

# **There can be only one!**

## **Wandering Toward a Goal**

\*\*\*

### **How can mindless mathematical laws give rise to aims and intention?**

Abstract: Science does not “wander”, it is not like the proverbial drunken sailor who let go of the light pole that is holding him up and tries to walk away, and it certainly does not wander toward any ‘specific’ goal. Science does not ‘specifically’ know what hand nature will deal it in the future explorations. The general goal, if it can be called that, is to describe nature as truthfully as possible. Science goes where nature and the universe lead and explains what nature and the universe present to science. Science is a straightforward logical process by which human thought evolves and sometimes revolutionizes how we view our world, while mathematics is a product of the aims and intention of science. In general, the only thing that could be construed as a goal in science is a complete understanding of how nature works and presents itself to us. In other words, science answers to nature, nature does not answer to science and especially not to any specific goal in the minds of scientists or others. Given this, once the obtuse nature of the given question is determined and the given question is translated into common English, the answer is just as easy as the question is ridiculous. The answer is simply that mathematical laws cannot give rise to aims and intentions which are normally considered aspects of consciousness. However, this raises the new question of why the given question is so obtuse in nature and needs to be translated to an answerable question, while answering this new question is significantly telling.

### **Introduction**

There are no such things as natural mathematical laws; mathematics is based on logical mental systems which were originally abstracted from nature and our experiences of the external world. Mathematicians have purified and distanced their subject from nature, physics and the natural world through a conscious program called ‘rigorization’ over the last two centuries. There has, in fact, been an open discussion over the past few decades whether mathematics is built into nature at all or whether it is a completely human created discipline and way of thinking. That discussion has never been conclusively ended, while there is no reason to believe that rigorized mathematics should be able to explain anything and/or everything that occurs in nature, so mathematics could not possibly provide the final answers to the scientific quest to understand and explain nature let alone “give rise to aims and intention”.

Our abstract mathematical systems and the theorems that define them must be internally consistent and thus internally provable, but not absolutely provable. Even if mathematical laws did exist they would not be mindless because all of mathematics is a product of mind and/or the mind’s interpretation and ordering of nature. The question “how can mindless mathematical laws give rise to aims and intention” appears to turn nature on its head in its inference that consciousness (in the form of aims and intents) must either be a product of, if not emerge from, natural mathematical laws and that is just Bad Science (BS). The theorems of

mathematics can only be 'proven', according to Gödel's theorem, by going outside of the original theorem to a larger and more comprehensive system. Science is instead based on explanatory hypotheses and theories that are also internally consistent, but can never be 'proven', only verified by further observation of nature and experimentation, while mathematics has nothing outside of itself to prove itself if subjected to the same standards as science.

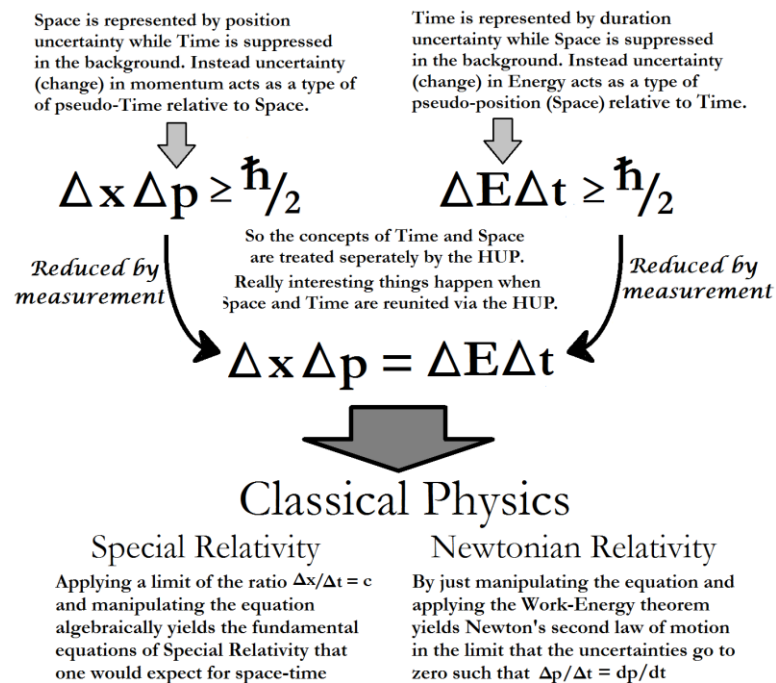
Mathematics, and this is far truer for advanced mathematical systems than it is for simple 'natural' mathematical systems such as the counting numbers, is only a product of the mind and our mental interpretation of the external world around us and nothing more. It does not represent some mythical or even mystical reality beyond the reality from which it evolved – our material reality as represented by science. Human minds interpret nature as fundamentally mathematical when in fact the mathematical systems originally developed from nature were extended beyond nature and natural boundaries of thought and are thus only expressions which can suggest new physical possibilities for science to investigate, not automatically create true physical realities. So the question "How can mindless mathematical laws give rise to aims and intention" is no more than an elaborate mathematical case of mistaking the finger pointing at the moon for the reality of the moon, mixed with an informational bit of "putting the cart before the horse".

