

1 This version of Steve Harris Hubbard's November 26, 2023 Concept Of Gravity paper  
2 "preprinted" as a free downloadable (.pdf) file on [steve-harris-hubbard.com](http://steve-harris-hubbard.com) is a further attempt  
3 to shorten the word count of the original version to appease publication standards imposed by  
4 scientific journals. The old version is also available on the website. The author allows that this  
5 paper can stand alone on its own merit.  
6

7 CONCEPT OF GRAVITY by Steve Harris Hubbard, January 3, 2024  
8

9 This paper does not offer a formal scientific theory. It is an exploration of potential avenues of  
10 thought that may inspire formal theories. It employs a brutal application of logic. The starting  
11 premiss is that attraction gravity along with space and time are emergent concepts invented by  
12 humans. Attraction gravity, along with space/time, are not forces unto themselves. For those of  
13 you that find this premiss too outlandish for you to even read another paragraph, please read  
14 the FOOTNOTE ON SPACE/TIME section before returning here.  
15

16 There are no gravitons, time sprites nor space-keeper forces of any kind. There is no dark  
17 matter nor stand-alone dark energy as used by most cosmologies extant at the time of writing  
18 this. To repeat for clarity, this Concept Of Gravity paper itself argues that gravity also is not an  
19 actual, real, stand alone attractive force.  
20

21 This Concept of Gravity is a description of the large-scale impacts that the universe's  
22 ubiquitous Zero-Point Energy (vacuum energy) sources have upon all other forces throughout  
23 the universe and how that manifests itself into universe-wide features such as gravitational  
24 lensing and apparent mass attraction. The energies of the Field described by this Concept of  
25 Gravity embodies communal, supportive and additive features where local variability, like  
26 entanglement, aggregates into regional fluctuations culminating in universe-wide totals.  
27

28 Energy/mass is manifested in our universe by what this Concept of Gravity calls a Twistor.  
29 These tornado-like-origin-points of primordial energy are best described by likening them to  
30 Roger Penrose's Twistor Theory descriptions. Twistors embody, control and direct all of the  
31 energy in our Universe in quanta. Twistors can manifest into not just anything, but rather every  
32 thing. This includes all particles and force carriers, quasi or otherwise, and every state of  
33 matter. Twistors are contiguous throughout the universe and are part of an interacting Field, the  
34 Twistor Field. The field's density is not static at any location. Ripples, surges and all other forms  
35 of fluid dynamics definable interactions occur. One layer of influence on our reality this Twistor  
36 Field energy provides for is already identified and referred to as the Higgs Field.  
37

38 Twistors power the existence of matter/mass by manifesting all particles including quarks and  
39 power the ubiquitous effect called a quantum-jump. An example is the communal, supportive  
40 and additive features of the Twistor Field explains how quark gluons have a nearly unlimited  
41 energy budget made available to them. A variable number of Twistors are required to fulfill a  
42 Gluon's needs requiring surrounding Twistors to share the load by giving their support to meet  
43 the changing local-mass needs. As energy demands become more localized and dense, this  
44 communal effort extends to committing Twistors well beyond the local-mass related area. In  
45 dense masses, this call to action can involve Twistors contributing for great distances resulting  
46 in planetary orbit effects as one major by-product. These more distant Twistors are turned and  
47 directing energy towards the local-mass density even if only by slight and variable degrees in  
48 order to fulfill the energy needs of the local-mass.  
49

50 This focus toward the local-mass diminishes with distance. Ultimately, these cumulative  
51 interactions within multiple local-mass variable Twistor Field areas result in universe wide  
52 expansions and contractions creating pressures that affect the field all the way up to and past  
53 intergalactic influences to universe-wide effects.  
54  
55

56 Twistors create the short lived particles in empty space as well as supporting the longer lived  
57 atomic structures we call matter. In order to maintain their existence, literally everything uses  
58 energy provided by Twistors continuously including bosons, fermions and quasi-particles alike.  
59 Therefor a continuous supply of energy provided by the Twistor Field that suffuses the entire  
60 universe is required for our reality to be actualized and sustained requiring the Twistor Field to  
61 remain contiguous as masses traverse within its background. What we call mass is supplied a  
62 continuous supply of energy from Twistors in its path by “bow wave” collection. After passage,  
63 the Field returns to a relatively undisturbed state except for some “eddy-dragging” effects.  
64

65 The speed of light is regulated by the Twistor Field’s ability to sustain the existence of all  
66 manifestations of reality we have discovered. Whether a single photon of energy, or a black  
67 hole, all parts of the universe feed at the same trough and obey the same speed limit.  
68

69 A photon’s wavelength, or its variable energy level, is accounted for by its level of Twistor  
70 quanta energy support. This makes Twistor Field energy the definitive factor to quantify a  
71 photon’s ability to trigger a quantum jump. These jumps facilitate the very creation of what we  
72 call reality and how we perceive it. Life as we know it from photosynthesis to cellular energy  
73 transport depends upon quantum jumps. Mass is also defined by this.  
74

75 A comparison of a deep-space example versus a local-mass space shows that the Twistor  
76 Field is a near perfectly smooth energy-availability-field in open deep-space. Masses traveling  
77 through this high energy pressure area have their energy budgets fulfilled without favoring any  
78 particular directional vector. Lower energy availability from Twistors surrounding a local mass  
79 makes it a relatively lower energy pressure area. A mass traveling through this local space is  
80 affected by this and explains planetary orbit effects. The traveling-mass is able to access less  
81 overall energy from the Twistors “facing” toward the local-mass and the traveller finds the  
82 energy availability even less per unit of “space” the closer it moves to the local mass. To  
83 maintain their prior straight-line velocity, the traveling-mass has to accelerate in order to obtain  
84 its needed energy from this desert or accept that they remain trapped at the speed in orbit  
85 around the local-mass dictated by what they require to fulfill their Twistor energy needs.  
86

87 A fictional case of two adjacent planets, created with no acceleration relative to each other  
88 explains what we currently call “attraction”. Each planet, like a falling apple, will appear to  
89 accelerate through the energy desert existing between them attempting to sustain their needed  
90 energy within that lower-pressure desert they find “underneath” themselves. The mere  
91 availability of Twistor energy offered by the outer-clouds do not overcome the lack of energy  
92 inwards. Twistors do not pull. The aggregate of multitudes of “outside” Twistors is an energy  
93 field that is at a higher energy pressure than the energy desert between the bodies. Fluid  
94 dynamics is the more relevant language to describe the interaction. Fluid dynamics dictates  
95 that equilibrium is always the preferred state so the more stable energy field configuration is  
96 realized when the two bodies are “pushed” through the energy desert to combine (collide).  
97

98 The special case of a black hole is explained by realizing that, at the event horizon, no more  
99 energy is left available to outside “stuff” because, from the horizon inward, Twistors supporting  
100 mass are 100% committed inward to support the black hole mass. A black hole sized mass  
101 exceeds the limits of support the “fabric” or “association of Twistors” called the Twistor Field  
102 can provide.  
103

104 The mass involved inside a black hole is not a singularity. The mass of a black hole is only the  
105 mass conversion equivalent to the total energy wielded by the number of fermion related  
106 Twistors contained inside the event horizon plus boson related Twistors directly supporting  
107 those fermions while the Background energy remains just that: background. Future theories  
108 may capitalize on black hole mass calculations to define the Fields’ energy ranges.  
109

110 At the horizon, the Twistor Field is functionally “torn” as it relates to supporting the continued  
111 existence of mass objects, but it is not actually/physically rent asunder. The horizon area can  
112 be thought of in super-fluid terms. It is a zone where the Twistor Field has no specific  
113 directional influence or intent to interact. A traveling mass can still easily make a shallow  
114 traverse inside the horizon by having sufficient velocity prior or accelerate inside the horizon  
115 with a force equal to the percentage of energy lost by the Twistor energy it now finds  
116 unavailable to it.

