Gravitons Explained

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Abstract

There are two totally different gravity paradigms within physics and astrophysics. Separate models of gravitons support each paradigm. These gravity paradigms could be called Tractor-Beam Gravity, and Push/Shadow Gravity. This introductory essay examines each paradigm, with a surprising winner.

Tractor-Beam Gravity (TBG) embraces the currently popular model of gravitons. They are at the foundation of geometric General Relativity and string theories. This model has been embraced because its supporting ideas can appear elegant with carefully manipulated math. Once the correlative math has been reverse engineered from sketchy data to fit the general model – ideas of graviton tractor beams can emerge that are impossible to exclusively verify within all dimensions, even though popular publications have claimed as much for a century.

Push/Shadow Gravity (PSG) has an older pedigree, going back to Nicolas Fatio, a friend of Newton, in the 17th century. As PSG was originally developed, using the idea of swarms of very tiny impactors, some mass-blocked, it was flawed and easy to refute. Toward the late 19th century the antique PSG model was ignored. It was soon to be superseded by emerging ideas involving Maxwellian electromagnetic fields, culminating with geometric

General Relativity and the truly weird realm of string theory maths. Even quantum field theory has joined the gravity game.

Experimental particle physics (within lower-case relativity) examines phenomena inside some intermediate logarithmic dimensions. Explored energy realms are limited by the limited power of particle accelerators. At reality's particulate limits the ultimate building blocks are much smaller – and combine to create matter worlds much larger than we could dimensionally verify with our instruments. Within real physics the smallest objects dialectically populate the largest dimensions.

Industrial-scale experimental physics has relied on correlating results only within mid-range dimensions to seemingly close their thesis circle, which is a fundamental scientific error. Not only do particle accelerators miss many components of baryonic reality, the entire realm of Dark Matter is unknown and seemingly unknowable within this army's mental and physical toolset. With the wrong paradigm we don't even know what we can't verify.

For today's consumers, illustrations and videos of GR sloping gravity sheets, wormholes, and multiple string dimensions beyond 4D are devised to please the eye and trick the mind. Clever visuals have little to do with how actual gravity works. Most laypeople don't care, as long as they are entertained by clever visual media.

Predominant professional physics has two themes: General Relativity (GR), and Quantum Theory (QT). Both themes have been with us for a century. Neither paradigm has integrated gravity comfortably. Quantum Mechanics (QM) is more akin to real gravity, but Quantum Field Theory (QFT) is also in play.

In other words…

> "…quantum field theory is typically formulated in the *flat* spacetime used in special relativity. No theory has yet proven successful in describing the general situation where the dynamics

> of matter, modeled with quantum mechanics, affect the curvature of spacetime. If one attempts to treat gravity as simply another quantum field, the resulting theory is not renormalizable. Even in the simpler case where the curvature of spacetime is fixed *a priori,* developing quantum field theory becomes more mathematically challenging, and many ideas physicists use in quantum field theory on flat spacetime are no longer applicable."

Emerging 21st-century physics reveals a third and elegant gravity model that applies on huge scales. In this new model incorrect GR and string theories are superseded by flat-space, 4D relativity; and quanta within the sub-Planck realm are more likely elementary yin/yang particles.

The so-called Standard Model of Particle Physics (SM) is more classical than either of the first two themes mentioned above. The SM guides particle physicists at the Large Hadron Collider and other experimental locations. The SM is well tested and quasi verified within human-accessible dimensions. The GR model is also classical, but improperly verified, relying on correlating geometric gravity math. At the smallest dimensions QM is seemingly random, but random events appear to smooth on larger scales, yielding a calculus more like classical physics.

We see three themes of physics superimposed on two models of gravity, with only one theme being possibly correct. Popular gravities are partially right to different degrees, and thus are all wrong as complete theories, much less as theories of everything.

Emerging 21st-century physics shares some aspects of the first two paradigms, but dialectically employs a reformed push/shadow model. Without the modernized gravity thesis physics hits a dead end. We can only go so far into reality with deceptive correlation, when still-limited experiments and more elegant theory suggest otherwise. Properly conceived gravitons therefore provide a clear way to look at real causes, and to transcend incorrect models.

