

**Neutron decay rates decrease under the influence of a magnetic field
proving the neutron's "magnetic current" function**
(*Scientific American article misunderstands its reported data*)

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The neutron is composed by the merging of the electron with the proton as the inverted quantum squared. This merger converts the electron to a "proto-neutrino" by detaching the proton's charge and encapsulating it in an external shell composed by the electron. This formulation is proved by quantum-dimensional mathematics which accurately predicts the measured energy gains and electron capture energies which accompany the conversion of a proton to a neutron during the positive beta decay of Fluorine-18 to Oxygen-18¹. The function of the "proto-neutrino" attached to the neutron is to impel a Curie nuclear magnetic current down proton-neutron chains within the nucleus².

Science has discovered that the neutron is stable only within the nucleus. When ejected from the nucleus (or when the neutron-to-proton ratio within the nucleus is unbalanced) the neutron reconverts to a proton fairly rapidly. Any proton-to-neutron conversion (positive beta decay) provides a "872.96 keV energy gain" and a "1.655 MeV electron capture energy."³ These energies can then be reapplied to converting the "proto-neutrino" back to an electron. This results in reattaching the charge to the nucleon to make it a proton again in fulfillment of the particle's required four-dimensional definition. This reversion to a proton automatically reoccurs when the neutron is removed from the nucleus.

A recent article in *Scientific American* has revealed two neutron-decay experts figuratively scratching their heads⁴. Both authors had been participants in two separate studies to determine the rate of decay for neutrons which had been liberated from the atomic nucleus. These two studies had used different methods to measure the rates of exo-nuclear neutron decay. One method measured decay of neutrons captured in a physical container (the "bottle trap" method) and the other measured neutrons decaying in a magnetic field which captured the the resultant protons (the "beam approach").

"In the beam method—used by Greene and others at the National Institute of Standards and Technology (NIST) Center for Neutron Research—we send a stream of cold neutrons through a magnetic field and a ring of high-voltage electrodes that traps positively charged particles. Because neutrons are electrically neutral they pass right through the trap. If, however, a neutron decays within the trap, the positively charged proton gets 'stuck.' Periodically we 'open' the trap and expel and count the neutrons. In principle, the proton trapping and detection are nearly perfect, and we make only very small corrections for the possibility that we missed decays."⁵

1 "A Quantum-Dimensional Model of Positive Beta Decay is revealed by Medical Science's "PET Scan" (New Model Accurately Calculates Reported Gamma Emission Energy)" Dawson, L. SRNRL.
<http://paradigmphysics.com/PET-scan-pos-beta-decay-theory2.pdf>

2 "The Curie-Quantum Nuclear Model and its Application to the Periodic Table of Elements;" Four Dimensional Atomic Structure, p.94. Dawson, L. The Paradigm Company. ISBN number 978-0941995351,

3 "A Quantum-Dimensional Model of Positive Beta Decay....." P. 5. Op. Cit.

4 "The Neutron Enigma," Greene, G.L. and Geltenbort, P. Scientific American, Vol 314, No.4, April 2016, p.36

5 Ibid. p. 39

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The two researchers who authored this article were confused by the fact that the decay rates as measured in a “field-neutral” bottle and decay rates measured within a magnetic field were not in agreement, in multiple experiments over a twenty five year period. The “field trap” method decreased the decay rate by an average 0.995%. The average decay time for the magnetic field was “888.0 seconds” while the average decay time for the field-neutral “bottle method” was “879.6 seconds” for an average difference of “8.4 seconds.”⁶ It took neutrons an average of eight seconds longer to decay within a magnetic field than it did to decay outside of the magnetic field. The probability of this difference occurring by chance was <0.0001 (1 in 10,000).

Unfortunately, the authors of this *Scientific American* article are incapable of properly evaluating their own data. They seem to be trapped in a mindset dominated by a “consensus physics” theory which disallows them to recognize the scientific implications of the research results. Decay measurements under two different conditions meet the requirements of a “dependent/independent variable” scientific test. Statistically significant differences in the dependent variable (decay rates) are explained by differences in the independent variable (presence of a magnetic field during the decay process). The research design establishes a clear “cause and effect” relationship. However, instead of considering the cause and effect relationship provided by the test, the researchers consider alternative causes outside of the test variables. They reach for some bizarre explanation coherent with a mystical particle theory so popular in consensus physics.