117  
118 The related white-hole concept is also explained by the Twistor Field even though Twistors  
119 themselves never suck energy. It is the Twistor Field Background’s multidimensional vibrations/  
120 oscillations that perform as the ubiquitous receptor for reclaiming unfocused energy released  
121 from all quantum processes. The Field Background is figuratively the “negative to the Twistors’  
122 positive”.

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124 Supernovas, magnetars and pulsar bursts define the upper limits of Twistor Field support  
125 before being “torn” and entering a super-fluid state at their boundaries.

126  
127 The Twistor Field came to be at the beginning of our Universe via pure energy. The  
128 homogenous pure energy field at the beginning of the Universe broke into bubbles via phase-  
129 transitions each containing lesser fractions of the primordial energy that manifested heavier  
130 versions of matter. This greatly expanded the extent of the universe and generated copious  
131 numbers of primordial black holes. Similar to boiling water simmering down in temperature  
132 from a roiling boil, these bubbles themselves disintegrated into smaller divisions in more  
133 phase-transition stages furthering the expansion of the universe until the smallest, most stable  
134 and lowest temperature variation came to inhabit the entirety of the Universe in the form of the  
135 Twistor Field.

136  
137 Any formal mathematical description of this concept should not rely upon a single fixed value  
138 for a Twistor over history. The Twistor Field has evolved subsequent to its creation and was  
139 thereafter locally influenced with variable energy scales from local to galactic and on to the  
140 cosmic web. The Field’s energy budget at the beginning could vary within universes originating  
141 from starting conditions differing from our own and possibly, only a single one of many phase-  
142 change bubbles may have become our Universe.

143  
144 The Twistor Field has nine dimensions where the implications of the concept of odd-vs-even  
145 must be coupled to the concept of non-zero. These concepts dictate the ranges, forces and  
146 hierarchy of the dimensions. Our known reality of inhabiting a matter-universe instead of one  
147 composed of anti-matter logically dismisses any even number of dimensions because  
148 everything would cancel out and logic also disallows any dimension combination that includes  
149 a zero since, well, zero. String Theory Maths “tamed” or focused by Twistor Maths that  
150 embrace ultimate randomness should be able to represent this nine quantum-level-triad-  
151 interacting-field.

152  
153 There are three dimensions to the background of the Twistor Field, three to sustain fermions  
154 including the Higgs’ range, and three for the force carriers. This Concept refers to them as the  
155 Background Triad, the Fermion Triad and the Boson Triad. The low to high energy frequency  
156 hierarchy is in that order.

157  
158 Synergy via harmonic inter-Triad interactions of reinforcement and cancellation with similar  
159 intra-Triad relationships allows for dynamic energy flow between them all. None are static. No  
160 single dimension or triad can be considered a stand alone entity. The Fine Structure Constant  
161 should be a mathematical theme repeated/echoed throughout the description of the Field as  
162 being a reinforcing driver of interactions inter/intra triad.

163 The Background Triad's energy equals the total energy of the other six dimensions combined.  
164 The Boson Triad commands almost as much energy as the Background Triad. The middle  
165 Fermion Triad remains in flux with a more variable total of energy due to fluctuations of matter's  
166 demands for fermion support and mass related boson involvement and therefore its  
167 boundaries are dictated to it. Only a few percent of the entire field's energy is commanded by  
168 the Fermion Triad on average. The Fermion Triad's bottom is hard since it can never be lower  
169 than the frequency defining the upper end of half of the total energy contained in the whole  
170 Field always commanded by the Background Triad. The upper limit to the Fermion Triad is what  
171 the more dominant Boson Triad allows it to populate at its bottom energy frequency. This  
172 boundary is the only flexible interaction point in the Field.  
173

174 Plotting the Field's energy distribution on a bar graph of frequencies representing energy  
175 potential increase from left to right shows the low frequency Background Triad's range to cover  
176 the graph almost entirely even though it only commands half of the Universe's energy. The  
177 Fermion Triad's tiny sliver to the right of the Background represents a few percent and the  
178 Boson Triad's sliver represents forty-plus percent of the Universe's total energy because of the  
179 exponential increase of energy commanded as frequencies climb.  
180

181 The Background Triad's frequency range of freedom must be calculated down to within a  
182 quantum of energy above zero; and, the Boson Triad's frequency range must be allowed a  
183 range up to within an energy quantum of vibrating like an even "tenth" dimension.  
184

185 The top six dimensions' frequency relationships are embedded and actualized within the  
186 Background Triad. The Background Triad can be likened to the ocean where small  
187 perturbations can reinforce each other to manifest rogue waves. But, in the case of the  
188 Background, it cannot quite actually pop out a monster wave. The Background is frustrated  
189 and constantly on a knife's edge wanting to "bust out". Virtual particles popping in and out of  
190 existence are the manifestations of this boiling potential "chomping at the bit". Proposed  
191 "Axions" may be one description of the Background's long wavelengths.  
192

193 It is up to the Fermion and Boson Triads to manifest for the Background. The Background Triad  
194 is like a trampoline with the Fermion Triad being a bowling ball bounced up by it. The Boson  
195 Triad then can be likened to a golf ball rebounding off the bowling ball resulting in the explosive  
196 acceleration of the golf ball. The Fermion Triad thus acts as a trigger to release Boson energies  
197 by actualizing the latent "trigger-happy" Background energy.  
198

199 The Field Triads' interactions manifest in what is currently referred to as black hole "time  
200 dimension frame dragging". This is the Field's evolving response to the energy requests from  
201 masses within a rapidly spinning event horizon. These effects affect reality to galactic  
202 distances. There is also a vortex of the Fermion Triad above and below a spinning black hole  
203 currently referred to as the "galactic bulge". The Boson Triad reacts more mildly to this  
204 situation while the Background Triad is even less affected and gives a very slow response.  
205 Galactic mass spin dynamics are explained by this and universe-wide Field pressures  
206 ultimately are affected.  
207

208 A more complete black hole description than presented earlier shows that it contains a density  
209 of energy consisting of the mass-related force carriers required to sustain the outside mass  
210 prior to it being absorbed into the black hole including the energy/mass conversion of the  
211 Fermion Triad's and the Boson Triad's energy contributions to the mass's existence. The  
212 Background Triad remains a background but does contract inside, and to a lesser degree  
213 outside of the horizon and so is a contributor to the black hole mass calculations of in versus  
214 out. Importantly, Universe wide effects are actualized by these Background contractions and  
215 rotational torques.  
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227 Research proposals based upon this Concept should focus on quantum descriptions that have  
228 9 dimensions of freedom since they have to explain the Twistors' support for both Bosons and  
229 Fermions as well as maintain 3 dimensional relationships with fellow Twistors in the universe-  
230 wide Twistor Field. Possible theoretical proofs start with the beginning of our universe where 27  
231 dimensions may be required to accommodate super-symmetric particles before phase  
232 transitions precluded their further creation along with commensurate reductions in dimensions.  
234 The maths should produce Penrose style Twistors as the agents of change with overall  
235 research made under the practical umbrella of Fluid Dynamics while employing String Theory  
236 Maths tamed by Twistor Maths who in turn provide the language to help develop the origin  
237 story's Contact Geometry (covering only odd number sphere maths) with focus on its subset  
238 relating to Contact Manifolds.