### **What is everyone really looking for?**

The differences between mathematics and physics have recently gained added importance in modern physics where quantum theory is leaning more heavily on pure mathematics to guide it, while at the same time beginning to run into problems because physical reality does not follow predictions of rigorized mathematical systems. In fact, Quantum theory in the form of the HUP and quantum mechanics drives a stake directly through the very heart of nature and the fundamental nature of the concept of 'change', so basic to physics, by artificially dividing the natural connection between space and time upon which our physical reality and universe are founded. It may be logical to do this in the sense of mathematical rigorization and the subsequent rigorization attempts in quantum physics, but it is not such a good idea and has inhibited the advance of physics through unification for far too long. It does so by using matter as the pawn and plaything of momentum and energy, rather than the other way around which is perfectly natural. In this sense, the HUP is based solely on mathematical rigorization and not on true experiences and observations of nature and thus overly limits physics and nature in an unnatural way. So, although there are flaws in relativity theory, under these condition quantum theory has been the real 'fly in the ointment' as far as unification is concerned.

Given the different formulations of the HUP, which basically define the modern quantum theory, there are several ways to proceed that allow other physical models of reality to be included or unified with the quantum. By setting these two equations equal, we get classical physics again. (Beichler, 1992) For example, when the condition that the ratio of the uncertainty in position to time is less than or equal to the speed of light ( $\Delta x/\Delta t \leq c$ ), Einstein's equations for special relativity can be easily (algebraically) derived. On the other hand, when that condition is relaxed and the Work-energy theorem applied, Newton's second law of motion ( $F = dp/dt$ ) can also be derived. These derivations should demonstrate that quantum

mechanics and classical physics are completely compatible as well as indicate the direction to take for their unification.



So it would seem from HUP's expression of uncertainty that bringing space and time together suppresses the quantum effect as exemplified by the disappearance of Planck's constant, rendering the event physically real for consideration by classical physics. In other words, suppressing Planck's constant by combining the different quantum expressions for space and time results in a reality described by Newtonian physics and general relativity.

The mental split of space from time creates uncertainty (which does not really exist in nature) by invoking the Planck constant, demonstrating that  $\hbar$  is nothing more than the point-by-point binding constant of time to space. The point-by-point quantum space that is generated by the collection of all simultaneous quantum events represents an absolute space in comparison to Einstein and Newton's relative space, which also explains why the two have not yet been unified. The common but incorrect interpretation of the HUP as a

$$\Delta x \Delta p \geq \hbar/2 \quad \underline{OR} \quad \Delta E \Delta t \geq \hbar/2$$

situation is not correct, at least not as correct as a

$$\Delta x \Delta p \geq \hbar/2 \quad \underline{AND/OR} \quad \Delta E \Delta t \geq \hbar/2$$

situation. Choosing **OR** yields quantum mechanics, but choosing **AND** yields classical physics. From these new interpretations of the HUP, new conclusions can be reached that change the

