IBM Watson Emotion Analysis

IBM today announced new and expanded cognitive APIs for developers that enhance Watson's emotional and visual senses, further extending the capabilities of the industry's largest and most diverse set of cognitive technologies and tools. [8]

The pursuit of an understanding of the base machinery of the mind led early researchers to anatomical exhaustion. With neuroscience now in the throes of molecular mayhem and a waning biochemical bliss, physics is spicing things up with a host of eclectic quantum, spin, and isotopic novelties. While increases in electron spin content have been linked to anesthetic effects, nuclear spins have recently been implicated in a more rarefied and subtle phenomenon— neural quantum processing. [7]

The hypothesis that there may be something quantum-like about the human mental function was put forward with "Spooky Activation at Distance" formula which attempted to model the effect that when a word's associative network is activated during study in memory experiment; it behaves like a quantum-entangled system. The human body is a constant flux of thousands of chemical/biological interactions and processes connecting molecules, cells, organs, and fluids, throughout the brain, body, and nervous system. Up until recently it was thought that all these interactions operated in a linear sequence, passing on information much like a runner passing the baton to the next runner. However, the latest findings in quantum biology and biophysics have discovered that there is in fact a tremendous degree of coherence within all living systems.

The accelerating electrons explain not only the Maxwell Equations and the Special Relativity, but the Heisenberg Uncertainty Relation, the Wave-Particle Duality and the electron's spin also, building the Bridge between the Classical and Quantum Theories.

The Planck Distribution Law of the electromagnetic oscillators explains the electron/proton mass rate and the Weak and Strong Interactions by the diffraction patterns. The Weak Interaction changes the diffraction patterns by moving the electric charge from one side to the other side of the diffraction pattern, which violates the CP and Time reversal symmetry.

The diffraction patterns and the locality of the self-maintaining electromagnetic potential explains also the Quantum Entanglement, giving it as a natural part of the Relativistic Quantum Theory and making possible to understand the Quantum Biology.

Contents

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Preface

The hypothesis that there may be something quantum-like about the human mental function was put forward with “Spooky Activation at Distance” formula which attempted to model the effect that when a word’s associative network is activated during study in memory experiment, it behaves like a quantum-entangled system. Models of cognitive agents and memory based on quantum collectives have been proposed by Subhash Kak. But he also points to specific problems of limits on observation and control of these memories due to fundamental logical reasons. [6]

The human body is a constant flux of thousands of chemical/biological interactions and processes connecting molecules, cells, organs, and fluids, throughout the brain, body, and nervous system. Up until recently it was thought that all these interactions operated in a linear sequence, passing on information much like a runner passing the baton to the next runner. However, the latest findings in quantum biology and biophysics have discovered that there is in fact a tremendous degree of coherence within all living systems. [5]

Quantum entanglement is a physical phenomenon that occurs when pairs or groups of particles are generated or interact in ways such that the quantum state of each particle cannot be described independently – instead, a quantum state may be given for the system as a whole. [4]

I think that we have a simple bridge between the classical and quantum mechanics by understanding the Heisenberg Uncertainty Relations. It makes clear that the particles are not point like but have a dx and dp uncertainty.

IBM announces new and advanced Watson APIs on the cloud

Three APIs, Tone Analyzer, Emotion Analysis and Visual Recognition, are now available in beta. Additionally, Text to Speech (TTS) has been updated with new emotional capabilities and is being re-released as Expressive TTS for general availability. These APIs are pushing the sensory boundaries of how humans and machines interact, and they are designed to improve how developers embed these technologies to create solutions that can think, perceive and empathize.

"We continue to advance the capabilities we offer developers on IBM's Watson platform to help this community create dynamic AI infused apps and services," said David Kenny, general manager of IBM Watson. "We are also simplifying the platform, making it easier to build, teach and deploy the technology. Together, these efforts will enable Watson to be applied in many more ways to address societal challenges."

IBM is also adding tooling capabilities and enhancing its SDKs (Node, Java, Python, and newly introduced iOS Swift and Unity) across the Watson portfolio and adding Application Starter Kits to make it easy and fast for developers to customize and build with Watson. All APIs are available through the IBM Watson Developer Cloud on Bluemix.

New Beta APIs Advance Emotional Intelligence and Image Recognition

Building on existing Watson APIs that draw on advances in natural language processing, machine learning and deep learning, Tone Analyzer, Emotion Analysis and Visual Recognition are now available in beta.

Tone Analyzer: Tone Analyzer has deepened its analysis capabilities in this beta release in order to give users better insights about their own tone in a piece of text.