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240 This presentation now offers only streamlined bullet-point-style summaries of many physics  
241 phenomena and related areas of study that are either explained by this Concept of Gravity or  
242 give suggestions for researching new avenues of theoretical development:

243

- 244 1. "Handedness" of our universe is explained by the odd dimensions' interactions.
- 245 2. Casimir Effect is explained by the Twistor Field's local energy pressure imbalance.
- 246 3. The famous two-slit experiment's bow-wave explanation now has its medium.
- 247 4. LIGO related gravity waves are given a medium that facilitates their quasi-particle-like wave  
248 propagation as well as providing a framework for calculating the Field's dissipation rate etc.
- 249 5. Descending weights of short lived three generations of matter are explained by their  
250 sustained energy support restriction by Twistors' supply-chain and speed of light restrictions.
- 251 6. Strange Metals' non-electron energy flow is supported by the more fundamental Twistor  
252 Field's ability to manifest all of the many, different phases of matter.
- 253 7. Quark-Gluon Plasma Hadronization with its extremely large energy changes where scalar  
254 gluon distribution extends way beyond the electrodynamic proton radius may exemplify the  
255 "outside" Twistors supporting the gluons and help to assign Twistor energy ranges.
- 256 8. The Logan-Wolynes Theory on random/erratic vibrations may be an experimental path to  
257 show how Twistors facilitate quantum jumps.
- 258 9. Luminous Fast Blue Optical Transients powered by feeding neutron stars may be frequent  
259 and consistent enough to help quantify the upper ranges of Twistor Field energy  
260 contributions to the highly stressed neutron quark gluons.
- 261 10. Neutrino flavor/mass research is provided a new opportunity. While a neutrino is  
262 magnetically neutral, it is only nearly perfect in its lack of spin. A spin that is incredibly slow/  
263 low energy would pass through near countless Twistors before snagging enough tiny bits of  
264 energy to exhibit as a mass only to shed it again through more Twistor Field passage. This  
265 could be an avenue to posit values for Twistors' energy and matter/antimatter asymmetry  
266 theories.
- 267 11. Antimatter hydrogen that was created and released did indeed drop/fall. This shows that  
268 both the handedness preference of the Twistor Field's harmonics is intrinsic and that the  
269 "traditional effects of gravity" are not transmitted via particles with any form of parity/charge  
270 etc. This Concept Of Gravity demands this result.
- 271 12. As the Twistor Field expands, contracts and assumes asymmetric concentrations of energy  
272 it will prescribe energy-dense cosmic web features including magnetic plasmas that are  
273 accompanied by commensurately low-energy deserts between them in what we call voids.  
274 The voids' energy content will consist primarily of the Background Triad's portion with the  
275 other Triads being underrepresented. The Background will be stretched as well and  
276 represent less than average energy density within the void. The Hubble "tension"  
277 discrepancy will also be explained in this manner.
- 278 13. "Wobbles of weight in spacetime" experiments could identify an example of the variable and  
279 continuous Twistor Field support for a test weight's gluons etc. If so proved, it would confirm  
280 that the Twistor Field's continuous entanglement/decoherence are never finite in their  
281 resolution and confirm that true, absolute, static equilibrium can never be achieved.

- 282 14.Experiments exhibiting pseudo-gravity deflection of electromagnetic waves within photonic  
283 crystals could model a classical research path for positing the underlying quantum values of  
284 the Twistor Field's inter-dimensional string theory harmonics.
- 285 15.“Triplet Trees” framed by Markov Numbers may be a path to guide Twistor Field string  
286 theory maths development. Also, Markov chain maths that undergo transitions from one  
287 state to another according to probabilistic rules where nothing about the past specifically  
288 affects the future is a feature of the Twistor Field.
- 289 16.Mathematical “Modular Forms” may inform string theorists on how to insure their work  
290 satisfies the infinitely many hidden symmetries demanded of Twistor Field descriptions.
- 291 17.Quantum algorithms for solving maze problems may be a productive path to help formulate  
292 string theories that model the Twistor Field's harmonic evolution/decoherence where the  
293 “past” knowledge of attempted “paths” is “forgotten”. Since there is no “going back in time”  
294 in our Twistor Field reality, “having to forget to get the answer” is a feature, not a bug.
- 295 18.Feynman Path Integral functions that predict the behavior of quantum systems are assumed  
296 to be represented/manifested in Twistor Field maths to accommodate decoherence/  
297 evolution/devolution wave interactions (along with more generic Lagrangian Function maths).
- 298 19.The Unruh effect where an observer who is accelerating through empty space should  
300 experience a “virtual thermal bath” not measurable by one in the same region not  
301 accelerating is explained by the “bow wave Twistor-harvesting” interactions of traveling  
302 masses.
- 303 20.A thought experiment proposed that a photon could act as a bomb detector through its  
304 properties as both a particle and a wave. The Bush/Frumkin study of bouncing fluid droplets  
305 found that the interaction of the droplet with its own waves behaves in exactly the same  
306 statistical manner that is predicted for the detector photon including quantum tunneling and  
307 single-particle diffraction statistics. Twistor Field based reality doesn't just allow this, it  
308 embodies it.
- 309 21.Jerome Faist's Ultra-short laser pulses may allow us to measure the quantum nature of the  
310 vacuum (Twistor Field). Analyzing these pulses' properties may allow measurement of the  
311 Twistor Field's decoherence/evolution/devolution.
- 312 22.NANOGrav Collaboration's mix of background waves could help define the Twistor Field's  
313 evolution.
- 314 23.Penrose's Objective Reduction concepts are explained by his Twistors being supported by a  
315 tangible, real, nine dimension field and not just fictional “space”. Reviews that balked at  
316 accepting the “jumping back in time” inferred by descriptions of Objective Reductions have  
317 no basis for continued objections within this Concept Of Gravity where time truly does not  
318 exist. The particle/thing we used to say was decided upon as reality by regressing in “time”  
319 was merely the “winner” of the Field's harmonic evolution/devolution process in its attempt  
320 to achieve equilibrium. All possible variations of that particle/thing that could be supported  
321 by the Twistor Field did exist until the harmonic evolution/devolution settled upon what we  
322 call reality. No “time continuum violations” occurred. What seemed to be “in front of” or  
323 “appeared after” what became stable reality were only lesser probable possibilities explored  
324 by the wave function harmonics' evolution/devolution process. The “losers” merely  
325 coalesced into the stable “winner”. Nobody jumped anywhere in fictional time.  
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## FOOTNOTE ON SPACE/TIME

Space/time does not actively or actually, unto or by itself, “do” a single thing to create, modify or destroy anything in our reality and should not be used to formally define our reality. An example of how this can be done is given by the Amplituhedron that shows how to calculate quantum particle physics outcomes by considering that space, time, locality and unitary concepts are emergent, not basic, nor required to quantify-the-quanta that is the basis of our reality. Notably, this was inspired by Penrose’s (Hodges) Twistor maths. An example of this would be to consider a photon that travels millions of light years over gazillions of miles before it strikes a leaf of a plant on Earth. Time/space does not exist for the photon. The photon knows only two things upon impact. It knows what net energy it carries upon arrival and that it gave that energy to the plant to trigger photosynthesis. It then ceased to exist. Our species of life on Earth was allowed to come into existence because of actions (oxygen generation) caused by the quantum-jump-based photosynthesis effect in which the photon played its part. How “old” that photon was or how many “frequent flyer miles” it possessed are the silly extensions we are led to discuss if we persist in forcing classical space/time calculations into a reality that is purely quantum-based.