“An exciting explanation could be that it actually reflects some exotic physical phenomenon not yet discovered.....”

“Imagine, for example, that in addition to the regular beta decay, neutrons decayed via some previously unknown process that does not create the protons sought in beam experiments. The bottle experiments, which count the total number of 'lost' neutrons, would count both the neutrons that disappeared via beta decay as well as those that underwent this second process.....Meanwhile the beam experiment would dutifully record only beta decays that produce protons and would thus result in a larger value for the lifetime.....”

“A few theorists have taken this notion seriously. Zurab Berezhiani of the University of L'Aquila in Italy and his colleagues have suggested such a secondary process: a free neutron, they propose, might sometimes transform into a hypothesized 'mirror neutron' that no longer interacts with normal matter and thus would seem to disappear. Such mirror matter could contribute to the total amount of dark matter in the universe.”⁷

Instead of recognizing a “cause and effect” relationship between the dependent and independent variables, as provided by the scientific method, the author's look for some mystical particle output as the explanation of the decay time variance. This new particle is allegedly not subject to conventional measurement and can only be recognized “theoretically.” This illustrates the “anti-science” which is characteristic of the whole field of what is termed “particle physics.” Consensus “particle physics” is an irrational and unscientific approach to identifying the actual structure of the atom.

Particle physics are “fraudulent science” if science is a methodology by which cause and effect relationships in nature are identified and learned; if science is actually an epistemology which addresses practicing nature. Particle physics exclude what the theoretician Robert K.

6 Ibid. “Neutron Lifetime Measurements;” p. 40.

7 Ibid. “Exotic Physics;” . p. 40

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Merton called “structural functionalism.”⁸ *“The functional orientation has long been implicit in biology and physiology, as well as in the social sciences of anthropology, economics, and sociology.”*⁹ Merton explicitly described the “structural functionalism” which had been implicitly used to advance the biological sciences, thus providing a test for the adequacy of biological theory. The same “structural-functional test” should obviously be applied to our models of the atom and its constituent parts, the electrons in their orbitals and the neutrons and protons in the nucleus.

However, particle physics and its pantheon of alleged sub-atomic particles fails the “structural-functional test.” This is not true of the competitor to particle physics, the quantum-dimensional model of the atom. The alleged sub-atomic pantheon of particle physics has been revealed only in accelerators with little recognition of the alleged sub-particle’s function within the actual nucleus or atom. Particle physics is built upon the observation that the breakdown of atomic elements in accelerators reveals fractions which are called “quarks.”

“The [quark model](#) was independently proposed by physicists [Murray Gell-Mann](#) and [George Zweig](#) in 1964.^[8] Quarks were introduced as parts in an ordering scheme for hadrons,^[9] and there was scant evidence for the physical verification until [deep inelastic scattering](#) experiments at the [Stanford Linear Accelerator Center](#) confirmed the existence of quarks in 1968.^{[10][11]} Accelerator experiments have provided evidence for all six flavors. The [top quark](#) was the last to be discovered at [Fermilab](#) in 1995.^[8]”¹⁰

Quarks are fractions of particles in the atom and are only produced within accelerators. They are never observed naturally except in a very restricted sense as rare outputs of high-energy cosmic events. They are the “ordering scheme for hadrons” and the concept of “hadrons” founded all of particle physics. Since quarks contain both mass and charge they represent fractions of four-dimensional particles (protons) which fracture consistently along the force lines of the particle’s fourth dimensional definition (its charge). “Hadrons” are an artificial category proposed to introduce a new field designated “particle physics.”