Adding to its previous experimental understanding of nine traits across three tones – emotion (negative, cheerful, angry), social propensities (open, agreeable, conscientious) and writing style (analytical, confident, tentative) – Tone Analyzer now analyzes new emotions, including joy, disgust, fear, and sadness, as well as new social propensities, including extraversion and emotional range. Also new to the beta version, Tone Analyzer is moving from analyzing single words to analyzing entire sentences. This analysis is helpful in situations that require nuanced understanding. For example, in speech writing it can indicate how different remarks might come across to the audience, from exhibiting confidence and agreeableness to showing fear. In customer service, it can help analyze a variety of social, emotional and writing tones that influence the effectiveness of an exchange.

Watson Ecosystem Partner Connectidy has developed an innovative relationship science platform that leverages the Tone Analyzer beta to intuitively help users understand how messages to potential matches may come across. Dineen Tallering, President of Connectidy says, "Through the analysis of authentic language in real time, Tone Analyzer provides people with an unprecedented level of perspective into how their emotions and social propensities play out in their written word.

This is a critical piece of emotional intelligence because it enables us to continually educate users on how they appear to others. We are able to advance past static algorithms to achieve a level of cognitive insight that continuously learns and helps guide our users towards greater self awareness and better choices."

Emotion Analysis: IBM has added Emotion Analysis as a new beta function within the AlchemyLanguage suite of APIs. Emotion Analysis uses sophisticated natural language processing techniques to analyze external content and help users better understand the emotions of others. Developers can now go beyond identifying positive and negative sentiments and distinguish a broader range of emotions, including joy, fear, sadness, disgust and anger. By gaining this deeper understanding, Emotion Analysis can help identify new insights in areas like customer reviews, surveys, and social media posts. For example, in addition to knowing if product reviews are negative or positive, businesses can now identify if, for example, a change in a product feature prompted reactions of joy, anger or sadness among customers.

Visual Recognition: Moving beyond visual capabilities that allow systems to understand and tag an image, Visual Recognition is available now in beta and can be trained to recognize and classify images based on training material.

While other visual search engines can tag images with a fixed set of classifiers or generic terms, Visual Recognition allows developers to train Watson around custom classifiers for images – the same way users can teach Watson natural language classification – and build apps that visually identify unique concepts and ideas. This means that Visual Recognition is now customizable with results tailored to each user's specific needs. For example, a retailer might create a tag specific to a style of its pants in the new spring line so it can identify when an image appears in social media of someone wearing those pants.

Watson Integrates Emotional IQ into its Text to Speech API

To further advance emotional capabilities for cognitive systems, IBM has also incorporated emotional IQ into its existing Text to Speech API and is releasing Expressive TTS for general availability.

Expressive Text to Speech: Resulting from 12 years of research and development, Expressive TTS is now generally available and incorporates emotional IQ into the existing Watson TTS API. Cognitive systems can for the first time generate and deliver an advanced level of adaptive emotion in vocal interactions, meaning computers can not only understand natural language, tone and context, but respond with the appropriate inflection.

Previously, automated systems relied on a pre-determined, rules-based corpus of words. This has been categorized by limited emotional queues, such as "good news equals a raised tone" or "bad news equals a slowed tone." In creating Expressive TTS, IBM studied and decided on a specific set of expressive styles to frame this speech capability. To do this, the research team made significant enhancements to IBM's existing synthesis engine incorporating ideas from machine learning to allow for seamless switching across expressive styles. Developers now have more flexibility in building cognitive systems that can demonstrate sensitivity in human interactions

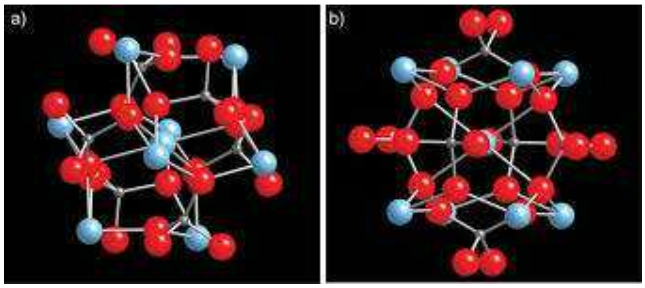
These new and expanded services are part of IBM's open Watson platform that now includes more than 30 Watson services and is available through the IBM Watson Developer Cloud on Bluemix. With a community of more than 80,000 developers, students, entrepreneurs and tech enthusiasts currently tapping into the cognitive computing platform to prototype and build cloud-based cognitive computing applications, these advancements are the latest example of IBM's commitment to empowering the developer community to build cognitive enabled apps and businesses with Watson.