The specific argument that the wavelength energy of the photon lowers while traveling through space/time is indeed a useful tool to predict what a fictional photon will probably be able to do in such situations. But the stretching of a photon’s wavelength and its lowered energy is due to countless interactions at the quantum level during its transmission. What/how it specifically interacted with at the quantum energy level is what affects reality at the leaf. Was its energy affected by lensing around a galaxy or a gazillion almost imperceptible interactions with energy carriers in the cosmos it traversed? Each and every quantum interaction the photon was affected by counted toward what became matter-reality at the leaf strike. And, each and every one of these quantum interactions was a separate event unswayed, caused or affected by either time or space. The total time/space calculated before our photon triggered photosynthesis via inducing a quantum jump only provide useful estimations on the aggregate for our consideration and discussion.

Space and time will remain powerful concepts in discussions about all physics both classical and quantum, including this proposal. They are very important concepts to guide development of proofs that can validate scientific proposals by documenting trends and sizing changes, along with making other projections that lend support to our understanding.

FIRST ADDENDUM: Items added to the numbered list in the January 3, 2024 Concept Of Gravity by Steve Harris Hubbard compiled January 12, 2024:

24. Chris Overstreet's, proposed atomic interferometry experiments are very desirable research paths. Even at lower energies, the results could be showing "fluid-dynamics-like-gravity" effects of the Twistor Field.
25. Jonathan Oppenheim's smoothing maths to align the quantum with relativity is possibly a model to describe the fluid dynamics representing the Twistor field's "gravity-like-effects". (However, in our Twistor Field quantum reality, masses never become classical and space-time doesn't exist, so Oppenheim's maths will not formally represent reality).
26. Wave Function (Pilot Wave/Tensor Network) is embodied by the Twistor Field. Sheldon Goldstein wrote that the Wave Function "combines — or binds — distant particles into a single irreducible reality," where a single particle's trajectory depends on what all particles described by the same wave function are doing without any geographic limits meaning that the universe is interdependent, even across all of the universe. This is embodied by the Twistor Field.
27. The Hierarchy Problem is explained by the Twistor Field where the Fermion Triad (Higgs Field) actualizes the Background Triads energy and triggers the Boson Triad to contribute to the creation and continued existence of a mass.
28. The Alena Tensor described by Piotr Ogonowski was offered as a method to straighten curved space-time. It infers that the universe is a constantly waving field that does not comport with relativity seamlessly. This is a feature of the Twistor Field, therefore The Alena Tensor could be a fruitful research area.
29. Actualizing Zain Mehdi's proposed light beam experiments could be very informative in showing photons interacting with the Twistor Field.
30. Actualizing Sougato Bose's proposed entangled masses experiments should not show gravitons, but should show how the masses move toward each other through the Twistor energy desert between them and if the test is extremely sensitive, possibly show Twistor involvement.
31. Neutron Stars are examples of the Twistor Field being at the super-fluid phase change point similar to the horizon zone of a black hole. Study of Neutron Stars may be a path to refine calculations of the "black hole horizon super fluid" state.
32. Kyu-Hyun Chae observed gravitational anomalies in widely separated twin stars at infinitesimally low acceleration regardless of whether hypothetical dark matter was included in the models and implied a low-acceleration breakdown of both Newtonian dynamics and General Relativity. He claims that "the dark matter paradigm seems now doomed to be abandoned" and that "standard cosmology based on general relativity seems no longer valid, even in principle". If this Concept's Twistor Field string theory can be fleshed out formally, it should be able to model Chae's observations accurately.
33. A novel galaxy black hole described by Robert Geroch, using classical maths, shows that if all the stars in a galaxy such as the Milky Way were displaced towards its black hole, while maintaining their proportionate distances from each other, they would all fall within a communal event horizon before colliding. Formation of such a novel black hole is unsupported by the quantum Twistor Field.
34. Alexia Lopez has discovered unexpectedly large structures in the cosmos including the Giant Arc next to the Big Ring. These do not fit the standard model of the cosmos based upon relativity. Lopez states "These oddities keep getting swept under the rug, but the more we find, we're going to have to come face-to-face with the fact that maybe our standard model needs rethinking." and "As a minimum it's incomplete. As a maximum we need a completely new theorem of cosmology." Proposed acoustic waves that give rise to spherical shells of galaxies or cosmic strings are offered as possible explanations for these structures. These two proposals should be explored by Twistor Field focused research since the fluid-dynamics-like properties of the Field's evolution should support those large structures.



SECOND ADDENDUM to the January 3, 2024 Concept Of Gravity by Steve Harris Hubbard created January 12, 2024:

### ON QUANTUM ENTANGLEMENT

Quantum entanglement statistics defined by Bell's Theorem are supported by the Twistor Field via the ubiquitous twistor energy support needed by every thing in order to maintain its existence.

Two entangled things mutually provide each other with some portion of their reality sustaining energy needs via an inter-connected harmonic thread between them. So long as neither thing substantially interacts with anything else as they travel apart, even at the speed of light, they remain interdependent in sustaining their reality with some portion of their Twistor resupply needs provided from that reciprocal direction. This harmonic thread between entangled things can be described as the directional opposite of their harmonic bow wave harvesting Twistor support. While large masses leave an incoherent, jumbled eddy behind them as they traverse the Twistor Field, small entangled things' "trail-harmonics" can remain smooth and coherent until disrupted.

When either partner is forced to evolve/devolve by interacting with other things, that interconnected harmonic thread is broken (decoherence). This forces both partners to evolve/devolve to reveal a specific composition exhibiting more equilibrium in order to declare themselves open to evolving/devolving as needed to obtain all of their Twistor energy resupply from Twistors local to themselves since they now need to replace the support previously being fulfilled via their mutual harmonic thread. They then become untangled, separate entities exhibiting the statistical probabilities given in Bell's curve.

This does not describe a hypothetical classical wormhole-style connection where communication can pass through faster than the speed of light. As the entangled pair moved apart, nothing happened faster than light. When they evolved/devolved in their new localities, they did not communicate via their mutual harmonic thread or in any other manner. Rather, they quit communicating and that triggered instant decoherence.

Functionally, the tails' harmonic threads are in resonance with the Field and should maintain their potency indefinitely. However, the dissonance of the things and their harmonic threads due to interactions with other quanta en route and the harmonics variability due to the Field's universe wide field energy variation would severely limit anything approaching universe-wide harmonic thread lengths. Defining Twistor Field harmonics interaction/complexity statistics would expose the allowed/expected/sizes/distances/probabilities of this "spooky-action-at-a-distance".