It is critical to realize that all versions of tractor beams involve ATTRACTION – whereas all versions of push/shadow gravity involve NET attraction. Net attraction is where equal multiversal yin/yang flows pushing from all directions are locally partially shadowed from one or more directions by a proximal mass or masses. Net variable shadow effects thus yield what correlatively could seem like gravitational attraction. In other words, real push/shadow attraction does NOT involve tractor-beam attraction per se, even though it speciously could look like it does.

Gravity and electromagnetic fields are envisioned as tractor "forces" with no distance cut-off, though progressively weakening toward zero as distance reaches toward infinity, as inspired by the tidy maths of Newton and Coulomb. This inverse force idea enabled Einstein to theorize beyond Newton's small 17th-century world into the known local universe beyond. If he did not have Newton for inspiration, Einstein would not have been able to claim that his spacetime gravity slopes are both universal and fundamental. Follower GR physicists have accepted his 1915 seductive, but only correlative, model, whereas I have repeatedly disproven great-distance, tractor-attracting forces.

Tractor-Beam Gravitons

Have you ever seen an imagined video of a UFO hovering above a farm cow, and then levitating it up in a beam of light? Another variant of this version of tractor beams involves people who are sucked up into alien vessels for probing. The best cartoon version of this silliness involves what looks like a farm-tractor space vessel doing the dastardly deed.

The forces of tractor gravity are carried out by hypothesized gravitons. Not only do such strange gravitons work within our local 4D visible universe, they also are

hypothesized to mediate between any two branes (membranes), linking adjacent dimensional universes. Sloping vortex branes thus transfer both information and gravity inter-dimensionally, and enable the likes of magical wormholes to form and function.

Push/Shadow Gravitons

Whereas the psychedelic idea of geometric funnel gravity is fun to visualize with crafty cartoons, the resurrected reality of actual push/shadow gravity is more elegantly sophisticated, and not as easy to model with correlatively dishonest math. Nevertheless, real 4D push/shadow gravity is easy to understand through clear envisioning, as long as you basically understand its elements.

One of the seemingly strange aspects of Newtonian gravity involves the Third Law idea that while the Earth is attracting us standing on Earth's surface, our puny rest masses are also proportionally attracting the Earth to ourselves. This unequal but equal attraction can be explained with spacetime funnels, or better with the elegant rest-mass push/shadow model. Call this nearby model equivalence a draw, if you wish – but here is one element of Newton's gravity mathematics showing how there can be real substance within the core idea of shadow effects.

Graviton vs. Graviton

Just what distinguishes tractor-beam gravitons from push/shadow gravitons? Despite their same letters, they are worlds apart. The string theory idea is impossible within impossible dimensions. The 4D model makes logical and scientific sense.

The word, graviton, has been associated with string theories. It was coined in 1934. These are specialized strings that travel between and among branes (or universal membranes) in what could be a string-theory multiverse of 10^500 curved universes, of which our local visible universe is just one. Consider that there are "only" about 10^80 atoms in our entire visible universe.

In quantum theory gravitons are envisioned as elementary particles that likewise mediate gravity as a force. GR has not been able to integrate quasi-classical strings and particles into field theory, due to problems with renormalization. String theory sees gravitons as having zero or infinitesimal rest mass, which would be required for them to operate instantly at multiversal distances. All of these older versions of attracting force units are highly flawed, which keeps today's theoretical physics stale.

There is an incredibly elementary Euclidean way to separate the two types of gravitons. Euclidean plane geometry on its own terms does not even exist outside ideal Platonic geometry. [My childhood geometry teacher with a masters degree in math agreed with me, and then said she was going to teach Euclid anyway.] Euclidean solid geometry in contrast does exist within the fourth dimension of vectors. In solid geometry Euclidean planes are simply aspects of 3D solids.

Euclidian geometry objects start with the definition of a point. It is a zero dimensional place within unlimited coordinate space. If time were frozen, points would be a valuable anchor idea. With vectors added, points become valuable as tracking tools, or from relative "points of reference."

