Gobbledygook

by

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caveat lector

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A common practice among scientifically inclined people is to mistake nomenclature for understanding. What makes a motor turn? Electricity. What's electricity? Moving electrons. What are electrons? Well.... If you ask how the Earth and the moon reach out to one another through space, the answer might be gravitons or a warp in "space-time". There's a lot of nomenclature available but the fact is that giving something a name doesn't necessarily mean that we understand it. Nobody really understands how the Earth and the moon stay in orbit.

That term *space-time* is one of my favorite pieces of nomenclatorial nonsense, prime gobbledygook. A good way to explain why is the old standby, analogy. Anybody who's studied Statics and Dynamics will be familiar with vectors. A vector has two components, magnitude and direction. Velocity is a good example. Considering velocity, speed is the magnitude. As with all vectors, it's possible with velocity to change the magnitude (speed) without changing the direction. It's possible to change the direction without changing the speed. It's possible to change them both. Any one of the three changes will change the velocity but that isn't my point. Part of my point is that the components of a vector are totally independent of one another. Either one can be changed without changing the other. Another part of my point is that the components of a vector are utterly dependent upon one another. That is, if there isn't any speed then there can't be any direction. If there isn't any direction, then there isn't any speed. Without both of its components, a vector can't exist. Thus, either of the two fundamentally different components of a vector, each independently variable, will instantly vanish if the other component disappears. The removal of either component will result in the removal of the entire vector.

Now, consider the term *space-time*. Assume that the universe can be viewed as a vector. If my analogy holds, then space and time are not the universe. They are the components of the universe. Space corresponds to the magnitude of the universe. Time corresponds to the direction of the universe. Saying *space-time* instead of saying *universe* is like saying *speed-direction* instead of saying *velocity*. Magnitude and direction are not the vector. They are the components of the vector. Speed and direction are not velocity. They are the components of velocity. Similarly, space and time are not the universe. They are the components of the universe.

Interestingly, if the universe works like a vector, then it might be possible to manipulate space without changing time. It might be possible to manipulate time without changing space. It might be possible to manipulate them both. Any one of the three manipulations would change the universe. The removal of either space or time would destroy the universe. However, the agenda of this essay isn't cosmology but nomenclature. The lesson of the essay is that the correct nomenclature isn't *space-time*. The correct nomenclature is *universe*.

Like any analogy, the vector-universe analogy might not work perfectly in every case. However, it's a good explanation of why the term *space-time* is gobbledygook. It's a little unsophisticated to substitute gobbledygook for nomenclature. It's pretentious to substitute nomenclature for understanding. That sort of thing impedes understanding. Let's try to get it right. There isn't any such thing as space-time. There is space, there is time, and there is the universe. To be completely honest about it, we don't really understand any of them.

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Glossary

analogy.... *n., pl.* **-gies.** *Abbr.* **anal. 1.a.** Similarity in some respects between things that are otherwise dissimilar. **b.** A comparison based on such similarity. See Synonyms at **likeness. 2.** *Biology.* Correspondence in function or position between organs of dissimilar evolutionary origin or structure. **3.** A form of logical inference or an instance of it, based on the assumption that if two things are known to be alike in some respects, then they must be alike in other respects. **4.** *Linguistics.* **a.** The process by which words and morphemes are re-formed or created on the model of existing grammatical patterns in a language, as Modern English *name : names* for Old English *nama : naman* on the model of nouns like *stone : stones.* **b.** The process by which inflectional paradigms are made more regular by the replacement of an uncommon or irregular stem or affix by one that is common or regular, as *bit* in Modern English *bit, bitten* for Old English *bät, biten*....

—*The American Heritage Dictionary of the English Language*, 1992

cosmology ... *n., pl.* **-gies. 1.** The study of the physical universe considered as a totality of phenomena in time and space. **2.a.** The astrophysical study of the history, structure, and constituent dynamics of the universe. **b.** A specific theory or model of this structure and these dynamics....

—*The American Heritage Dictionary of the English Language*, 1992

dynamics... *n.* **1.a.** *(used with a sing. verb).* The branch of mechanics that is concerned with the effects of forces on the motion of a body or system of bodies, especially of forces that do not originate within the system itself. Also called *kinetics.* **b.** *(used with a pl. verb).* The forces and motions that characterize a system: *The dynamics of ocean waves are complex.* **2.** *(used with a pl. verb).* The social, intellectual, or moral forces that produce activity and change in a given sphere: *The dynamics of international trade have influenced our business decisions on this matter.* **3.** *(used with a pl. verb).* Variation in force or intensity, especially in musical sound: *"The conductor tended to overpower her with aggressive dynamics"* (Thor Eckert, Jr.). **4.** *(used with a sing. verb).* Psychodynamics.