THIRD ADDENDUM to the January 3, 2024 Concept Of Gravity by Steve Harris Hubbard  
created January 16, 2024

### ON REPLACING PREVIOUS GRAVITY FORMULAE

The fact that what used to be formally described as gravity is actually not an attractive force is the focus of this addendum and points out that recalculating without that attraction paradigm is not a simple replacement of it with a pressures-striving-for-equilibrium paradigm.

This Concept Of Gravity uses the example of Strong Force Gluons' need for continued energy support to show how it replaces graviton/attraction forces with an emergent fluid-dynamics-like-pressure-effect force. While the Concept did not specifically refer to other forces such as the electro-weak families of forces and particles, it acknowledged that they need to be included when calculating forces everywhere by pointing out that: "Twistors can manifest into not just anything, but rather every thing. This includes all particles and force carriers, quasi or otherwise, and every state of matter".

Separately, re-addressing many-body rotational examples is needed as well. A pair of neutron stars generating extreme magnetic fields (magnetars) is a many-body example further described by Colin Stuart as the Final Parsec Problem. In this instance, electrodynamic fields would locally play a more dominant part than the Twistor Field's pressure-variation-equilibrium effects. The timing of resolutions to these competitions affects the wider volumes' calculations and should be accounted for.

In average/net outcome terms, the emergent fluid-dynamics-like-pressure-effect force generated by the Twistor Field is functionally nearly equivalent to the classical attraction gravity that it replaces for calculations approaching our local group size. Galaxies and larger will require a new Concept Of Gravity based formula that includes all forces like magnetic fields because they have notable cumulative impacts when compounded by how they affect the Concept Of Gravity's contributions.

New Concept Of Gravity based formulae must include the effects of other energy fields and emergent forces because the Twistor Field is embodying all of the other fields' particles and forces. The Twistor Field reflects those other forces/fields existence within itself. The fluid-dynamics-like-pressures it generates may be either enhanced or depressed in different localities due to the Twistor Field supporting the energy needs of those magnetic fields etc. Therefore, new calculations cannot be based upon average Twistor Field effects only. Instead, all forces' impacts must be included in the formulae where local forces aggregate to galaxy-wide totals and so on to include the entire Universe.

Addressing volumes larger than galaxies will need to take into account voids, higher density cosmic web structures etc etc etc. Calculation complexities will include ever-evolving, cumulative, interacting and nested-doll-like variables. Universe-wide calculations may ever be only estimable on the aggregate and never exact.

FORTH ADDENDUM to January 3, 2024 Concept Of Gravity by Steve Harris Hubbard  
created January 18, 2024

ON PARADIGM CHANGE RESISTANCE, or  
FOR POSTERITY IF THIS PAPER IS DISCOVERED SOMETIME IN THE FUTURE

Hello, this is the author, Steve here. I don't intend to offer any new scientific insights in this last addendum. Instead, I wish to share observations from the vantage point accorded to me by my 72 years of life during which I did not get a college education nor degrees in physics and mathematics. I am not a professional physicist, even in my own mind. I do not have the education and math skills required to create the complex string theory based equations that I envision only via logic, intuition and inference. That ignorance stands alone. This should not a basis to reject publishing the Concept. But, I am finding out that this might be one of two factors why publishers' are deciding to reject publication or even consider its review.

I am making these observations because I now fully realize how revolutionary and threatening my concept probably appears to others. Especially when it is presented by an uneducated non-scientist-of-any-sort old fart. I did not consider those sensibilities when I first wrote it down because I truly am not a professional scientist and obviously was not immersed in any related, current work within any research community.

I am now personally stunned by the inferences my paper makes. It functionally relegates Relativity/space-time to "Newton" status. If my Concept's string theory based theory is finally formulated, multiple research communities from physics to cosmology hailing from universities, government sponsored projects and private industry will wake up the next day and say damn! We have been barking up the wrong tree for over a century. No wonder we were discovering so many conflicting results in our research.

This describes the granddaddy of all paradigm changes. (The definition of paradigm I am using is: a philosophical and theoretical framework of a scientific school or discipline within which theories, laws, and generalizations and the experiments performed in support of them are formulated). Resistance to paradigm change is the second, and more relevant reason for publishers' rejections.

After all, Nobel prizes galore were won calculating with the old Theory. Penrose's singularity theory proof is a perfect example to explore. Penrose's proof was indeed perfect and unassailable.... when constrained within the Concept Of Time described by Einstein's maths that are space-time based. But, another answer was calculated by Kerr. His "no singularity" theory, based upon the same space-time concept Penrose used, is a tour de force of proof as well. Both scientists are true geniuses. And, my Concept shows that both can be correct! How? Because it exposes that their arguments are based upon a concept not rooted in our quantum reality.

I asked myself: what does this mean then? It means my Concept will face some strong headwinds when trying sail against a century's worth of time/space/relativity based calculations, theories and Nobel Prize nominations. Indeed, I have found this to be so.

I initially had assumed that a pre-print-only entity like arXiv would be available to me. But, they only accept articles from previously published authors or those with institutional endorsements or those new authors with a sponsor. I do not qualify in any of those ways. Heck, I don't even know a physicist! So, starting on January 4, 2024 I tried to get my Concept Of Gravity published with Nature Physics or with their pre-print partner Research Square Platform. Research Square declined with a check-our-website's-publication-standards brushoff and at Nature I didn't get past editor review.

Nature was more specific but their excuse didn't appear to pass a basic logic challenge because they said "These decisions are made by the editorial staff, taking into account the probable appeal of the work to a broader physics community, as well as the likelihood that it would seem of great topical interest to those working in related areas of physics". O'my! Overturning a paradigm dominating the entire research worlds' efforts for over a century wouldn't have broad appeal or have topical interest?!?

Nature went on to say: "In the present case, although your findings may well prove stimulating to others' thinking about such questions, I regret that we are unable to conclude that the work provides the sort of firm advance in general understanding that would warrant publication in Nature Physics". At least this could be a defensible reason to not even send it out for review.... if they had never published any article lacking a slam-dunk proof and never published papers making any inferences.

In my Concept's very first paragraph I stated that I was not presenting a formal theory. Publishers could present it as a conjecture or even an opinion piece. I don't care. I just want it to be shared. Why? Because.... what if I am right?! Alternately, after wider exposure, I could be proven wrong. This would have no downside. The paradigm would return to status quo and I would not be damaged because I have no professional reputation to lose nor research grants to forfeit.

I am merely requesting that my logically presented alternative to the relativity/space-time/graviton paradigm be rejected only for a specific reason after professional review. If, after review (to every publishing professional's surprise apparently) no immediate disproofs can be given, then I would assume that a journal like Nature Physics would want to "get the scoop" on others and dedicate an entire edition to publishing such a historically impactful and revolutionary challenge to the status quo. Whereafter, the entire professional physics community would be incentivized to either prove or disprove this old fart. To make this point more relevant to my paper, I referred to a long numbered list of such published research topics in my paper that are currently, directly investigating anomalies that are in turn correctly explained by the basic basis of my Concept. Additionally, this does not include other professionals' theories, based upon my Concept's framework, being developed in the future.

But, my reality gives little hope that the "headwinds" will let my Concept see the light of day.