IBM Watson: Pioneering a New Era of Computing

Watson represents a new era in computing called cognitive computing, where systems understand the world the way humans do: through senses, learning, and experience. Watson continuously learns, gaining in value and knowledge over time, from previous interactions. With the help of Watson, organizations are leveraging cognitive computing to transform industries, help professionals do their jobs better, and solve important challenges. To advance Watson, IBM has three dedicated business units: Watson, established for the development of cloud-delivered cognitive computing technologies that represent the commercialization of "artificial intelligence" or "AI" across a variety

of industries; Watson Health, dedicated to improving the ability of doctors, researchers and insurers and other related health organizations to surface new insights from data to and deliver personalized healthcare; and Watson IoT, focused on making sense of data embedded in for more than 9 billion connected devices operating in the world today, which generate 2.5 quintillion bytes of new data daily. [8]

Neural qubits: Quantum cognition based on synaptic nuclear spins



Matthew Fisher from University of California at Santa Barbara has hashed out one scenario by which it all could work in a new paper now on the Arxiv server. He notes that while small molecules and ions would rapidly entangle with a surrounding wet environment and therefore couldn't maintain quantum coherence on macroscopic time scales, nuclear spins are exceptional in being so weakly coupled to environmental degrees of freedom that prolonged phase coherence is likely.

How long, you might ask? That depends which element you are talking about, and the quantum value of its spin. Every element has a nucleus that can be characterized by half-integer spin-magnitude (I = 0;1=2;1...). Quantum decoherence of the nuclear spin is caused by magnetic and electric ?eld perturbations which effectively kill an hope for quantum processing. Fisher claims that the element with the optical coherence time Tcoh, and therefore the one ideally poised to host the putative neural qubit should have nuclear spin of 1/2. In a biochemical setting, spin 1/2 nuclei are weakly decohered only by magnetic ?elds while for spin >1/2 electric ?elds cause large decoherence. Spin 0 nuclei lack any associated magnetic dipole moment interaction with nuclear magnetic fields.

Fisher's interest in neural nuclear spin processing was stimulated by a paper that explored the effects of different isotopes of lithium on rats. Li naturally occurs in the ratio 92.6% Li-7 and 7.4% Li-6. Somewhat quizzically, mothers given the Li-7 isotope were less stimulated and ignored their pups while the Li-6 moms were maternalistic and nursed more. The interesting part for us here, is that while Li-7 has spin 3/2 and a short Tcoh of just a few seconds, Li-6 has an "honorary" spin 1/2 due to its electric dipole moment and a nice 5 minute long Tcoh.

Since Li isn't common to most life, and because phosphorus is the only common biochemical element that has spin 1/2, Fisher focused on organophosphates. These are the various common esters of inorganic phoshopate ions (Pi) like ATP and poly-phosphate chains (PPi). Although these froms of phosphate have a Tcoh on the order of a second and might serve as effective neural qubit transporters in the right context, Fisher theorized that a form of phosphate known as a Posner molecule might better serve for qubit memory storage. If calcium displaces the proton in phosphate ions, Posner clusters of Ca9(PO4)6 have significantly longer Tcoh times (potentially days) can form.

Previous x-ray diffraction studies have even suggested that amorphous calcium phosphate Posner clusters could be a key step in the mineralization of bone into hydroxyapaptite crystal.

The present discussion of regarding curious phosphate phenomena does not pop out fully-formed from in its own void. There is an ample if occaisionally controversial body of experimental findings dealing with magnetic isotope and field effects on the major phosphorylation reactions of life Regarding the enzyme catalyzed hydrolysis reaction of PPi into Pi + Pi, Fisher outlines a scenario whereby reaction rate is dependent on the nuclear spin state, ie. different for the singlet and triplet states. To pool ideas together under the rubric of actually performing quantum processing, some form of quantum entanglement and subsequent measurement is needed.

To get there we need to imagine entangled phosphate pairs released into extracellular fluid, as at a synapse, where they can combine with calcium ions to form multiple Posner molecules that in effect hold entangled phosphorus spins in memory. The magic happens if and when Posner molecules bind after being transported into two separate presynaptic terminals. At that point, the paper claims, they would be suseptible to melting in the acidified interior of the vesicle through which they entered, with subsequent synaptic calcium dynamics and entangled postsynaptic firing. The stability of Posner molecules appears to be exquisitely pH-sensitive in bone, and by implication elsewhere. Binding (into dimers and higher order clusters) affects their ability to displace surrounding water molecules and rotate through different symmetry axes, which correspondingly affects the rate at which protons can attack and melt them.

The details of all this hinge on, or are at least theorized to benefit from the particular qualities of the vesicle-based transporters installed on glutamatergic synapses. Originally discovered as sodium-dependant bit kidney phosphate transporters, sequence homology studies found similar transporters (VGLUTs) at the presynapse that act in a pH-dependant fashion to fill vesicles with glutamte. Fisher proposes that these VGLUTs have dual role first in taking up presumptive Posner molecules during brief exposures of the fusion pore during classical exocytosis, and then later operate much in reverse to express decomposed phosphorus into the larger presynaptic space. Thereafter, at least in briefly talking to Fisher, the potential exists to reform Posner clusters here, which can in turn re-melt with each generating 18 calcium ions to contribute to transmitter release.