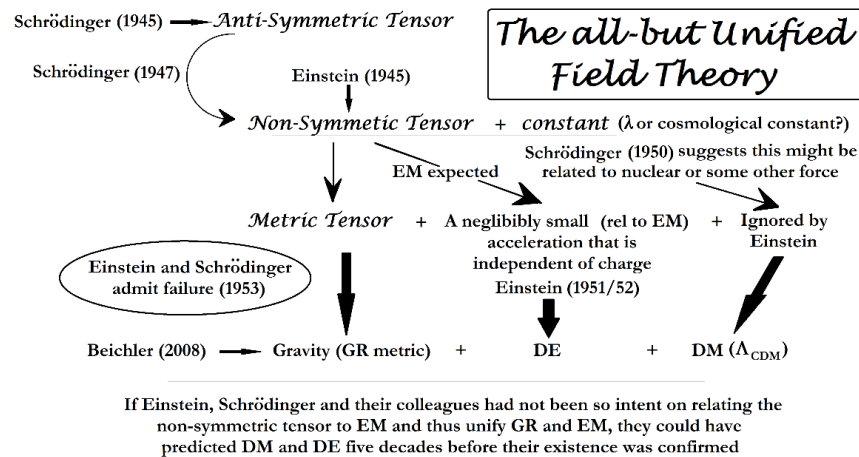
quantum paradigm and allow unification with relativity once the point/extension problem with Riemannian geometry has been fixed. (Beichler, 2012)

A false belief that relativity and quantum theories could only and will always be mutually incompatible (when they are only mutually incompatible with regard to three-dimensional space) and cannot be unified as equally fundamental aspects of nature, while retaining the major characteristics and concepts of each theory, has dominated physics and science since 1927. It is true that quantum indeterminism has no place in a continuous world since it is limited to the unconnected discrete point, just as a discrete point cannot exist along a continuous line (it would form a discontinuity) or surface, yet an infinite number of discrete physical 0-D point/twist Voids make up a continuous space-time manifold which is not necessarily indeterministic. So these two physics paradigms can also be unified quite easily and seamlessly by applying a modified Riemannian geometry that includes point-elements.

The continuous world of relativity can remain deterministic (in its extension) while the quantum world of the discrete point remains indeterministic (at least inside discrete points and only inside discrete points) in quantum absolute space. Under these circumstances, it is safe to conclude that the HUP is merely a physical limiting condition, not unlike the purely mathematical rigorous definition of an instantaneous velocity, that applies when circumstances (specific physical conditions) are experimentally established to unnaturally and thus artificially separate changes in time and three-dimensional space. Doing so would invoke Planck's constant, which means that it makes the most sense for the Planck constant to be interpreted as the binding constant for space and time – to yield space-time. (Beichler 1992, 1996, 2015) The quantum theory and relativity theory have now been unified, or at least the fundamental logical basis for their ultimate unification has been laid and this has only been made possible by noting the physical discrepancies that rigorized mathematics and pure mathematical thought has introduced into physics.

