projectile, is effected in the very structure of the instrument by its designer and maker, its *efficient* cause, for the benefit of the user. The designer and maker does not need to be present when the soldier employs the rifle's ordination in battle. In the same way, the peculiar ordination of iron manifested in its magnetic properties is effected by its Author (*extrinsic* to it) for the benefit of mankind. He does not need to be present for the element to exercise these intrinsic properties. The difficulty for the modern scientist is the atheistic inclination, companion to the materialist mindset, which rejects any suggestion that iron has an Author.

Aether's Offices Or Functions

As we remarked in our earlier paper, the heavenly substance, *aether*, appears to exercise two offices or functions (no doubt among many others). First, it is the orderer of the universe and its parts, achieved via circular motion, centripetal force and sphericity of form in the celestial bodies, which actions, it seems following Einstein's calculations, are exercised at c , “the speed of light”. Secondly, it is the means whereby light and other electromagnetic energy is conveyed throughout the universe (*lucifer*).

The phenomenon known as “lensing” where a ray of light from a distant source is refracted around an intermediate celestial body, demonstrates, we suggest, a subordination in these two functions, the light-bearing function subsidiary to the ordering function. The phenomenon is demonstrated in the constellation *Pegasus*.



Einstein's Cross where light from a distant quasar is refracted fourfold around an intermediate constellation.

Light does not travel directly to us (the observer) from the quasar in *Pegasus* but indirectly along a path which (in each of the four instances) represents two sides of a triangle, with the direct route (were it not impeded) being the base. Though the speed of light's transmission is not altered, each ray

takes longer to reach us than it would because of its diversion by a force which science attributes to gravity but which, on our thesis following Aristotle, is the primary force *aether* exercises in inducing circular motion (rotation) in the intermediate constellation. There is a lag in the time the light might otherwise have taken to reach us as a consequence of *aether's* ordering function. Other instances of 'lensing' provide more dramatic evidence of this subordination, notably the appearance of *supernova* behind a star or constellation where a second appearance may not occur until years after the first, the time lapse indicating that the paths taken by the two light rays differ vastly in length.

The theory behind "black holes" is consistent with the thesis. If the force *aether* must exercise in constraining a celestial body to circular motion is sufficiently great this may circumscribe completely its function as *lucifer* and so preclude any escape of light from the vicinity of the subject body. 'Black holes' pose an interesting question in line with Aristotle's approach. If we accept Newton's Second Law, expressed in the formula $f = m a$, as of universal application, the force exerted by the *aethereal* matrix on the heavenly body within a "black hole", so great that it prevents any escape of light, may be a function more of *a* than *m*. Since the faster a body is rotated, the greater the force that must be exercised in rotating it, a 'black hole' may indicate a greater speed of rotation of the subject body rather than its possession of greater mass.

Current gravitational theory posits no causative influence in the circular movement of heavenly bodies, regarding such motion as an incident only of their constitution. Inevitably, their velocity of rotation is regarded as simply a further incident. Behind this insouciance is the materialist protocol of treating things for which it has no explanation as unimportant. Aristotle, in contrast, remarks circular motion as the primary *indicium* of *aether's* causative action, exercised *ab extra*, at the periphery of motion—*aether* is the container of all common material being. (St Thomas Aquinas, Prologue, Commentary on *De Caelo*) The *material* cause of the motion of the heavens is the celestial bodies ; the *formal* cause is the *accidental* realities induced in them (circular motion, centripetal force, sphericity). The *final* cause is the order in the universe (ordination and subordination for the good of the whole). The *efficient* cause is twofold ; *principal* and *instrumental*. The *aethereal* matrix is the *instrumental* efficient cause. Of the universe's *principal* efficient cause, Aristotle is in no doubt : it is an intellectual being of immense power. St Thomas agrees : it is the Author of creation, Almighty God.