VGLUTs themselves come in different forms and future work may help identify their respective roles. Other esoteric phenomena are undoubtedly also involved at a deep level in synaptic function, and one need not look to far abroad to find hint of them. For example, we previously proposed a potential mechanism where these pH-dependant glutamate transporters play a role in recently reported neural shock wave events in order to generalize the observation from acetylcholinergic synapses to other amino acid-based transmitter systems.

In the meantime, Fisher intends to re-explore the older Li isotope work and further refine the mechanisms and any potential shortfalls of the Posner conception. As alluded to above, electron spin itself is still a relatively obscure concept in biology save for a few niche revelations on things like chemical compasses or other radical pair-pair inspired biologics. Yet free radicals (unpaired electron spins) have a magnetic moment 1,000 or so times larger than that of a proton. Their presence alone could be a significant factor in things like phosphorus nuclear spin decoherence. [7]

Quantum Cognition

Human Perception

A Bi-stable perceptual phenomenon is a fascinating topic in the area of perception. If a stimulus has an ambiguous interpretation, such as a Necker cube, the interpretation tends to oscillate across time. Quantum models have been developed to predict the time period between oscillations and how these periods change with frequency of measurement. Quantum theory has also been used for modeling Gestalt perception, to account for interference effects obtained with measurements of ambiguous figures. [6]

Human memory

The hypothesis that there may be something quantum-like about the human mental function was put forward with “Spooky Activation at Distance” formula which attempted to model the effect that when a word’s associative network is activated during study in memory experiment, it behaves like a quantum-entangled system. Models of cognitive agents and memory based on quantum collectives have been proposed by Subhash Kak. But he also points to specific problems of limits on observation and control of these memories due to fundamental logical reasons. [6]

Knowledge representation

Concepts are basic cognitive phenomena, which provide the content for inference, explanation, and language understanding. Cognitive psychology has researched different approaches for understanding concepts including exemplars, prototypes, and neural networks, and different fundamental problems have been identified, such as the experimentally tested non classical behavior for the conjunction and disjunction of concepts, more specifically the Pet-Fish problem or guppy effect, and the overextension and under extension of typicality and membership weight for conjunction and disjunction. By and large, quantum cognition has drawn on quantum theory in three ways to model concepts.

Exploit the contextuality of quantum theory to account for the contextuality of concepts in cognition and language and the phenomenon of emergent properties when concepts combine.

Use quantum entanglement to model the semantics of concept combinations in a non-decompositional way, and to account for the emergent properties/associates/inferences in relation to concept combinations.

Use quantum superposition to account for the emergence of a new concept when concepts are combined, and as a consequence put forward an explanatory model for the Pet-Fish problem situation, and the overextension and under extension of membership weights for the conjunction and disjunction of concepts. The large amount of data collected by Hampton on the combination of two concepts can be modeled in a specific quantum-theoretic framework in Fock space where the observed deviations from classical set (fuzzy set) theory, the above mentioned over- and under-extension of membership weights, are explained in terms of contextual interactions, superposition, interference, entanglement and emergence. And, more, a cognitive test on a specific concept combination has been performed which directly reveals, through the violation of Bell’s inequalities, quantum entanglement between the component concepts. [6]

Quantum Consciousness

Extensive scientific investigation has found that a form of quantum coherence operates within living biological systems through what is known as biological excitations and biophoton emission. What this means is that metabolic energy is stored as a form of electromechanical and electromagnetic excitations. These coherent excitations are considered responsible for generating and maintaining long-range order via the transformation of energy and very weak electromagnetic signals. After nearly twenty years of experimental research, Fritz-Albert Popp put forward the hypothesis that biophotons are emitted from a coherent electrodynamics field within the living system.

What this means is that each living cell is giving off, or resonating, a biophoton field of coherent energy. If each cell is emitting this field, then the whole living system is, in effect, a resonating field-a ubiquitous nonlocal field. And since biophotons are the entities through which the living system communicates, there is near-instantaneous intercommunication throughout. And this, claims Popp, is the basis for coherent biological organization -- referred to as quantum coherence. This discovery led Popp to state that the capacity for evolution rests not on aggressive struggle and rivalry but on the capacity for communication and cooperation. In this sense the built-in capacity for species evolution is not based on the individual but rather living systems that are interlinked within a coherent whole: Living systems are thus neither the subjects alone, nor objects isolated, but both subjects and objects in a mutually communicating universe of meaning. . . . Just as the cells in an organism take on different tasks for the whole, different populations enfold information not only for themselves, but for all other organisms, expanding the consciousness of the whole, while at the same time becoming more and more aware of this collective consciousness.