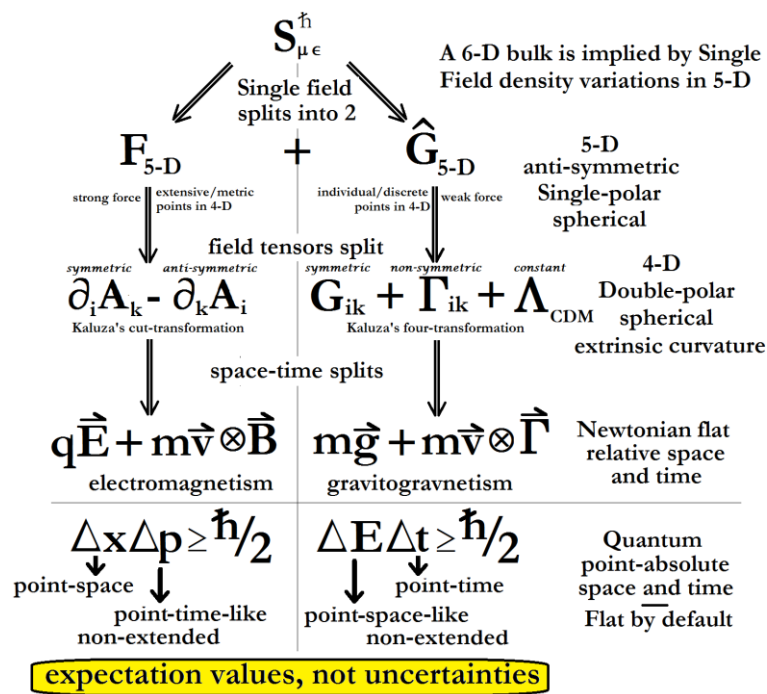
### **Advancing and unifying physics**

From this point onward, all that is necessary to unify all of physics is merely noting that discrete points in the quantum absolute space are equivalent to 0-D point/twist Voids in the Riemannian relative space-time continuum. Einstein and Schrödinger had very nearly finished unification in the early 1950s, but they were so intent on interpreting the anti-symmetric and non-symmetric tensors as ultimately electromagnetic in nature, they missed the fact that they had actually predicted the existence of Dark Matter (Schrodinger, 1950) and calculated the effect of Dark Energy on material particles. (Einstein, 1952)



Given the historical fact they were on the track of Dark Matter and Dark Energy rather than electromagnetism or the quantum, how then could they have modified this new structure to include the rest of physics?

To accomplish this is quite simple. All that is needed is to reconsider the validity of Kaluza's 1921 theory which was the only attempt that successfully unified general relativity and electromagnetism, although with overly restricted geometrical limitations. If a discrete geometrical point is equal to a Riemannian 0-D point/twist Void, then Einstein and Bergmann's (1938) interpretation of Kaluza's successful five-dimensional unification with electromagnetism can be extended to include a real macroscopically extended five-dimensional space-time whereby our four-dimensional double-polar spherical space-time continuum is embedded in a physically real five-dimensional single-polar spherical Riemannian manifold.



The resulting single field density tensor  $\mathbf{S}$  manifests in two different ways in five-dimensional space-time by splitting into two parts, representing point and extension, along the fourth direction of space. The point manifestation is far weaker and becomes the gravito-gravnetic tensor  $\mathbf{G}$  while four-dimensional extension manifests as the much stronger the electromagnetic tensor  $\mathbf{F}$ . These split again into two parts when reduced to our commonly experienced four-dimensional space-time.

For electromagnetism, the anti-symmetric Faraday tensor emerges and for Gravity the anti-symmetric Schrödinger-Einstein-Cartan tensor emerges. When space and time are split apart to yield classical physics, these emerge as the Lorentz force for electromagnetic and Heaviside force for Gravity. The Faraday tensor that currently represents electromagnetism is a primitive rank two tensor so there could be still more physics to emerge from the single field tensor  $\mathbf{F}_{5-D}$ , while the Schrödinger-Einstein anti-symmetric tensor  $\mathbf{G}_{5-D}$  splits into the Einstein non-symmetric tensor (normal metric + DE) and a constant equal to  $\Lambda_{\text{CDM}}$ . Splitting space from time yields Newtonian classical physics in relative extensive space, but also yields the HUP, if only in the realm of absolute point-space, representing a purely mathematical (and thus an unnatural mental/philosophical rather than true physical) interpretation of physical events at the quantum scale of reality. In other words, extension yields to points at the impossibly smallest level of reality invoking the possibility of considering immeasurably small variations independent of one another which manifests their (space-time) binding constant  $\hbar$  into observable and measurable quantities.