Euclid next talks about lines, each of which are conceived as an infinite series of juxtaposed zero-dimensional points. Setting aside the absurdity of infinities in math, let's assume that the number of points in any spacetime, or string, is large but not infinite. However, multiplying any number times zero point size from any direction equals zero. Even infinity times zero equals zero. Therefore, Euclidean one-dimensional lines cannot exist, nor can any one-dimensional string.

Consider the possibility of two-dimensional lines, or strings, with length and width. Same problem: If there is no height, there can be neither length nor width, even if combined. That leaves only three dimensions as acceptable math, with the fourth vector dimension for the real world.

Planes are wonderful fantasies. From Euclidean planes we can construct all sorts of ideal math structures, such as branes and even curved holographic structures. Imagined planes can be built up from what amounts to ideal crossing strings. Alas, even an infinite number of impossible crossing strings that cannot exist do not yield any 2D plane – flat, curved, or wavy. Therefore, what may appear to be ideally 2D is really 3D. Three dimensions, or four, is how we can usefully employ Euclidean solid geometry, when pure plane geometry is a Platonic math ideal at best.

Consider the real world:

Yin/yang particles exist in bead-like form in the sub-Planck realm at about the 10^-37m dimension, and possibly smaller. The sub-Planck realm begins at 10^-35m, and it's also where individual QT quanta are said to reside. Such quanta are said to permeate space itself in the form of vast quantum foam.

Since Heisenberg and other experimental physicists have never directly examined individual quanta with combined place and motion, quantum-like field effects are only realized within much larger dimensions. The elegant model of dynamic yin/yang particles and combinations therein could accommodate apparent quantum field effects, including the partially correct idea of quantum foam.

Yin/yang is broken down into the "yin" matter aspect, and the "yang" energy aspect – but there is also the unity of opposites, and the law of conservation of energy and matter. There exists at the smallest dimensions, where time that we understand does not compute, the simultaneity of cause and effect. All of these seemingly modern physics ideas have a theoretical pedigree going back many centuries even to classical Indian philosophy, and they persist today within Lotus Sutra Buddhism.

The Standard Model of particle physics (SM) recognizes forces as follows:

> "Many theoretical physicists believe these fundamental forces to be related and to become unified into a single force at very high energies on a minuscule scale, the Planck scale, but particle accelerators cannot produce the enormous energies required to experimentally probe this. Devising a common theoretical framework that would explain the relation between the forces in a single theory is perhaps the greatest goal of today's theoretical physicists. The weak and electromagnetic forces have already been unified with the electroweak theory of Sheldon Glashow, Abdus Salam, and Steven Weinberg for which they received the 1979 Nobel Prize in physics. Some physicists seek to unite the electroweak and strong fields within what is called a Grand Unified Theory (GUT). An even bigger challenge is to find a way to quantize the gravitational field, resulting in a theory of quantum gravity (QG) which would unite gravity in a common theoretical framework with the other three forces. Some theories, notably string theory, seek both QG and GUT within one framework, unifying all four fundamental interactions along with mass generation within a theory of everything (ToE)."

We see how these separate ideas of force/interaction could be elegantly unified within the foundational concept of individual yin/yang particles, and with dialectical emergents thereof. Particles can apparently exist as elementary "quantum foam," and as such constitute much of what we know as push/shadow gravitation. Combinations of these particles at small scales, but in vast and omnidirectional flows or fields, likely constitute most of what we correlate of gravity as the tractor-beam "force." Interestingly, the tractor beam force on any object, is the summation of vast numbers of competing gravity funnels without distance limits.

Consider a foundational idea I developed years ago: **primary and secondary electromagnetism**. Primary electromagnetism (PE) contains within itself secondary, or dipolar, magnetism (EM) as we know it. Each PE y/y particle is efficiently spherical by itself, and does not project distant EM. However, when two or more y/y particles directly encounter each other they may adhere via PE, and thereafter dialectically create EM structures and forces we recognize within the universe.

The smallest possible "beaded" strings can be just two y/y particles long, although most beaded strings have thousands of juxtaposed individual particles. Short strings may also combine to make longer strings. Much longer strings with neutral ends can be recognized as photons, based on their wave or rotational frequency. Other possible adherent combinations can yield larger neutral particles such as neutrinos.