Biophysicist Mae-Wan Ho describes how the living organism, including the human body, is coordinated throughout and is "coherent beyond our wildest dreams." It appears that every part of our body is "in communication with every other part through a dynamic, tunable, responsive, liquid crystalline medium that pervades the whole body, from organs and tissues to the interior of every cell."

What this tells us is that the medium of our bodies is a form of liquid crystal, an ideal transmitter of communication, resonance, and coherence. These relatively new developments in biophysics have discovered that all biological organisms are constituted of a liquid crystalline medium. Further, DNA is a liquid-crystal, lattice-type structure (which some refer to as a liquid crystal gel), whereby body cells are involved in a holographic instantaneous communication via the emitting of biophotons (a source based on light). This implies that all living biological organisms continuously emit radiations of light that form a field of coherence and communication. Moreover, biophysics has discovered that living organisms are permeated by quantum wave forms. [5]

Quantum Entanglement

Measurements of physical properties such as position, momentum, spin, polarization, etc. performed on entangled particles are found to be appropriately correlated. For example, if a pair of particles is generated in such a way that their total spin is known to be zero, and one particle is found to have clockwise spin on a certain axis, then the spin of the other particle, measured on the same axis, will be found to be counterclockwise. Because of the nature of quantum measurement, however, this behavior gives rise to effects that can appear paradoxical: any measurement of a

property of a particle can be seen as acting on that particle (e.g. by collapsing a number of superimposed states); and in the case of entangled particles, such action must be on the entangled system as a whole. It thus appears that one particle of an entangled pair "knows" what measurement has been performed on the other, and with what outcome, even though there is no known means for such information to be communicated between the particles, which at the time of measurement may be separated by arbitrarily large distances. [4]

The Bridge

The accelerating electrons explain not only the Maxwell Equations and the Special Relativity, but the Heisenberg Uncertainty Relation, the wave particle duality and the electron's spin also, building the bridge between the Classical and Quantum Theories. [1]

Accelerating charges

The moving charges are self maintain the electromagnetic field locally, causing their movement and this is the result of their acceleration under the force of this field. In the classical physics the charges will distributed along the electric current so that the electric potential lowering along the current, by linearly increasing the way they take every next time period because this accelerated motion.
The same thing happens on the atomic scale giving a dp impulse difference and a dx way difference between the different part of the not point like particles.

Relativistic effect

Another bridge between the classical and quantum mechanics in the realm of relativity is that the charge distribution is lowering in the reference frame of the accelerating charges linearly: $ds/dt = at$ (time coordinate), but in the reference frame of the current it is parabolic: $s = a/2\ t^2$ (geometric coordinate).

Heisenberg Uncertainty Relation

In the atomic scale the Heisenberg uncertainty relation gives the same result, since the moving electron in the atom accelerating in the electric field of the proton, causing a charge distribution on delta x position difference and with a delta p momentum difference such a way that they product is about the half Planck reduced constant. For the proton this delta x much less in the nucleon, than in the orbit of the electron in the atom, the delta p is much higher because of the greater proton mass.

This means that the electron and proton are not point like particles, but has a real charge distribution.

Wave – Particle Duality

The accelerating electrons explains the wave – particle duality of the electrons and photons, since the elementary charges are distributed on delta x position with delta p impulse and creating a wave packet of the electron. The photon gives the electromagnetic particle of the mediating force of the electrons electromagnetic field with the same distribution of wavelengths.

Atomic model

The constantly accelerating electron in the Hydrogen atom is moving on the equipotential line of the proton and it's kinetic and potential energy will be constant. Its energy will change only when it is changing its way to another equipotential line with another value of potential energy or getting free with enough kinetic energy. This means that the Rutherford-Bohr atomic model is right and only that changing acceleration of the electric charge causes radiation, not the steady acceleration. The steady acceleration of the charges only creates a centric parabolic steady electric field around the charge, the magnetic field. This gives the magnetic moment of the atoms, summing up the proton and electron magnetic moments caused by their circular motions and spins.