So, why did I choose to "challenge" Relativity in the first place? I really didn't initially. Over the past few years reading physics related news I noticed a recurring pattern of articles pointing out that a century of research has not discovered gravitons nor proved that gravity is an attraction force nor discovered dark matter nor described the mechanisms behind proposed dark energy effects. I saw, repeatedly, that the old paradigm had been given dedicated, all-hands-on-deck study, to no avail. That provided my background logic.

The discovery of the Amplituhedron about ten years ago crystallized my innate rejection of time being "Real". This led to the genesis of my FOOTNOTE ON SPACE-TIME section. I was then left in a limbo where I had to ask myself: if not space-time nor gravitons, then what is acting like attraction gravity?

But, it was the next question I asked myself that sparked the odyssey I travel. Separate from any thoughts of gravity, one day last November, I asked myself how is it that gluons holding together quarks are seriously described as being able to access a seemingly unlimited amount of energy on demand to counter outside forces trying to pull the quarks apart? Penrose's Twistors supported by a universe wide quantum string theory based Field was my answer.

This led to my happy realization that the implications of “stuff” having to access outside energy continuously provided the basis for the rest of my Concept Of Gravity including quantum entanglement.

So, in the end, how can I defend my Concept if I am “scientifically unarmed”? The writing of my Concept was based upon the brutal application of logic; so, I can only double-down on defending my logic. The short answer to those challenging the Concept is as simple as one, two, three:

1. Prove that attraction gravity really is a stand alone force where “gravitons” exist as force carriers and you can shred my paper.
2. Prove that real, quantifiable “time sprites” (particles/forces) exist that directly and specifically affect my photosynthesis photon example and you can shred my paper.
3. Prove that real, quantifiable “space keeper/maker demons” (particles/forces) exist that directly and specifically affect that photosynthesis photon and you can shred my paper.

Unless and until someone makes my Concept Of Gravity “one, two, three skidoo”, it remains more logical than all prior concepts or theories that are space/time/graviton based. Period.

To be repetitive one last time, I agree that our reality can indeed still be described by relativity based calculations to near perfection. And ultimately, I agree that classical maths and theories must be retained to guide our path when judging competing string theory maths in our quest to produce a formal, mathematically sound Twistor Field Theory describing our Universe’s underlying quantum reality.

I close this paper having now been infused with a defensive-generated hubris. I now offer my Concept Of Gravity as a description of our quantum reality that allowed our species, using our Twistor Field supported quantum brains, to have been able to envision concepts like Time in the first place.

FIFTH ADDENDUM to January 3, 2024 Concept Of Gravity by Steve Harris Hubbard  
created February 20, 2024

ADDITIONAL NOTES IN SUPPORT  
and  
ADDITIONAL OBSERVATIONS ON PARADIGM CHANGE RESISTANCE

Previously, I intended to make the Fourth Addendum the last one. However, recent news reporting that Adrien Florio et al performed simulations of quark pairs that exhibit modifications of the vacuum made by propagating jets that are exhibiting quantum entanglement precisely as I described in the Second Addendum to this Concept Of Gravity. The experiments do not say where the four ton forces required to embody their results come from. This Concept Of Gravity does. This news was too important not to add in another addendum along with other new reporting. So, the following six items are added to the running list.

35. Adrien Florio's Quark Propagating Jets mirror this Concept's entanglement descriptions when at maximum entanglement.
36. Aljaz Godec found that a microscopic sphere of silica that is rapidly heated or cooled by an electric field appears to do so in a lopsided way, heating up faster than it cools. "This is very surprising," said Godec. "So far, we know that this is true because we have shown it, but I don't think we can claim that we understand why this is the case." The Twistor field energy pressure differential explains this.
37. Peter Woit's Twistor/Spinor studies may show a path to constraining String Theory development enough to identify which options will be able to formally describe the Twistor Field.
38. Renate Loll's Causal Dynamical Triangulation research is a geometric approach that may be a fruitful path toward developing theories unencumbered by relativity maths. This, with Jaroslav Trnka's amplituhedron mentioned earlier, along with Jesper Moller Grimstrup and Johannes Aastrup's Quantum Holonomy-Diffeomorphism are encouraging news about the quest to describe a purely quantum based reality without invoking classical concepts.
39. Masahiro Hotta's experiments showed quantum "teleportation" of vacuum energy is possible. The Twistor Field explains how by providing the Field to embody it.
40. Takeuchi's superfluids research focusing on understanding quantum turbulence in superfluids shows that the Reynolds Similitude in superfluids can be measured. If verified it would suggest that quantum viscosity exists even in pure superfluids at absolute zero. This result would echo the Twistor Field's energy differential properties and possibly point to quantifying the Field's pressure differential range.

A final scientific note is that I made an omission error In the main body of this paper when describing the "origin story" of the Twistor Field. I mentioned odd numbered contact spheres and contact manifold studies but did not list the authors of same. The four mathematicians are Jonathan Bowden, Fabio Gironella, Agustin Moreno and Zhengyi Zhou.

Paradigm shift issues follow below.

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The resistance to paradigm change has not lessened. My paper still has not gotten past any “gatekeepers”. As almost a post-script comment on this subject, I have reread my paper multiple times. In doing so I realized that an overzealous gatekeeper might justify rejecting the paper because the fictional photon in my photosynthesis example, if coming from distant stars, would not have enough energy to actually trigger photosynthesis. (I also did not specify that the fictional photon arrived on the earth’s daylight side since most plants shut down their processes at night). My retort is two words: Compton Scattering (on the daylight side). After all, Gamma Rays are merely high energy photons.

An update on my attempts to get this paper reviewed follows.

On January 24, 2024 I mailed a hard copy of the paper to Edward Witten and sent an email version to Sean Carroll. I have not received a response from either. I fear that I will not get past their gatekeepers.

Back in late November 2023 I mailed a hard copy of my first draft to Sir Roger Penrose asking him for permission to refer to his theories in the way I proposed. The parcel tracked to his local London postal station until November 28. It either died there or had an unregistered delivery after which it was disposed of by Penrose’s gatekeepers. I have not tried to contact him further.

In late January 2024, my wife admonished me that while I do not personally know a physicist, we live nearby Cal Poly Humboldt University and I should go meet one. I did so. I visited the office of the Physics and Astronomy Department Chair during his open office hours and checked in with his secretary. He did not deign to allow me into his office and performed what I can only describe as a drive-by-shooting in the hallway. In our brief conversation he made it clear that he had no intention of reading my paper but would try to remember to pass it on to his “gravity guy” when he returned from his sabbatical in about year! My whole adult life was as a man of action in emergency services so I know when I have been told to \_\_\_off. So, I initiated a handshake and thanked him for any consideration he would give. I would be surprised if my paper made it past his secretary’s shredder bin. As I left the campus, I asked myself just how many unsolicited scientific papers do local citizens bring to the professor each week for him to have developed such a cavalier attitude?

I remain at a loss as to how to proceed any further. I may consider attempting to get an online periodical like Quanta Magazine or even Popular Mechanics to review my paper in some manner. If not a serious professional’s review, then maybe as an opinion piece or even a condescending humorous presentation like “!Join our online voting!: is this paper AI generated, purposefully crazy trolling or just an old boy pulling something out of his butt?”.

Alternately, I may just give up and admit that I cannot beat the industrial strength of the old paradigm’s guardians.

I can take solace in the fact that, at the least, I honestly tried. I am at peace with that.