“Hadrons are categorized into two families: [baryons](#), made of three [quarks](#), and [mesons](#), made of one quark and one [antiquark](#). [Protons](#) and [neutrons](#) are examples of baryons; [pions](#) are an example of a meson..... Experimentally, hadron physics is studied by colliding protons or nuclei of heavy elements such as lead, and detecting the debris in the produced particle showers.”¹¹

The fraudulent nature of “particle physics” is revealed by its explanation of neutron to proton conversions, an explanation which is incompatible with actual beta-decay empirical observations. It is claimed that both neutrons and protons are “hadron-baryons” in that they both contain three quarks. The difference between neutrons and protons is in the type of quark. Neutrons contain one “up” quark and two “down” quarks. Protons contain one “down” quark and two “up” quarks. Charge differences are not considered. The conversion of the neutron to the proton is explained by a theoretical particle (the “pion”) which has been constructed wholly out of the quark model and which can only be inferred from accelerator

8 “Merton on Structural Functionalism;” Elwell, F. W.

<http://www.faculty.rsu.edu/users/f/felwell/www/Theorists/Essays/Merton1.htm>

9 Ibid.

10 “Quark,” Wikipedia.

<https://en.wikipedia.org/wiki/Quark>

11 “Hadron,” Wikipedia.

<https://en.wikipedia.org/wiki/Hadron>

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particle shattering. The “pion” allegedly contains an 'up" quark and a “down” anti-quark.¹² The “pion” supposedly converts the neutron to a proton by quark matter/antimatter annihilation coupled with an exchange with another form of quark. The pion's “down anti-quark” allegedly annihilates one of the neutron's “down quarks” and replaces it with the “up quark” supposedly contained in the “pion.” It is thus said that the two “down” quarks and one “up” quark of the neutron have become the two “up” quarks and one “down” quark of the proton.

The problem with this formulation is that it completely ignores what nuclear physics has known about neutrons vs. protons and their conversions. For nearly a hundred years it has been known that the neutron is constructed by the merging of an electron with a proton creating a “charge neutral” particle with respect to magnetic fields. Secondly, it has been known for nearly a hundred years that the conversion of a neutron to a proton, or negative beta decay, is accompanied by the ejection of a “beta particle” electron. That is, neutron to proton conversion is not due to a particle “quark exchange” but due to a particle “electron emission/addition.”

The accelerator-driven “quark model” of neutron/proton conversion cannot explain why neutrons become unstable when they are freed from the nucleus nor why, as the *Scientific American* article shows, free neutrons are immune to a magnetic field trap yet still interact with the magnetic field by delaying their beta decay rate. There is nothing in the particle physics model which identifies the “functionality” of the electron-proton merger which creates a neutron.

In contrast, the quantum-dimensional atomic model identifies the “function” of the neutron within the nucleus as well as *why* the freed neutron must decay outside the nucleus and *why* its decay rate should be delayed by a magnetic field. All atomic particles are four dimensional with a charge which is a projection into the geometric dimension not contained in the particle's definition of volume.¹³ The proton's volume is strictly Euclidean with a “charge” projection into the quantum dimension missing from its volume. The electron's volume is composed of two Euclidean dimensions and the quantum dimension with a “charge” projection to the third Euclidean dimension not contained in its volume. Electron-proton bonds occur by the mutual attachment of the “charge” projections to the missing dimension contained in the opposing particle's definition of volume. This double bonding composes the “quantum-squared” as “the Euclidean bond *times* the quantum bond.” Neutrons are made by the inversion of the natural “quantum squared” bond between the proton and electron which merges the electron with the proton into a single mass. This merging of the electron with the proton, as the “inverted quantum squared,” detaches the proton's charge from the particle and encapsulates the charge in free space within a shell provided by the now-attached electron.¹⁴

The neutron is constructed and contained in the single binding system which comprises the atom. In the nucleus, chains of alternating neutrons and protons conduct a Curie magnetic current composed of freed charges of the protons. As the spin of electron charges produce a magnetic field, so the spin of proton charges produce the free magnetic current predicted by Pierre Curie. The charge of the proton is quantum which can only produce vacuum. The spin of the proton can only produce the southern pole of a magnetic field which is the “force vacuum pole.”¹⁵ Positive magnetic force can generate an opposing “force vacuum,” hence a

12 “Pions” Wikipedia

<https://en.wikipedia.org/wiki/Pion>

13 *The Quantum Dimension*, Dawson, L. The Paradigm Company. Boise Idaho. ISBN 9781517233099

14 “*The Quantum Geometric Model of the Neutron*,” Four Dimensional Atomic Structure, p. 71. Op. Cit.