—*The American Heritage Dictionary of the English Language*, 1992

electricity... *n. Abbr.* **elec. 1.a.** The physical phenomena arising from the behavior of electrons and protons that is caused by the attraction of particles with opposite charges and the repulsion of particles with the same charge. **b.** the physical science of such phenomena. **2.** Electric current used or regarded as a source of power. **3.** Intense, contagious emotional excitement. —*attributive.* Often used to modify another noun: *electricity bills; electricity costs.*

—*The American Heritage Dictionary of the English Language*, 1992

electron... *n. Abbr.* **e** A stable subatomic particle in the lepton family having a rest mass of 9.1066×10^{-28} gram and a unit negative electric charge of approximately 1.602×10^{-19} coulomb. See table at **subatomic particle.** [ELECTR(IC) + —ON[1].]

—*The American Heritage Dictionary of the English Language*, 1992

gobbledygook also **gobbledegook**... *n.* Unclear, wordy jargon. [Imitative of the gobbling of a turkey.]

—*The American Heritage Dictionary of the English Language*, 1992

graviton... *n. Physics.* A hypothetical particle postulated to be the quantum of gravitational interaction and presumed to have an indefinitely long lifetime, zero electric charge, and zero rest mass. See table at subatomic particle. [GRAVIT(A-TION) + —ON[1].]

—*The American Heritage Dictionary of the English Language*, 1992

gravity ... *n.* **1.** *Abbr.* **gr.** *Physics.* **a.** The natural force of attraction exerted by a celestial body, such as Earth, upon objects at or near its surface, tending to draw them toward the center of the body. **b.** The natural force of attraction between any two massive bodies, which is directly proportional to the product of their masses and inversely proportional to the square of the distance between them. **c.** Gravitation. **2.** Grave consequence; seriousness or importance: *They are still quite unaware of the gravity of their problems*. **3.** Solemnity or dignity of manner....

—*The American Heritage Dictionary of the English Language*, 1992

nomenclature... *n.* **1.** A system of names used in an art or a science: *the nomenclature of mineralogy*. **2.** The procedure of assigning names to the kinds and groups of organisms listed in a taxonomic classification: *the rules of nomenclature in botany*....

—*The American Heritage Dictionary of the English Language*, 1992

pretentious... *adj.* **1.** Claiming or demanding a position of distinction or merit, especially when unjustified. **2.** Making or marked by an extravagant outward show; ostentatious. See Synonyms at **showy**....

—*The American Heritage Dictionary of the English Language*, 1992

space-time... *n. Physics.* The four-dimensional continuum of one temporal and three spatial coordinates in which any event or physical object is located.

—*The American Heritage Dictionary of the English Language*, 1992

statics... *n. (used with a sing. or pl. verb).* The equilibrium mechanics of stationary bodies.

—*The American Heritage Dictionary of the English Language*, 1992

universe ... *n.* **1.** All matter and energy, including Earth, the galaxies and all therein, and the contents of intergalactic space, regarded as a whole. **2.a.** The earth together with all its inhabitants and created things. **b.** The human race. **3.** The sphere or realm in which something exists or takes place. **4.** *Logic.* See **universe of discourse.** **5.** *Statistics.* See **population** (sense 5)....

—*The American Heritage Dictionary of the English Language*, 1992

vector... *n.* **1.** *Mathematics.* **a.** A quantity, such as velocity, completely specified by a magnitude and a direction. **b.** A one-dimensional array. **c.** An element of a vector space. **2.** *Pathology.* An organism, such as a mosquito or tick, that carries disease-causing microorganisms from one host to another. **3.** *Genetics.* A bacteriophage, a plasmid, or another agent that transfers genetic material from one location to another. **4.** A force or an influence. **—vector** *tr.v.* **-tored, -toring, -tors.** To guide (a pilot or an aircraft, for example) by means of radio communication according to vectors....

—*The American Heritage Dictionary of the English Language*, 1992

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velocity... *n., pl.* **-ties. 1.** *Abbr.* **vel.** Rapidity or speed of motion; swiftness. **2.** *Abbr.* **V** *Physics.* A vector quantity whose magnitude is a body's speed and whose direction is the body's direction of motion. **3.a.** The rate of speed of action or occurrence. **b.** The rate at which money changes hands in an economy....

—*The American Heritage Dictionary of the English Language*, 1992

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