As to the future, I will try to make myself available via voice, voice mail and text at 1-858-344-7339. I have had that number for decades and will try to keep it alive so long as I am too. Whether my address changes when I end up relocating to an assisted living facility or other arrangements, that phone number should remain the same.

SIXTH ADDENDUM to January 3, 2024 Concept Of Gravity by Steve Harris Hubbard  
created March 7, 2024

### INFERENCES, OBSERVATIONS AND FUTHER EXPLORATIONS OF PREVIOUSLY REFERENCED IDEAS

This addendum covers cosmological evolution via devolution of energy forces, electroweak phase change implications and redefinition/reformulation of heat/entropy based theories. It closes with additional numbered list items.

Notably, this addendum returns to science after addenda complaining about the lack of timely acceptance/review. These protestations have no further value. Therefor, as additional conceptual explorations or connections to current theories come to mind, I will add them via more addenda.

A review of this Concept Of Gravity describes how the Twistor Field constantly attempts to achieve equilibrium at every opportunity to do so. The Twistor Field does this by exploring all evolution/devolution possibilities in each and every quantum interaction. Generally, large scale variations of energy pressure densities caused by the cumulative effects of continuous evolution/devolution at every scale is what must be calculated by quantum based maths in order to describe our Universe's cosmology. Additionally, since the Twistor Field embodies all particles and forces, it reflects those other forces/fields existence within itself. The fluid-dynamics-like-pressures it generates may be either enhanced or depressed in different localities due to the Twistor Field supporting the energy needs of magnetic fields etc.

So, when the electromagnetic force separated from its related electroweak phase, it created magnetic lines of force at exotically high energy levels. These lines of force dominated the early universe's expansion epoch while some local energy densities plummeted. Consolidation of matter along those lines, along with their associated voids, dictated the large-scale evolution of the universe. After being warped, fractured and interwoven by the the universe's evolution, these force lines are now identified as an artifact we call the Cosmic Web. Future cosmologies will need to accommodate these facts.

It also follows that this Concept Of Gravity exposes heat/entropy as being an emergent property. Heat/entropy is the classical twin to Relativity based gravity. Heat/entropy maths do model reality with apparent accuracy, but this is misleading due to the limitations of its classical maths only being approximately accurate. The heat/entropy concept's classical maths can not accurately describe our quantum reality because heat/entropy does not represent the actual underlying phase change agent describing the "aging effects" of the Universe's energy fields in the distant future. New cosmologies addressing this will require new theories based only upon quantum field compatible maths like string theory. Currently, only Roger Penrose's Conformal Cyclic Cosmology refers to a concept similar to a weakening devolution of the energy field that leads up to a phase change in the distant future but is also limited by being a classical, relativity based, heat entropy centric theory. CCC's phase change concepts should still be valid but the purely quantum energy based Twistor Field devolution will require purely quantum energy based calculations and not classical heat/entropy maths.



Additional numbered list items follow below.

41. In their “Quantum Cheshire Cat Experiment”, Yakir Aharonov, Eliahu Cohen and Sandu Popescu argue that it should be possible to separate a particle’s momentum from its mass along with its spin. The Concept Of Gravity’s continuous evolution/devolution is forever striving toward perfect equilibrium and so it always allows for measurements in any and all possible vectors or velocities since it never has to reveal the “winner-of-that-moment” answer until forced to do so.
42. Brendan Dromey’s theoretical rethinking-of-reality paper questions whether the entire universe is a single quantum object. He postulates that many physicists are starting to view the cosmos not as made up of disparate layers, but rather, is a quantum whole linked by entanglement. This position is embodied by the Twistor Field.
43. Referred to generically as MBL, many physicists like Phil Anderson, in the 1950s, continuing up to De Roeck, Huveneers and collaborators, produced a series of papers that seemed to promise the existence of quantum states that would never fall into disorder. However, they then trended to admitting that the pull of disorder may not be so easily overcome by laying out a case for a process known as an avalanche. This Concept Of Gravity prescribes such an avalanche. No thing ever exists without the Twistor Field’s energy support. As soon as any single something, or any of its neighbors, no matter how classically separated they are, require even a single quantum of energy support, the Twistor that supplies it influences its neighbors via a cascading chain reaction of other local Twistors. As this energy support comes into play, the neighboring particles supposedly isolated are literally awash in energy flowing nearby. No thing is forever isolated.
44. A general audience media production “Ask Ethan: Starts With A Bang, February 9, 2024” questions: “How does Hawking radiation really work?” He argues that particle-antiparticle pairs falling into or escaping from a black hole is inaccurate and misleading requiring a deeper explanation that alters our view of reality and invokes the Fulling-Davies-Unruh effect. His observations generally offer support for the Twistor Field more than most current news. If his relativity based maths were replaced by pure quantum field theory based maths, his observations may be spot on.
45. A promising avenue of research is Christopher Beem, Madalena Lemos, Leonardo Rastelli, and Balt C. van Rees’s  $(2, 0)$  Superconformal Bootstrap paper that plays a role in string theory and is conjectured to exist in six dimensions. Their position is agreed to by Nima Arkani-Hamed who commented: “It could be reflecting a polyhedral structure of the space of allowed conformal field theories, with interesting theories living not in the interior or some random place, but living at the corners.” Arkani-Hamed speculated that the polyhedron is related to, or might even encompass, his amplituhedron. These connections were referred to in this paper earlier and echo this Concept Of Gravity’s suggested origin story research.
46. Nima Arkani-Hamed has also described a pentagram, like his amplituhedron, as being defined by a finite set of lines crossing at a finite number of 9 points where eight of those dots can be placed on a grid. But, the ninth dot always falls between grid points. The 9th is forced to correspond to an irrational number. He posits that this is a mathematical proof that all algebraic numbers can be derived from configurations of a finite whole number of intersecting points and lines. His conjecture is that everything from irrational numbers, to particle interactions and ultimately the correlations between stars’ positions arises from arrangements of whole numbers. He conjectures that since they exist, so must everything else. While Arkani-Hamed may have only used 9 points as a generic example, this Concept of Gravity takes note of this coincidence. This Concept’s odd numbered dimensionality is the basis for the handedness outcomes where there is something instead of nothing because it disallows even harmonics that cancel each other out. The Twistor Field’s 9 dimensions supports conjectures that our classical, ordered, repeatable and graph-able “eight fold way” can only exist within a quantum reality whole that is totally dependent upon cohabitation within an “odd” irrational numbered, probability based and purely quantum based field.