15 “*Bar Magnet*.” Georgia State University .Hyperphysics;

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field. Negative magnetic force cannot produce positive magnetic force any more than vacuum can produce “anti-vacuum pressure.” Spinning protons possessing quantum charges are the equivalent of Curie's spinning “monopolar magnetics¹⁶” and can only produce his predicted magnetic current composed of freed (quantum) charges.

The function of the neutron is to impel these freed charges into a a current flow down the conduit of neutron-proton chains The “impeller” is the detached spinning free charge which is encapsulated in the shell produced by the electron and attached to the surface of the nucleon. The encapsulated spinning free charge is the “proto-neutrino” which may be converted to the neutrino when stripped from the neutron during the solar fusion of deuterium¹⁷.

The spinning free charge within the “proto-neutrino” provides “vacuum pressure” to the magnetic current by temporarily “sucking” the charge from the proton. “Vacuum pressure” is possible because quantum vacuum is sustained by force which is a version of Einstein's “cosmological constant.”¹⁸ The sucking of protonic charges and impelling them into a free charge magnetic current does two things. First it removes the charges as motivational forces and prevents like-charge repulsion collapse of the nucleus. Second, the vacuum pressure created pulls the elements tight and binds them together. Not only are the opposing neutrons and protons bound together by it (linear binding), but the spinning free charge of the proto-neutrino is also bound in its shell (lateral binding). There is actually no such thing as a mysterious “strong force” since the nuclei of atoms are bond by this rational quantum mechanical principle, albeit one which is not currently recognized.

The strength of the vacuum pressure within the neutron-proton chain conduit is determined by the number of proton charges inducted per “pulse¹⁹.” It has been demonstrated that converging flows of magnetic current require equal numbers of charges being dumped into an end-chain transmission proton. If two opposing currents contain unequal number of charges, the resultant unbalanced vacuum pressure from the opposing currents will “suck” an electron into the transmission proton, converting it to a neutron. This is proved by ¹⁸F beta decay²⁰.

The electron attached to the proton in a quantum-squared orbital is merged with the proton by nuclear vacuum back pressure in the magnetic-current conduit and converted to a proto-neutrino by inverting the quantum squared. The inverted quantum-squared proto-neutrino is retained by the neutron only so long as the nucleon resides in the neutron-proton conduit under vacuum pressure. This vacuum pressure is created by the spinning of the free charge within the proto-neutrino against the spin of the facing proton which produces a free Curie

<http://hyperphysics.phy-astr.gsu.edu/hbase/magnetic/elemag.html>

16 “*The Quantum Geometric Model of the Neutron;*” in *Four Dimensional Atomic Structure*, p. 82. Op. Cit.

17 “*A Quantum-Dimensional Model of Positive Beta Decay is revealed by Medical Science's 'PET Scan' (New Model Accurately Calculates Reported Gamma Emission Energy)*” Dawson, L. SRNRL. Op. Cit.

18 “*The Revelation that Vacuum is Quantum-Squared Provides a Rational Einsteinian Cosmological Constant...*” in *The Quantum Dimensional Review of Einstein vs. Newton*, p. 11. Dawson, L. The Paradigm Company, Boise, Idaho. ISBN 978-1516918096

19 The mass of the proto-neutrino is 2.5 times the mass of the merged electron. This mass increase is accomplished by the spin of the detached charge, the energy for which is provided by quantum force. By quantum-dimensional mathematics, the time of spin is equal to the energy gained. The time of spin required to build the embedded electron to 2.5 times its mass determines the rate at which proton charges are inducted into the magnetic current. This spin time constitutes one “pulse” of charge induction. **SEE:** *Four Dimensional Atomic Structure*; “*The Energy Conversion of the Proton to the Neutron;*” p.79. Op. Cit.