Just as the single field model accounts for the quantum and relativity simultaneously as products of the physical nature of space-time, the Standard Model of particles is completely uploadable into the single field model with only a change in the definition of particles. Real material particle must and can only have half-spin to conform to the geometrical requirements of the five-dimensional space-time continuum, while other Standard Model particles (non-half-spin) are either intermediate (between their quantum event creation and decay into real particles) when and if their existence can be verified by experiment, explained by some other means within the context of the single field theory or are just non-existent artifacts of the rigorized mathematics used for calculations in the Standard Model (gravitons, super-symmetric particles). Photons are the four-dimensional extensions of three-dimensional discrete points that lie along classical Maxwellian electromagnetic wave fronts, *i.e.*, the quantum equivalents of wave-front points in Huygens Principle. A single complete model of the atom, consisting of both the nucleus and outer electronic shells, emerges from the single field theory based solely on the quantized curvature of a space-time 'sheet' of infinitesimally thin parallel three-dimensional surfaces stacked in the fourth direction of space. (Beichler, 2015) From this basis a complete model of our universe emerges, even a physical model of life, mind and consciousness.

### **Finally, the question of consciousness**

Given this unification model, called the single field theory or SOFT, a new model of consciousness in our universe emerges from the very beginning, the Big Bang. According to the Big Bang model our present universe originated from a singularity that emerged from the absolute void about 14.3-14.6 billion years ago. The actual age of the universe is important, but

is not the expected age just stated. The expected age was determined from the original metric geometry which is only a geometry of measurements. An infinite amount of time would have passed in discrete point space before either time or extended space became measurable, *i.e.*, metric. So the metric calculation of age is not completely true and that is only one of the errors with current scientific and mathematical thinking.

The predicted singularity point (a “no-thing” divided by a nothing) must have morphed into a 0-D point Void (a nothing divided by a nothing) with virtual 3-Dness before expansion could ever have begun and this could have taken an infinite (undefined or indefinite) amount of time. The initial 0-D point Void would only grow large enough to have measurable although infinitesimally small extent, as predicted by general relativity, after another infinity of moments. In other words, the given or predicted age of the universe only takes into account the time when measurable extensions of space and time had emerged from the collection of an infinite number of immeasurably small infinitesimal 0-D point Voids and moments of time became measurable metric extensions. The true age of the universe is infinite. In any case, with the more comprehensive single field theory we can now turn the sequence of events around and instead of looking back in time to the singularity, we can look directly at the singularity and determine how it could have logically expanded to become our present physical/material universe.

It is logical to suppose, in the absence of any physical clues or evidence, that the singularity first morphed into a 0-D point Void which somehow differentiated itself from the absolute Void and so wanted to collapse or enfold back into that Void. It must have had some kind or type of primal-awareness of itself to do so, but it was virtually three-dimensional so it couldn't collapse or enfold back into the absolute Void. Instead, the attempt to do so caused it to duplicate itself as virtual torques in both directions of the fourth dimension of space characterizing new 0-D point Voids. This action rebounded back or unfolded into the virtual three-dimensions of space and created new 0-D point Voids in both directions of all three dimensions of space.

This process gave the original 0-D point Void a ‘twist’, (Clifford, 1873) a simultaneous spinning in all three dimensions, that dynamically stabilized the initial 0-D point/twist Void and all successively duplicated 0-D point/twist Voids as well as guaranteed their discrete nature relative to one another. This enfolding/unfolding process then duplicated itself each and every moment of time at each and every 0-D point/twist Void until an infinity of these discrete points yielded the first measurable three-dimensional extensions and measurable time. Only then did the metrics of general relativity and the quantum theory become valid enough to accurately describe the continuing explosive period of cosmic inflation.

This explosive rate of expansion continued unabated until quantum fluctuations or weaknesses in the three-dimensional surfaces caused a blow-out (like a balloon expanding beyond its elastic limit and blowing-out). Those first quantum blow-out points became protons, no anti-protons were formed, which began the end of cosmic inflation and gave our universe its initial material characteristics. Secondary quantum fluctuations resulted in a second partial blow-out, only this time electrons, characterized by the maximum curvature of a surface possible without actually blowing out, were formed. And then a third blowout attempt yielded neutrinos, which have the smallest possible amount of measurable curvature and no more. When the initial blowout occurred, the duplicating 0-D point/twist Voids began compactifying space in all four dimensions which necessitated the initiation of spatial elastic constants

between them. Thus the electric permittivity between three-dimensional points of space, the magnetic permeability between four-dimensional points of space and the constant speed of light came into existence, while the first electromagnetic waves were created in the form of the Cosmic Microwave background.