It is interesting to note that small neutrinos exist at about the 10^-24m dimension. These objects, mostly of solar origin, can easily zip through the Earth in vast numbers. Very much smaller y/y particles easily zip through dense baryonic matter too. Why not? The difference in size between one EM-neutral y/y particle, and one small EM-neutral neutrino particle is dimensionally almost equivalent to that between an atom and a human being.

When beaded strings of any length express negative secondary electromagnetism at opposite ends we get the likes of electrons and muons. When a string's distal members exhibit PE we get the likes of neutrons and photons. All such units are still unified combinations of mass and energy. It is also possible for strings to emerge from, or combine into, various graviton structures.

Gravitons can be PE rings, hollow or solid spheres, or irregular structures below or above the Planck dimension of 10^-35m. Gravitons are defined as PE launching pads for the production of new y/y strings in general, AND for the emission as PE photons of varying frequency determined by each photonic string's length. Gravitons throughout the real multiverse resonating from kinetic interactions among each other can also accelerate to high sub-luminal speeds, and thus become part of push/shadow gravity.

As previously explained, individual yin/yang particles adhere through PE to any y/y part of the graviton. What follows next is the vector dance between incoming and adhering y/y particles AND the vibrating graviton base. A string's release is caused by the greater centrifugal force of the emerging string's combined mass and frequency of vibration, which overcomes the individual

attraction of its immediate y/y particle's PE to the graviton's juxtaposed y/y particle.

By themselves, individual y/y particles are spherical, which is the most efficient shape for objects very small, and also at planetary and stellar scales. However, adhering elastic y/y particles will be stretched into elongated egg-like shapes through the back and forth movements of the host graviton, which is also composed of elastic units. There comes a point where the length of each new string has enough kinetic mass to separate from the "launch pad." When that happens the two juxtaposed string and base y/y particles exceed their stretching limits, like a rubber band, and snap free from each other.

That's when all the stretched, attached y/y particles within the escaping string snap back and launch together in unison at what we call "c" or the speed of light in a vacuum. This fundamental interaction between frequency vibrations, elasticity, and PE yields escaping strings that spin at what we measure as waves and, in the case of photon strings, as different electromagnetic frequencies or colors. Launch speed, and the time for returning concurrently to spherical shapes are always the same for any new string. Conventional ideas of "c" have no clear causal explanation for this universally precise vector speed within a vacuum.

Many strings from highly energized gravitons are quite short, launched by centripetal spinning energy at extremely high frequencies we cannot now measure. What short strings lack in kinetic mass, they have in higher kinetic frequency. The amount of elastic stretching per y/y particle is the same, however.

Extremely short strings are by their spin frequencies extremely energetic, yielding high electromagnetic force. They even have the power to penetrate and escape most nearly infinitesimal black hole mass singularities, plus the volume outside the core mass within the event horizon. These mighty short strings thereby provide the presence of multiversal push/shadow gravity even inside event horizons.

Do not assume that all beaded string units are zipping around the multiverse at the speed of light in a vacuum. A large number of what we cannot yet experimentally verify are slow or relatively static populations of gravitons, and some slowed-down yin/yang single particles. These motley populations can and do collect as vast and somewhat amorphous push/shadow clouds of Dark Matter (DM). Such clouds also form inside clouds of baryonic matter.

DM does gravitationally shadow baryonic masses, and especially so within interactive areas of DM itself. Science has indirectly located DM rest-mass collections through gravity effects, even while we cannot yet directly detect and define DM collections themselves.

Individual gravitons within DM collections are continually bouncing off each other with subsequent exchanges of kinetic energy, some of which allows new EM strings to form and launch. Some of these strings are very short with very high frequencies, leading to the weirdness of DM clouds being very bright at EM frequencies much higher than we can now detect. An extreme example of this weirdness is how apparently black holes are also very bright at ultra-high energy frequencies we cannot detect.

Emerging 21st-century physics, and a fresh understanding of gravitons, provides both experimental and theoretical physics communities multiple paths for breaking out of today's doldrums.