The causes operating in the universe are fourfold :	[<i>intrinsic causes</i>	[<i>formal</i>	circular motion, gravity, sphericity of form...
	[[
	[[<i>material</i>	the celestial bodies
	[
	[<i>extrinsic causes</i>	[<i>efficient</i>	[<i>principal</i> God
		[[<i>instrumental</i> <i>aether</i> (heavenly body)
		[
		[<i>final</i>	order in the universe

The Heavenly Substance Is Motionless

Nothing moves without being moved by another. Nor can a series of moved movers proceed to infinity, as Aristotle shows (*Metaphysics* Bk. II, c. 2, 994 : & see St Thomas *In II Metaphysics*, Lesson 2). There must be a first mover which is itself unmoved, and this is God. The heavenly body, *aether*, is the first instrument of God's agency. Through it all others are governed and sustained. It seems fitting, as a matter of principle then, that *aether*, His first instrument, should also be motionless. Its operation (*modus operandi*) differs radically from that of bodies of common material being as its nature (*modus essendi*) differs radically from theirs. Its behaviour excels their behaviour as its nature excels theirs.

A body deep in space, whether natural or artificial (like a space-probe), with no other body in proximity to it, is motionless—and this no matter how fast it may be said to be moving relative to the sun or our own planet. The body is surrounded and sustained by the *aethereal* matrix much as a sea-creature is surrounded and sustained by the sea. Yet the analogy limps, for the sea-creature moves through the the sea that contains it. But the body 'in space' does not move through the *aethereal* matrix. It is motionless in *aether*. And, reciprocally, *aether* is motionless with respect to the body. This assertion accords with a view maintained by Dutch physicist Hendrik Lorentz (1853-1928) despite Michelson and Morley's "disproof" of the existence of 'ether' in 1887.

This understanding may be counter-intuitive for us surrounded as we are by bodies forever in motion, but the possibility is supported by the advice of St Thomas in our earlier article that *aether's* accidents (the phenomena that attend it) are wholly disproportionate to those with which we are familiar. [*In II De Caelo* l. iv, n. 3]

Acceptance of *aether's* immobility assists in understanding other phenomena. It explains why *aether's* proper accident, the *quality* light, is immutable in its speed of propagation. Its proper *substance* is immutable. It provides a reason why light's speed of propagation is the same in every direction and setting. *Aether* is motionless *in every setting*. Hence, no matter how fast these bodies may be moving relative to each other, light or other species of electromagnetic energy emitted by either will be propagated, and will be received, at *c*, "the speed of light".

Aether is the universal agent. Its accidents (light, electromagnetic energy, circular motion, centripetal force [i.e., gravity], sphericity of form) are propagated simultaneously in every dimension and in every plane. Their imponderability—they have no mass, as they have no independent existence—permits them to be propagated at that speed which is *aether's* prerogative, 299,792,458 metres per second. In a sense they are unlimited. In contrast, a body of common material being is limited by its nature to motion in one direction at any one time. Since it is a *substance* and dependent on *aether*, it is bound by the first body's determinations. Here is the reason for the difficulties experienced by scientists in attempting to accelerate a particle, i.e., a material *substance* at its smallest, to the "speed of light". It can't be done ! Light-speed is only available to the accidents of *aether*. The limitations it imposes on bodies of common material being cannot be gainsaid.

The Proportion Between Reality And Man

There is order between the known and the knower. That is, there is proportion between the world of

reality and man whose knowledge is not just of singular things like a brute animal, but *of the very nature* of singular things. The issue is encapsulated in St Thomas's passing comment in the *De Veritate*, (I, 2) *res inter duos intellectus constituta...*, "the [natural] thing is established between two intellects." Man was created by God as the highest of His material creatures to live and move and have his being in the world He created. There is a proportion, invested by God, between creation and the creature, between reality and man, the knower. What man knows is what is : reality.

In 1913 the Dutch mathematician, physicist and astronomer, Willem De Sitter (1872-1934), unwittingly provided testimony of the Divine Providence that established *aether* as the ground for the constancy of c , "the speed of light", by demonstrating that if the speed at which light was propagated varied with the motion of the body emitting it, man could never know the truth of the behaviour of double stars in different phases of their orbital paths.