When the cosmic inflation ending event occurred and compactification of space began it vastly slowed down expansion resulting from the continuing 0-D point/twist Void duplication process, but did not completely stop expansion. At that moment, all of the point-wise virtual torques in the fourth dimension of space morphed into the single potential field out of which all of our material universe has emerged. However, each individual 0-D point/twist Void was also characterized by an inherent semi-physical primal-awareness of itself and the collective nature of that primal-awareness emerged as a 'semi-physical pre-consciousness potential field'.

Over the course of eons of time, this pre-consciousness field influenced normal matter to form ever more complex (matter/energy) systems until a sufficiently high level complexity emerged with special properties called life along with its characteristic mind (electric field) and consciousness (magnetic vector potential) patterns. The pre-consciousness field continued to act through quantum discrete points on living or animate matter to evolve ever more complex forms of life with higher and higher levels of mind and consciousness until Homo sapiens emerged as a complexity of mind with larger and more complex brains approximately 100-200 thousand years ago.

Now that our best science, in the form of the first successful unification of physics, has come of age and we are beginning to understand the reality of our world as a five-dimensional space-time continuum, we are approaching the evolutionary emergence of a new and even more complex level of human consciousness. Science can no longer progress unless an understanding of the consciousness that observes and interprets our three-dimensional material/physical world to create physics and mathematics is itself included in that physics as a four-dimensional spatial extension of our three-dimensional bodies and minds.

## Conclusion

The simple truth is that the foundations of mathematics are in far worse condition than physics and that is the fault of our lack of understanding of consciousness in physical terms. So mathematics cannot be used as the basis for a model of consciousness (aims and intentions) although a physical model of consciousness can be developed and stated mathematically. Our three-dimensional brain/body based consciousness (with aims and intentions) is over restricted and limited when it comes to the concepts of three-dimensional discrete points and extended distances. When the concept of a 0-dimensional (0-D) discrete point (point-element) is adopted and accounted for within the context of normal Riemannian geometry, the embedding of our three-dimensional space in a four-dimensional manifold becomes a physical necessity. While our three-dimensional material space is modeled as a three-dimensional double-polar spherical surface curved in the higher dimension, the higher embedding dimension can only be and must be a single-polar spherical space. (Beichler, 2012)

The concept of a five-dimensional space-time continuum represents the true physical being of our universe. The higher embedding dimension is not a mathematical gimmick that was specifically designed for the sole reason of developing a workable physical model of reality. The embedding space is real and necessary to give our three-dimensional material universe the

specific physical characteristics that we observe in nature and interpret through our minds and consciousness, even if our minds and consciousness cannot yet directly 'sense' the higher dimension of space. From this perspective, which is the basis of unifying the quantum and relativity as well as classical electromagnetism, thermodynamics and Newtonian physics, (Beichler, 2012, 2013, 2014, 2015, 2106), consciousness and all of its aspects can be fully explained without ever having to refer to rigorized mathematics which has only served to mislead science due to its own shortcomings.

However, not all is lost. In reality, the false interpretation established by forcing the HUP upon natural events at the quantum level can also be used to indicate the extent to which physical reality can allow the separation of simultaneous spatial and temporal measurements of the fundamental processes of natural reality. When this is taken into consideration, relativity and the quantum theory can be shown to be completely compatible and thus unifiable. Then, as the Riemannian metric geometry that is used in general relativity is expanded to account for the point-elements (discrete geometrical points on surfaces that Riemann purposely ignored) in conjunction and coordination with his metric-elements (extensions of lines, areas and volumes), a newly enhanced Riemannian geometry can completely account for the quantum and the unification of the quantum and relativity. (Beichler, 2012)

In other words, Einstein's unified field theory has been completed and it is far closer to a 'theory of everything' than any other theory in the history of physics. In fact, it includes a new model of physical evolution which incorporates the biological evolution of life, mind and consciousness, that is based on thermodynamics rather than the guesswork and speculations of modern physicists who have yet to see the light, have thus been unable to unify physics and have sought excuses to explain why they have failed. These excuses have taken the form of wild ideas, concepts and assumptions, for example, that their mentally derived 'mathematical laws' rule the universe rather than simply observing the universe and letting nature show us how she works as specified by the most basic version of the 'scientific method'.