The Relativistic Bridge

Commonly accepted idea that the relativistic effect on the particle physics it is the fermions' spin - another unresolved problem in the classical concepts. If the electric charges can move only with accelerated motions in the self maintaining electromagnetic field, once upon a time they would reach the velocity of the electromagnetic field. The resolution of this problem is the spinning particle, constantly accelerating and not reaching the velocity of light because the acceleration is radial. One origin of the Quantum Physics is the Planck Distribution Law of the electromagnetic oscillators, giving equal intensity for 2 different wavelengths on any temperature. Any of these two wavelengths will give equal intensity diffraction patterns, building different asymmetric constructions, for example proton - electron structures (atoms), molecules, etc. Since the particles are centers of diffraction patterns they also have particle – wave duality as the electromagnetic waves have. [2]

The weak interaction

The weak interaction transforms an electric charge in the diffraction pattern from one side to the other side, causing an electric dipole momentum change, which violates the CP and time reversal symmetry. The Electroweak Interaction shows that the Weak Interaction is basically electromagnetic in nature. The arrow of time shows the entropy grows by changing the temperature dependent diffraction patterns of the electromagnetic oscillators.

Another important issue of the quark model is when one quark changes its flavor such that a linear oscillation transforms into plane oscillation or vice versa, changing the charge value with 1 or -1. This kind of change in the oscillation mode requires not only parity change, but also charge and time changes (CPT symmetry) resulting a right handed anti-neutrino or a left handed neutrino.

The right handed anti-neutrino and the left handed neutrino exist only because changing back the quark flavor could happen only in reverse, because they are different geometrical constructions, the u is 2 dimensional and positively charged and the d is 1 dimensional and negatively charged. It needs also a time reversal, because anti particle (anti neutrino) is involved.

The neutrino is a 1/2spin creator particle to make equal the spins of the weak interaction, for example neutron decay to 2 fermions, every particle is fermions with ½ spin. The weak interaction changes the entropy since more or less particles will give more or less freedom of movement. The entropy change is a result of temperature change and breaks the equality of oscillator diffraction intensity of the Maxwell–Boltzmann statistics. This way it changes the time coordinate measure and makes possible a different time dilation as of the special relativity.

The limit of the velocity of particles as the speed of light appropriate only for electrical charged particles, since the accelerated charges are self maintaining locally the accelerating electric force. The neutrinos are CP symmetry breaking particles compensated by time in the CPT symmetry, that is the time coordinate not works as in the electromagnetic interactions, consequently the speed of neutrinos is not limited by the speed of light.

The weak interaction T-asymmetry is in conjunction with the T-asymmetry of the second law of thermodynamics, meaning that locally lowering entropy (on extremely high temperature) causes the weak interaction, for example the Hydrogen fusion.

Probably because it is a spin creating movement changing linear oscillation to 2 dimensional oscillation by changing d to u quark and creating anti neutrino going back in time relative to the proton and electron created from the neutron, it seems that the anti neutrino fastest then the velocity of the photons created also in this weak interaction?

A quark flavor changing shows that it is a reflection changes movement and the CP- and T- symmetry breaking!!! This flavor changing oscillation could prove that it could be also on higher level such as atoms, molecules, probably big biological significant molecules and responsible on the aging of the life.

Important to mention that the weak interaction is always contains particles and antiparticles, where the neutrinos (antineutrinos) present the opposite side. It means by Feynman's interpretation that these particles present the backward time and probably because this they seem to move faster than the speed of light in the reference frame of the other side.

Finally since the weak interaction is an electric dipole change with ½ spin creating; it is limited by the velocity of the electromagnetic wave, so the neutrino's velocity cannot exceed the velocity of light.

The General Weak Interaction

The Weak Interactions T-asymmetry is in conjunction with the T-asymmetry of the Second Law of Thermodynamics, meaning that locally lowering entropy (on extremely high temperature) causes for example the Hydrogen fusion. The arrow of time by the Second Law of Thermodynamics shows the increasing entropy and decreasing information by the Weak Interaction, changing the temperature dependent diffraction patterns. A good example of this is the neutron decay, creating more particles with less known information about them.
The neutrino oscillation of the Weak Interaction shows that it is a general electric dipole change and it is possible to any other temperature dependent entropy and information changing diffraction pattern of atoms, molecules and even complicated biological living structures.
We can generalize the weak interaction on all of the decaying matter constructions, even on the biological too. This gives the limited lifetime for the biological constructions also by the arrow of time. There should be a new research space of the Quantum Information Science the 'general neutrino oscillation' for the greater then subatomic matter structures as an electric dipole change.

There is also connection between statistical physics and evolutionary biology, since the arrow of time is working in the biological evolution also.
The Fluctuation Theorem says that there is a probability that entropy will flow in a direction opposite to that dictated by the Second Law of Thermodynamics. In this case the Information is growing that is the matter formulas are emerging from the chaos. So the Weak Interaction has two directions, samples for one direction is the Neutron decay, and Hydrogen fusion is the opposite direction.

Fermions and Bosons

The fermions are the diffraction patterns of the bosons such a way that they are both sides of the same thing.