A binary star in the constellation *Gemini*

In his old age, when he had outgrown many of the materialist and subjectivist leanings of his youth, Einstein expressed himself on the topic in words which reflect the metaphysical principle.

"I have no better expression that 'religious' for this confidence in the rational nature of reality and in its being accessible, to some degree, to human reason. When this feeling is missing, science degenerates into mindless empiricism."¹

Of What Value Are Newton's And Einstein's Conceptualisations ?

1. The expression "gravitational field" in modern scientific theory, whether used according to the Newtonian or the Einsteinian view is compatible with a metaphysical view of the universe *provided it is understood in a contrasting fashion* to the expression "magnetic field" when used of a body of iron. A celestial body is *not* the source of gravity as a body of iron is the source of the magnetism that surrounds it. The celestial body is but the focus of *aethereal* action—matter to *aether's* form, potency to *aether's* act—and to this extent its surroundings could be said to be part of the "field" of *aether's* action about the body. The celestial body's function is *be-determined*; *aether's* function, in contrast, is *determine*. That a celestial body appears to be the source of a "gravitational field" arises from the fact that the *action* of the *aethereal* matrix upon it is specified by the body's mass. The greater the mass, the greater the force *aether* must exercise in investing it with circular motion—turning it aside constantly from rectilinear motion (*Newton's First Law*). And the greater the acceleration with which it is rotated, the greater must the force be for the same mass—*Newton's Second Law*, $f = m a$.

1 1.1.1951, letter to Maurice Solovine quoted in Walter Isaacson, *Einstein, His Life and Universe*, New York, 2007, pp. 462-3

2. The “lensing” of a light ray around a massive body *may be conceived* as the effect of the mass of the body “warping the space around it” following the body’s geodesic, the line of shortest distance over its spherical surface. But this is no more than mental being proposed by one who, because he is ignorant of the demands of the doctrine of causality, lacks a true grasp of reality. There can be no effect, even in the furthest reaches of the universe, without an *extrinsic* cause acting.

If the thesis be accepted that we, relying on Aristotle’s analysis of the operation of the heavens, have advanced, it is the universal agent, *aether*, investing the celestial body with circular motion which alters the direction of a light ray passing in proximity to it as incident of the rotational force it exercises.

3. Time is the measure of change or movement. It is primarily mental being (the mind counting) but based in the real, for the mind counts real change, real movement. Metaphysically there is no reason why time noted by one observer should be identical with that noted by another. Newton opined that time was absolute. Einstein seemed to show it was not. What was absolute for both, did they but realise it, was the substance which underlies all reality, the heavenly body, *aether*. Newton’s opinion appeals to it implicitly. But Einstein’s does so too with his insistence on the fixity of *c*, “the speed of light”, for *c* is a property, not of light, but of that which is light’s proper substance. Beneath whatever relativity of behaviour that may appear, this principle of fixity abides.

4. Einstein’s *General Theory of Relativity* predicts that a sufficiently compact mass of matter can deform “space-time” to produce a “black hole”. Rendered this in metaphysical terms, *aether’s* action in investing a celestial body with circular motion is so intense that it supervenes over its function as *lucifer* so as to impede that function completely.

Science tells us that atomic clocks at different distances from the earth’s surface keep different times. A clock closer to the centre of the planet runs more slowly than one further away, one on the top of a high mountain, and slower still than one on a GPS satellite in stationary orbit. The clock that is closer to the gravitational mass, “deeper in its gravity well”, is more affected by that mass. Each clock is determined in its operations by atomic resonance which has its foundation in the fixity of the *aethereal* matrix. The clocks differ in their readings yet disclose no defects in their operation. What occurs, we suggest, reflects what befalls the light rays “lensed” (or refracted) around those distant stellar bodies. There is no compromise of the “speed of light”, *c*, but *aether’s* ordering function supervenes to delay the recording of an event, even by milliseconds, the impediment to the operation of the clocks in differing degrees marking the differing intensities with which *aether’s* force is exercised in proximity to the mass of the celestial body. This is not to say that the delays are effected in an identical fashion (univocally) with that which obtains with “lensing” around distant stars, but in a manner analogous.

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