20 “*A Quantum-Dimensional Model of Positive Beta Decay is revealed by Medical Science's 'PET Scan' (New Model Accurately Calculates Reported Gamma Emission Energy)*”; Dawson, L. SRNRL.
[.http://paradigmphysics.com/PET-scan-pos-beta-decay-theory2.pdf](http://paradigmphysics.com/PET-scan-pos-beta-decay-theory2.pdf)

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magnetic current flow. The spinning of the proto-neutrino free charge outside the nucleus may be thought of as a water pump operating “dry,” or without water-pressure against the motor. Without magnetic current pressure against the proto-neutrino impeller, the energy supplying free-charge spin fairly rapidly reconverts the “inverted quantum squared” proto-neutrino back to an electron in a quantum squared orbital while reinvesting the encapsulated free charge back with the nucleon, converting it back to a proton. The *Scientific American* article reveals this reversion occurs within an average of 379.6 seconds. If, however, the proto-neutrino impeller is spinning within a magnetic field, the southern pole of the field (magnetic force vacuum pole) provides a slight artificial magnetic current pressure delaying the decay by an average of 8.4 seconds.

This is the actual explanation of the *Scientific American* data, but one which the authors could not recognize because of incorrect nuclear theory supplied by the erroneous field of particle physics. We will put aside for the moment that the particle physics “quark model” cannot account for the *function* of the neutron in the nucleus nor that the ratios of neutrons to protons (isotopes) control neutron/proton conversions (beta decay)²¹. Rather, we will concentrate on the inability of the “quark model” to account for the “mass to energy” and “energy to mass” conversions which occur during beta decay.

The most significant fact in nuclear science may be that the neutron is constructed by merging an electron with a proton with an approximate 2.5 *times* mass gain to the electron.²² This mass gain can only be explained as an “energy to mass” conversion which occurs during the electron merger process. The mass gain is predicted by the conversion of the electron from a quantum squared binding to an inverted quantum squared binding with the nucleon. All quantum squared geometric constructs are sustained by time force.²³ This time force cannot be constrained by matter (Newtonian definition of time) and, therefore, can supply the energy required to increase the electron's mass by 2.5 *times*²⁴.

The accelerator-based “quark model” cannot account for neutron and proton masses as varying by an exact multiple of a merged electron's mass. In fact, the accelerator data have not and cannot, at all, account for the masses of “hadron-baryons” (protons and neutrons). Original “quark theory” proposed that “baryons” were composed of variations in three “up” and “down” quarks. The theory predicted these quarks must have a mass of approximately one-third the mass of the proton. However, subsequent measurements of quark masses using accelerator shattering were much lower than predicted. “Up quark” mass is currently assigned as between 3.9139 and 2.0163 *times* the mass of the electron. “Down quark” mass is currently assigned as between 3.78344 and 2.6745 *times* the mass of the electron.²⁵ The mass of the proton as a multiple of electron mass is “1836.15267” *times*. The mass of the neutron is this value *plus* “2.525” *times* the mass of the electron²⁶. Measured quark masses by accelerator shattering simply cannot account for measured neutron/proton masses. The “quark model” can account for neutron/proton masses which are only 9-12 *times* the mass of the electron, not the actual “1836.15267” and “1838.67767” *times*. Georgia State University's Hyperphysics web-site explains the inconsistency by the following:

21 “A Quantum-Dimensional Model of Positive Beta Decay is revealed by Medical Science's 'PET Scan' (New Model Accurately Calculates Reported Gamma Emission Energy);” Dawson, L SRNRL. Op. Cit.

22 “The mass of the neutron can be calculated by the quantum geometric model,” in Four Dimensional Atomic Structure, p. 78. Op. Cit

23 “The Theory of Time-Enforced, Four-Dimensional Space,” in The Quantum Dimension, p. 112. Op. Cit.

24 “The energy conversion of the proton to the neutron,” in Four Dimensional Atomic Structure, p. 79. Op. Cit.

25 Calculated from reported mass values given as electron volts in “Quarks” Georgia State University Hyperphysics. <http://hyperphysics.phy-astr.gsu.edu/hbase/particles/quark.html>

26 “A Quantum-Dimensional Model of Positive Beta Decay is revealed by Medical Science's 'PET Scan' ...” Op. Cit.