## References

- Beichler, J.E. (1992, 1996, 2016). "Bubble, Bubble, Toil and Trouble: A fresh look at relativity, uncertainty and compatibility." *Yggdrasil: The Journal of Paraphysics*. 1996; "EPR-b: Bubble, bubble, toil and Trouble." *WISE Journal*, 5, 1, Spring 2016.
- Beichler, J.E. (2012) "The Tie that Binds." *The Physics of Reality: Space, Time, Matter, Cosmos*, Proceedings of the 8th Vigier Symposium. Also Available at
- Beichler, J.E. (2013) "The point of unification in theoretical physics." *Proceedings of the NPA*.
- Beichler, J.E. (2014). "Consciousness of Unification." *Vigier IX Symposium Proceedings*, October 2015.
- Beichler, J.E. (2014). "The evolutionary imperative of consciousness." Under publication in the *Journal of Conscientology* (IAC). Beichler, J.E. (2014). "Modern Fysics Phallacies: The best way not to unify physics." *Vigier IX Symposium Proceedings*, October 2015.
- Beichler, J.E. (2015). "Finishing Einstein Point by Point: The unification of quantum and relativity." *WISE Journal* 4, 4, 21 December 2015.
- Beichler, J.E. (2015). "A physics of Consciousness, psi and survival." *WISE Journal*, 4, 2, Summer.
- Beichler, J.E. (2015) *The Einstein Unified Field Theory Completed: A direct challenge to the basic assumptions, theories and direction of modern and post-modern physics* (1<sup>st</sup> edition). An unpublished manuscript.
- Beichler, J.E. (2016) "In the Beginning: Evolution physics, consciousness and our physical reality." Submitted for publication.
- Beichler, J.E. & Andrews, S. (2016) "Intuitive consciousness and the logic of single field physics: A conscious synergy of worldviews and theories". In publication.
- Beichler, J.E. (2017) "Quantized Space-Time Structure: The 0-D point/twist Void co-creator of the continuum and single field" *Proceedings of the Vigier X Symposium*, In publication.
- Beichler, J.E. (2017) "The Emergence of Neurocosmology: Evolution physics, consciousness, physical reality and our experiential universe." *Proceedings of the Vigier X Symposium*.
- Clifford, W.K. (1873) "Preliminary Sketch of Biquaternions." *Proceedings of the London Mathematical Society* (12 June 1873): 381-395.
- Einstein, A. & Bergmann, P.G. (1938) "On a Generalization of Kaluza's Theory of Electricity." *Annals of Mathematics* 39, 3: 683-701.
- Einstein, A. (1945) "A Generalization of the Relativity Theory of Gravitation." *Annals of Mathematics* 46: 578-84.
- Einstein, A. (1952). Letter to the editor. *Physical Review Letters*.
- Einstein, A. (1956) *Meaning of Relativity*. 6th ed. Princeton: Princeton University Press.
- Heaviside, O. (1893) "A Gravitational and Electromagnetic Analogy." *The Electrician* 31: 81-82.
- Kaluza, Theodor. (1921) "Zur Unitätsproblem der Physik". *Sitzungsberichte der Preussischen Akademie der Wissenschaften* 54: 966-972.
- Schrödinger, E. (1944) "The Affine Connexion in Physical Field Theory." *Nature* 53: 572-575.
- Schrödinger, E. (1951, 1960) *Space-Time Structure*. Cambridge, England: At the University Press.

All publications of Jim Beichler are available online at  
[vetha.academia.edu/JimBeichler](http://vetha.academia.edu/JimBeichler)