Van Der Waals force

Named after the Dutch scientist Johannes Diderik van der Waals – who first proposed it in 1873 to explain the behaviour of gases – it is a very weak force that only becomes relevant when atoms and molecules are very close together. Fluctuations in the electronic cloud of an atom mean that it will have an instantaneous dipole moment. This can induce a dipole moment in a nearby atom, the result being an attractive dipole–dipole interaction.

Electromagnetic inertia and mass

Electromagnetic Induction

Since the magnetic induction creates a negative electric field as a result of the changing acceleration, it works as an electromagnetic inertia, causing an electromagnetic mass. [1]

Relativistic change of mass

The increasing mass of the electric charges the result of the increasing inductive electric force acting against the accelerating force. The decreasing mass of the decreasing acceleration is the result of the inductive electric force acting against the decreasing force. This is the relativistic mass change explanation, especially importantly explaining the mass reduction in case of velocity decrease.

The frequency dependence of mass

Since $\boldsymbol{E = hv}$ and $\boldsymbol{E = mc^2}$, $\boldsymbol{m = hv\,/c^2}$ that is the $\boldsymbol{m}$ depends only on the $\boldsymbol{v}$ frequency. It means that the mass of the proton and electron are electromagnetic and the result of the electromagnetic induction, caused by the changing acceleration of the spinning and moving charge! It could be that the $\boldsymbol{m_o}$ inertial mass is the result of the spin, since this is the only accelerating motion of the electric charge. Since the accelerating motion has different frequency for the electron in the atom and the proton, they masses are different, also as the wavelengths on both sides of the diffraction pattern, giving equal intensity of radiation.

Electron – Proton mass rate

The Planck distribution law explains the different frequencies of the proton and electron, giving equal intensity to different lambda wavelengths! Also since the particles are diffraction patterns they have some closeness to each other – can be seen as a gravitational force. [2]

There is an asymmetry between the mass of the electric charges, for example proton and electron, can understood by the asymmetrical Planck Distribution Law. This temperature dependent energy distribution is asymmetric around the maximum intensity, where the annihilation of matter and antimatter is a high probability event. The asymmetric sides are creating different frequencies of electromagnetic radiations being in the same intensity level and compensating each other. One of these compensating ratios is the electron – proton mass ratio. The lower energy side has no compensating intensity level, it is the dark energy and the corresponding matter is the dark matter.

Gravity from the point of view of quantum physics

The Gravitational force

The gravitational attractive force is basically a magnetic force.

The same electric charges can attract one another by the magnetic force if they are moving parallel in the same direction. Since the electrically neutral matter is composed of negative and positive charges they need 2 photons to mediate this attractive force, one per charges. The Bing Bang caused parallel moving of the matter gives this magnetic force, experienced as gravitational force.

Since graviton is a tensor field, it has spin = 2, could be 2 photons with spin = 1 together.

You can think about photons as virtual electron – positron pairs, obtaining the necessary virtual mass for gravity.

The mass as seen before a result of the diffraction, for example the proton – electron mass rate Mp=1840 Me. In order to move one of these diffraction maximum (electron or proton) we need to intervene into the diffraction pattern with a force appropriate to the intensity of this diffraction maximum, means its intensity or mass.

The Big Bang caused acceleration created radial currents of the matter, and since the matter is composed of negative and positive charges, these currents are creating magnetic field and attracting forces between the parallel moving electric currents. This is the gravitational force experienced by the matter, and also the mass is result of the electromagnetic forces between the charged particles. The positive and negative charged currents attracts each other or by the magnetic forces or by the much stronger electrostatic forces!?

The gravitational force attracting the matter, causing concentration of the matter in a small space and leaving much space with low matter concentration: dark matter and energy.
There is an asymmetry between the mass of the electric charges, for example proton and electron, can understood by the asymmetrical Planck Distribution Law. This temperature dependent energy distribution is asymmetric around the maximum intensity, where the annihilation of matter and antimatter is a high probability event. The asymmetric sides are creating different frequencies of electromagnetic radiations being in the same intensity level and compensating each other. One of these compensating ratios is the electron – proton mass ratio. The lower energy side has no compensating intensity level, it is the dark energy and the corresponding matter is the dark matter.

The Higgs boson

By March 2013, the particle had been proven to behave, interact and decay in many of the expected ways predicted by the Standard Model, and was also tentatively confirmed to have + parity and zero spin, two fundamental criteria of a Higgs boson, making it also the first known scalar particle to be discovered in nature, although a number of other properties were not fully proven and some partial results do not yet precisely match those expected; in some cases data is also still awaited or being analyzed.