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“The masses should not be taken too seriously, because the confinement of quarks implies that we cannot isolate them to measure their masses in a direct way. The masses must be implied indirectly from scattering experiments. The numbers in the table are very different from numbers previously quoted and are based on the July 2010 summary in Journal of Physics G, Review of Particle Physics, Particle Data Group. A summary can be found on the LBL site. These masses represent a strong departure from earlier approaches which treated the masses for the U and D as about 1/3 the mass of a proton, since in the quark model the proton has three quarks.”²⁷

In the 1960s the “quark model” for “baryons” (protons and neutrons) emerged which proposed that the particles were composed of three quarks. From this theory it was deduced that the “quark” must have a mass of approximately 1/3 that of the proton. However, the quarks existence could only be demonstrated by shattering atomic particles using accelerators. The mass of the shattered fractions of particles could only be implied by accelerator “scattering experiments.” In 2010, a summary (by the Particle Data Group) of multiple quark-mass determinations, using accelerators, showed a range of quark mass measurements which were much too low to account for the mass of the alleged “baryons.” Instead of rejecting the “quark model” theory as disproved by the only experimental conditions which could demonstrated the existence of “quarks,” we are advised that “*the masses [as experimentally determined] should not be taken too seriously.*” That is, the theory, as accepted by consensus in the 1960s, should be retained and the disproving empirical data collected over the next 40 years should be discounted.

The field of particle physics is nothing but an extension of quark theory and its alleged “hadron-baryon” explanation of the known nuclear particles. That the theory is being sustained in the face of continuous contradictory accelerator data indicates that the field is fraudulent science. Particle physics joined the “Big Bang revision²⁸” (from the 1960s) as a “consensus” corruption of science which deserted the scientific method.

Energy Equations for Exo-Nuclear Neutron Decay

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$$\left\{ \text{Energy sustaining the proto-neutrino} \right\} = \frac{(1.5)m_{\text{elec.}}(c^2)}{e} = \frac{1.2280657598E-13 \text{ joules}}{1.602176565E-19 \text{ coulombs}} = 766.500 \text{ keV}$$

30

$$\left\{ \text{Energy required to reconvert the proto-neutrino back to an electron} \right\} = \frac{(1.0)m_{\text{elec.}}(c^2)}{e} = \frac{8.1871050655E-14 \text{ joules}}{1.602176565E-19 \text{ coulombs}} = 511.00 \text{ keV}$$

The proto-neutrino must be continuously supplied by a quantum energy investment of “766,5 keV” to sustain the sub-particle. However, SRNRL research into field-controlled beta decay demonstrated that only “511.0 keV of energy” is required to reconvert the proto-neutrino back to an electron and eject it from the nucleon. Within the nucleus the sustaining excess of “255.5 keV” is absorbed by magnetic current pressure which is lost when the neutron is ejected from the nucleus. When the neutron is ejected from the nucleus, sustaining energy becomes sufficient to reconvert the neutron to a proton.

27 “Quarks” Georgia State University Hyperphysics. <http://hyperphysics.phy-astr.gsu.edu/hbase/particles/quark.html>

28 “Hubble’s “Edge of Universe” Photo Exposes 1960’s Big-Bang Deception and Confirms New Quantum-Dimensional Cosmology” Edge-of-Universe Photo Confirms Quantum-Dimensional Cosmology over Big Bang (Quantum Dimensional Physics) (Volume 2). Dawson, L, The Paradigm Company. ISBN: 978-1519237132

29 “Checking ‘Proto-Neutrino’ Energy Gains using Calculated vs. Reported ‘Electron Capture’ Energy;” in A Quantum-Dimensional Model of Positive Beta Decay is revealed by Medical Science’s “PET Scan” ... P. 5. Op. Cit.

30 VIDEO: “Part III-A (Technical): The Integration of Nuclear Capacitance by an External Capacitor “
<https://www.youtube.com/watch?v=s811V2KPexI>