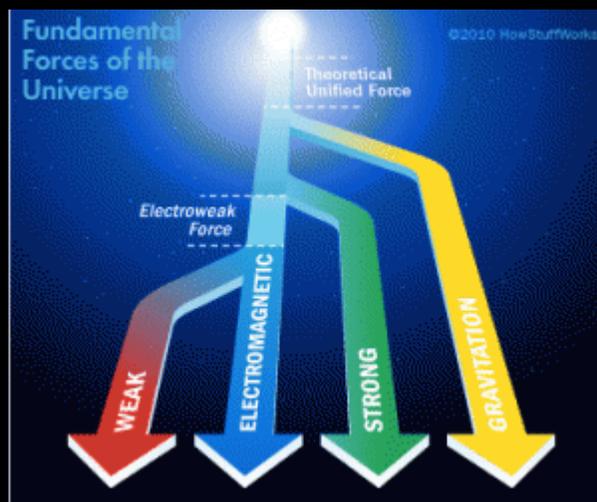


## General Relativity Toward Unification

sgm, 2018/NOV/19

If you google “relativity theorists interested in strong force”, you don’t get very specific results. Why? Look at the following image:



There are *plenty* of theorists attempting the *other* way: from elementary particles (left side of diagram) toward gravitation using the concept of ‘graviton’ as mediator. But there’s two *hidden assumptions* in this approach:

1. relativity theorists are *assuming* elementary particle theorists *know what they’re doing* when they employ the hypothetical graviton
2. the graviton actually exists as mediator for gravity

Not unreasonable both *but*, both could be flat-out *wrong*.

Just a naive glance at the diagram shows it should be possible to attempt gravitation + strong from the right, a relativistic approach toward unification. This has been done in my framework – it’s called *temporal elasticity* and has basis in engineering concepts. If you mention that to theoretical physicists, they *automatically* dismiss you because they arrogantly think/feel that engineering is a kind of subordinate discipline with respect to physics. In some valid ways, they’re right. But that does *not* mean engineering has *nothing* to offer physics.

Impedance is *core* to electromagnetic theory in engineering. When I took the course Fields and Waves at FIU in the early 90s, I realized the impedance-of-space is a core-feature of our universe physicists *ignore*. It is **directly related** to the speed of light in a vacuum via components of impedance, permittivity and permeability:

$$Z_0 = \sqrt{(\mu_0/\epsilon_0)} \quad c = 1/\sqrt{(\mu_0\epsilon_0)}$$

To declare the impedance-of-space is nothing more than an 'artifact' or implication of  $c$  is *extremely* naive and ignores an *entire* sub-discipline – electromagnetism within engineering. Rather, it is the *other way around*:

$c$  is an implication of  $Z_0$

Evidence I'm correct came later when I derived the relationship:

$$e^2 = k\hbar/Z_0$$

where  $k$  is a dimensionless constant

What it says in English is: charge-moment is impeded spin. This is an insanely wonderful discovery – a **fundamental** relationship between charge and spin.

After many years of wrestling with time, space, and the related concept of elasticity, I discovered *another* core feature of our universe –  $Y_0$ , the elasticity of time. I will defer the exact relationship to mass in order to discuss the implications.

Temporal elasticity, via time dilation, unifies General and Special Relativity. It also allows direct coupling / unification of Relativity and the strong-nuclear force because *both are exclusively attractive*. Temporarily ignoring the 'weak nuclear force', the following scale diagram shows the predominance of each 'force':

<u>NUCLEI</u>	<u>ATOMS</u>	<u>MOLECULES</u>	<u>PLANETS-STARS</u>	<u>GALAXIES</u>
te-em	em te	em te	te em	te em

NUCLEI    | ATOMS    MOLECULES |    PLANETS-STARs    GALAXIES  
te-em    | em te    em te    |    te em    te em

Temporal elasticity dominates electromagnetism in most domains; whereas in the atoms-molecules domain, it is the other way around. The reason te-em is hyphenated under the nuclei domain is because *only in the nucleus* is there more of a 'balance of power' between them. Nuclear electrostatic repulsion between protons is a primary feature; so is temporal elasticity between nucleons; other features are relatively secondary to those such as spin and excitation.

If we insist on adhering to the notion 'weak nuclear force', we merely append that to electromagnetism above, changing em to ew for electro-weak. It does *not* impact temporal elasticity in the slightest.

So it is my guess simple academic snobbery prohibits physicists from listening to me. It's too bad because there are potential positive implications such as:

<https://msu.edu/~micheal/history-TE.pdf>

which is a humorous discussion them. Whatever the case, *any* attempt at unification from left-to-right is *doomed to failure*; the *only* viable approach is from right-to-left.