Since the Higgs boson is necessary to the W and Z bosons, the dipole change of the Weak interaction and the change in the magnetic effect caused gravitation must be conducted. The Wien law is also important to explain the Weak interaction, since it describes the T_{max} change and the diffraction patterns change. [2]

Higgs mechanism and Quantum Gravity

The magnetic induction creates a negative electric field, causing an electromagnetic inertia. Probably it is the mysterious Higgs field giving mass to the charged particles? We can think about the photon as an electron-positron pair, they have mass. The neutral particles are built from negative and positive charges, for example the neutron, decaying to proton and electron. The wave – particle duality makes sure that the particles are oscillating and creating magnetic induction as an inertial mass, explaining also the relativistic mass change. Higher frequency creates stronger magnetic induction, smaller frequency results lesser magnetic induction. It seems to me that the magnetic induction is the secret of the Higgs field.

In particle physics, the Higgs mechanism is a kind of mass generation mechanism, a process that gives mass to elementary particles. According to this theory, particles gain mass by interacting with the Higgs field that permeates all space. More precisely, the Higgs mechanism endows gauge bosons in a gauge theory with mass through absorption of Nambu–Goldstone bosons arising in spontaneous symmetry breaking.

The simplest implementation of the mechanism adds an extra Higgs field to the gauge theory. The spontaneous symmetry breaking of the underlying local symmetry triggers conversion of components of this Higgs field to Goldstone bosons which interact with (at least some of) the other fields in the theory, so as to produce mass terms for (at least some of) the gauge bosons. This mechanism may also leave behind elementary scalar (spin-0) particles, known as Higgs bosons.

In the Standard Model, the phrase "Higgs mechanism" refers specifically to the generation of masses for the $W^{\pm}$, and Z weak gauge bosons through electroweak symmetry breaking. The Large Hadron Collider at CERN announced results consistent with the Higgs particle on July 4, 2012 but stressed that further testing is needed to confirm the Standard Model.

What is the Spin?

So we know already that the new particle has spin zero or spin two and we could tell which one if we could detect the polarizations of the photons produced. Unfortunately this is difficult and neither ATLAS nor CMS are able to measure polarizations. The only direct and sure way to confirm that the particle is indeed a scalar is to plot the angular distribution of the photons in the rest frame of the centre of mass. A spin zero particles like the Higgs carries no directional information away from the original collision so the distribution will be even in all directions. This test will be possible when a

much larger number of events have been observed. In the mean time we can settle for less certain indirect indicators.

The Graviton

In physics, the graviton is a hypothetical elementary particle that mediates the force of gravitation in the framework of quantum field theory. If it exists, the graviton is expected to be massless (because the gravitational force appears to have unlimited range) and must be a spin-2 boson. The spin follows from the fact that the source of gravitation is the stress-energy tensor, a second-rank tensor (compared to electromagnetism's spin-1 photon, the source of which is the four-current, a first-rank tensor). Additionally, it can be shown that any massless spin-2 field would give rise to a force indistinguishable from gravitation, because a massless spin-2 field must couple to (interact with) the stress-energy tensor in the same way that the gravitational field does. This result suggests that, if a massless spin-2 particle is discovered, it must be the graviton, so that the only experimental verification needed for the graviton may simply be the discovery of a massless spin-2 particle. [3]

Conclusions

The hypothesis that there may be something quantum-like about the human mental function was put forward with “Spooky Activation at Distance” formula which attempted to model the effect that when a word’s associative network is activated during study in memory experiment, it behaves like a quantum-entangled system.

One of the most important conclusions is that the electric charges are moving in an accelerated way and even if their velocity is constant, they have an intrinsic acceleration anyway, the so called spin, since they need at least an intrinsic acceleration to make possible they movement .

The accelerated charges self-maintaining potential shows the locality of the relativity, working on the quantum level also. [1]

The bridge between the classical and quantum theory is based on this intrinsic acceleration of the spin, explaining also the Heisenberg Uncertainty Principle. The particle – wave duality of the electric charges and the photon makes certain that they are both sides of the same thing.

The Secret of Quantum Entanglement that the particles are diffraction patterns of the electromagnetic waves and this way their quantum states every time is the result of the quantum state of the intermediate electromagnetic waves. [2]

These relatively new developments in biophysics have discovered that all biological organisms are constituted of a liquid crystalline medium. Further, DNA is a liquid-crystal, lattice-type structure (which some refer to as a liquid crystal gel), whereby body cells are involved in a holographic instantaneous communication via the emitting of biophotons (a source based on light). This implies that all living biological organisms continuously emit radiations of light that form a field of coherence and communication. Moreover, biophysics has discovered that living organisms are permeated by quantum wave forms. [5]

Basing the gravitational force on the accelerating Universe caused magnetic force and the Planck Distribution Law of the electromagnetic waves caused diffraction gives us the basis to build a Unified Theory of the physical interactions also.

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