47. The following comments made by Sean Carroll appear to support the basic logic and framework of this Concept Of Gravity as well as the Concept's entanglement descriptions along with its rejection of classical maths use. *On spacetime being emergent Sean Carroll states:* "So I don't think that there is any such thing as a position or a velocity of a particle. I think those are things you observe, when you measure it, they're possible observational outcomes, but they're not what is — okay, they're not what truly exists. And if you extend that to gravity, you're saying that what we call the geometry of space-time, or things like location in space, they don't exist. They are some approximation that you get at the classical level in the right circumstances. And that's a very deep conceptual shift that people kind of lose their way in very quickly. It's a tricky word. We have to think about it. Emergence is kind of like morality. Sometimes we agree on it when we see it. But other times, we don't even agree on what the word is supposed to mean. So, the physicists, and mathematicians, and other natural scientists tend to — but not always — rely on what a philosopher would call weak emergence." *On quantum entanglement Sean Carroll states:* "So, even though you don't know what direction the electron is going to move in, and you don't know what direction the positron is going to move in — sorry, I'm already, I'm being, I'm being the person who I make fun of, I'm speaking as if these are real. Even though you don't know what direction you will measure the electron to be moving in, and you don't know what direction you will measure the positron to be moving in, you know that if you measure them both, they will be back to back. Because they need to have equal and opposite momentum, for those to cancel out. So what that means is, if you believe all those things, right away, this is why we believe there's only one wavefunction for the combined system of the electron and the positron. It's not an independent question, what direction are you going to measure the electron in? What direction are you going to measure the positron in? It's a statement you need to ask at the same time. That's entanglement, right there." *And on the entanglement of the entire Universe as a whole, Sean Carroll states:* "And then what you can do is take two different points of space-time, at some distance between them, and because there's still things there, because there still are fields even in empty space, you can say, is there entanglement between these two points of space? Because of the fields there. Are the — is the quantum state of the fields at these two points in space, is it entangled? And the answer is yes, it is always going to be entangled. And in fact, more than that, if the points are nearby, the fields will be highly entangled with each other. And if the fields are far away, the entanglement will be very, very low. Not zero, but very, very low. So in other words, there is a relationship between the distance between two points and their amount of entanglement in the lowest-energy state of a conventional quantum field theory. And what we say is, look, we start with an abstract quantum wavefunction. We don't have any such words like distance, or fields, for that matter, right? But we do have the word "entanglement." We can figure out, if you divide up the wavefunction into this bit and this bit, are those two bits entangled? There's mathematical ways to measure them using the mutual information, etc. So you can quantify the amount of entanglement between different pieces of the wavefunction. And then, rather than saying "the more distance, the less entanglement," you turn that on its head. You say, "Look, I know what the entanglement is." Let me assume, let me put out there as an ansatz [a mathematical assumption], that when the entanglement is strong, the distance is short. And I'm going to define something called the distance. And it's a small number when the entanglement is large, it's a big number when the entanglement is small."

SEVENTH ADDENDUM to January 3, 2024 Concept Of Gravity by Steve Harris Hubbard  
created March 17, 2024

RELATIVITY'S RELEVANCE via PRESSURE DIFFERENTIALS  
and  
DRUCK TERM RELEVANCE

The International NAC Society says it is publishing a paper they say disproves the Special Theory of Relativity. They claim that while this theory has been afforded foundational status, it exhibits null effects and has routinely been wrongly interpreted or mis-calculated. I am not referencing this news headline as supporting my Concept because I do not know how to interpret this news mathematically. I share it here to say that me “challenging” Einstein with this new Concept should not be summarily dismissed as an ignorant man’s delusional attempt for fame and because it leads into text relevant to the Concept Of Gravity offered below.

On Relativity:

In this Concept, if you increase the available energy-pressure from the Twistor Field by going “up” away from feeding masses, then it follows that the available energy-pressure will decrease by going down closer. This means that energy must be paid to climb out away from a mass.

However, in the same situation Relativity maths suggest that descending into a “gravity well” means becoming more negative. Relativity also suggests that being in a gravity well causes an object to have less total energy than an object not in a gravity well. At a place “up” far away from any gravity well, Relativity describes that place as having zero potential energy due to gravity. Relativity thus posits that it must be negative in a gravity well. None of this is logical to me other than it too demands that energy must be paid to climb out of that “well”.

So, with this being noted, why do I continue to say that Relativity’s classical maths are still relevant to future development of purely quantum theories based upon this Concept Of Gravity? Einstein’s  $E=MC^2$  alone is reason enough. It provided me the origin story on which to base my entire Concept! Also, others have pointed out that in Relativity formula’s left-side equals right-side framework, “pressure” and “attraction” are on teams balanced against each other. Therefore, Relativity appears to calculate the effects of this Concept’s pressure based actions as well as it calculates its attraction based paradigm because they are just two sides of his Relativity coin. Einstein had no textbooks or papers on quantum field theory available during his formative years in the late 1890s and so he created his own universe from scratch. He envisioned space and time as the arena in which his maths could work their magic. If one just renames spacetime as the Twistor Field, and improves the maths accuracy to quantum scales per Jonathan Oppenheim, one should be able to calculate the effects of fluid-dynamics-like pressure differentials quite accurately up to the size of our solar system.

I cannot specifically describe/defend my position due to my incompetence. However, I believe Luboš Motl’s commentary on Einstein’s Relativity may explain my position:

*The left hand side is the Einstein tensor and the right hand side is proportional to the stress energy tensor. For low velocities, the dominant component of the equation is the Poisson equation for Newton's gravity, which implies all the inverse squared distance law, and so on. However, in relativity, the energy is just 1 component of a 4-vector, the energy-momentum vector, and the density of anything is just one (the time-like) of 4 components of a vector which also includes the flux as the 3 spatial component.*

*In particular, the mass or energy density becomes just the component of a whole symmetric tensor that has components in four dimensions. Relativity implies that all of them are equally important because they can transform into each other by the Lorentz transformations.*

*In particular, the pressure appears as the doubly spatial components of the stress-energy tensor. For solids, this pressure is why the tensor contains the word "stress" - stress is a kind of pressure. For all materials, you may imagine that the pressure is why a gas or liquid will push a wall behind it. In relativity, all these components of the stress-energy tensor have to contribute to the corresponding components of the Einstein tensor.*

*Now I may return to the cosmological constant term. It is effectively the same thing as a stress energy tensor with a negative pressure: you could put it on the right-hand side. Such a form of uniform matter density with a negative pressure deforms the Minkowski space into de Sitter space that is still "maximally symmetric": dust with no pressure wouldn't be able to do so. I am convinced that any valid - however qualitative - explanation why pressure curves the spacetime in general relativity has to boil down to Einstein's equations in one way or another.*

#### On the Druck Term:

Writer Charlie Wood offered an article about Latifa Elouadrhiri and Peter Schweitzer's research on quark/gluon/gravity: *They asked: "How are matter and energy distributed?" "We don't know." They study the gravitational side of the proton. Specifically, the energy-momentum tensor. They referred to the "Druck Term", after the word for pressure in German. This term is "as important as mass and spin, and nobody knows what it is". Jefferson Lab physicists extracted the elusive Druck term and estimated that the internal pressures at the heart of the proton where the strong force generates pressures is about 10 times that at the heart of a neutron star. Farther out from the center, the pressure falls and eventually turns inward, as it must for the proton not to blow itself apart. They did not say where all that energy comes from.*

He continued: *New maps may also offer guidance toward resolving one of the deepest mysteries of the proton: why quarks bind themselves into protons at all. There's an intuitive argument that because the strong force between each pair of quarks intensifies as they get further apart, like an elastic band, quarks can never escape from their comrades. But protons are made from the lightest members of the quark family. And lightweight quarks can also be thought of as lengthy waves extending beyond the proton's surface. This picture suggests that the binding of the proton may come about not through the internal pulling of elastic bands but through some external interaction between these wavy, drawn-out quarks. The pressure map shows the attraction of the strong force extending all the way out to 1.4 femtometers and beyond, bolstering the argument for such alternative theories. This Concept Of Gravity is a framework in which such alternate theories can be developed. The "elastic bands" they refer to are emergent maximum-entanglement artifacts and the energy to empower them is indeed flowing in from Twistors outside of the old model's radius.*