florentin smarandache

nidus idearum
painting by numbers

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unmatter

Florentin Smarandache

Nidus idearum.
Scilogs, VIII: painting by numbers
Grandview Heights, Ohio, 2022

Exchanging ideas with Robert Neil Boyd, Joseph Brenner, Ahmed Cevik, Victor Christianto, Adrian Curaj, Jean Dezert, Andrei-Lucian Drăgoi, Ervin Goldfain, Young Bae Jun, Yale Landsberg, Radu Munteanu, Paul Piștea, Viorel Roman, Ridvan Sahin, Said Broumi, Selcuk Topal, Eric W. Weisstein, Xiaohing Zhang.

Florentin Smarandache

Nidus idearum

Scilogs, VIII:
painting by numbers

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FOREWORD

Welcome into my scientific lab!

My **lab**[oratory] is a virtual facility with non-controlled conditions in which I mostly perform scientific meditation and chats: *a nest of ideas* (**nidus idearum**, in Latin).

I called the jottings herein *scilogs* (truncations of the words *scientific*, and gr. Λόγος – appealing rather to its original meanings "ground", "opinion", "expectation"), combining the welly of both science and informal (via internet) talks (in English, French, and Romanian).

*

In this *eighth book of scilogs* collected from my nest of ideas, one may find new and old questions and solutions, – in email messages to research colleagues, or replies, and personal notes handwritten on the planes to, and from international conferences, about all kind of topics, centered mostly on Paradoxism and Neutrosophy.

Feel free to budge in or just use the *scilogs* as open source for your own ideas!

*

Paradoxism is an international movement in science and culture, founded by Florentin Smarandache in 1980s, based on excessive use of antitheses, oxymoron, contradictions, and paradoxes.

During three decades (1980-2020) hundreds of authors from tenth of countries around the globe contributed papers to 15 international paradoxist anthologies.

In 1995, the author extended the paradoxism (based on opposites) to a new branch of philosophy called neutrosophy (based on opposites and their neutral), that gave birth to many scientific branches, such as: neutrosophic logic, neutrosophic set, neutrosophic probability and statistics, neutrosophic algebraic structures and so on with multiple applications in engineering, computer science, administrative work, medical research etc.

*

I coined the words "neutrosophy" and "neutrosophic" in my 1998 book: Florentin Smarandache, *Neutrosophy. Neutrosophic Probability, Set, and Logic*, ProQuest Information & Learning, Ann Arbor, Michigan, USA, 105 p., 1998; http://fs.unm.edu/eBook-neutrosophics6.pdf (last edition online).

Etymologically, "neutro-sophy" (noun) [French neutre < Latin neuter, neutral, and Greek sophia, skill/wisdom] means knowledge of neutral thought, while "neutrosophic" (adjective), means having the nature of, or having the characteristic of Neutrosophy.

*

THE MOST IMPORTANT PUBLICATIONS IN THE DEVELOPMENT OF NEUTROSOPHICS

1995-1998

- Smarandache generalizes the Yin Yang and Dialectics to Neutrosophy as a new branch of philosophy: http://fs.unm.edu/Neutrosophy-A-New-Branch-of-Philosophy.pdf ;

- introduces the Neutrosophic set / logic / probability / statistics;

- introduces the single-valued Neutrosophic Set (pp. 7-8); http://fs.unm.edu/eBook-Neutrosophics6.pdf

1998 & 2019

- Nonstandard Neutrosophic Logic, Set, Probability https://arxiv.org/ftp/arxiv/papers/1903/1903.04558.pdf

2002

- introduces special types of sets / probabilities / statistics / logics, such as:

 - intuitionistic set, paraconsistent set, faillibilist set, paradoxist set, pseudo-paradoxist set, tautological set, nihilist set, dialetheist set, trivialist set;

 - intuitionistic probability and statistics, paraconsistent probability and statistics, faillibilist probability and statistics, paradoxist probability and statistics, pseudo-paradoxist probability and statistics, tautological probability and statistics, nihilist probability and statistics, dialetheist probability and statistics, trivialist probability and statistics;

 - paradoxist logic (or paradoxism), pseudo-paradoxist logic (or pseudo-paradoxism), tautological logic (or tautologism);

http://fs.unm.edu/DefinitionsDerivedFromNeutrosophics.pdf

2003

- introduction of Neutrosophic numbers (a+b*I*, where I = indeterminacy)
- introduction of *I*-Neutrosophic algebraic structures
- introduction to Neutrosophic Cognitive Maps
    http://fs.unm.edu/NCMs.pdf

2005

- introduction of Interval Neutrosophic Set/Logic
    http://fs.unm.edu/INSL.pdf

2006

- introduction of the Degree of Dependence and Degree of Independence between T, I, and F
    http://fs.unm.edu/eBook-Neutrosophics6.pdf [p. 92]
    http://fs.unm.edu/NSS/DegreeOfDependenceAndIndependence.pdf

2007

- The Neutrosophic Set was extended [Smarandache, 2007] to Neutrosophic Overset (when some Neutrosophic component is > 1), and to Neutrosophic Underset (when some Neutrosophic component is < 0), and to and to Neutrosophic Offset (when some Neutrosophic components are off the interval [0, 1], i.e. some Neutrosophic component > 1 and some Neutrosophic component < 0).

Then, similarly, the Neutrosophic Logic / Measure / Probability / Statistics etc. were extended to respectively Neutrosophic Over/Under/Off Logic, Measure, Probability, Statistics etc.

http://fs.unm.edu/NSS/DegreesOf-Over-Under-Off-Membership.pdf

http://fs.unm.edu/SVNeutrosophicOverset-JMI.pdf

http://fs.unm.edu/IV-Neutrosophic-Overset-Underset-Offset.pdf

http://fs.unm.edu/NeutrosophicOversetUndersetOffset.pdf

- introduction of the Neutrosophic Tripolar Set and Neutrosophic Multipolar Set [Smarandache], and consequently

- the Neutrosophic Tripolar Graph and Neutrosophic Multipolar Graph

http://fs.unm.edu/eBook-Neutrosophics6.pdf [p. 93]

http://fs.unm.edu/IFS-generalized.pdf

2009

- introduction of N-norm and N-conorm

http://fs.unm.edu/N-normN-conorm.pdf

2013

- development of Neutrosophic Probability:

(chance that an event occurs, indeterminate chance of occurrence, chance that the event does not occur).

http://fs.unm.edu/NeutrosophicMeasureIntegralProbability.pdf

- Smarandache refined the components (T, I, F) as (T_1, T_2, ...; I_1, I_2, ...; F_1, F_2, ...)

http://fs.unm.edu/n-ValuedNeutrosophicLogic-PiP.pdf

2014

- introduction of the Law of Included Multiple-Middle (<A>; <neutA_1>, <neutA_2>, ..., <neutA_k>; <antiA>)

http://fs.unm.edu/LawIncludedMultiple-Middle.pdf

- development of Neutrosophic Statistics (indeterminacy is introduced into classical statistics with respect to the sample/population, or with respect to the individuals that only partially belong to a sample/population, with respect to the probability distributions, with respect to statistical inference methods, etc.)
http://fs.unm.edu/NS/NeutrosophicStatistics.htm
http://fs.unm.edu/NeutrosophicStatistics.pdf

2015
- introduction of Neutrosophic Precalculus and Neutrosophic Calculus
http://fs.unm.edu/NeutrosophicPrecalculusCalculus.pdf
- Refined Neutrosophic Numbers (a+ $b_1 I_1$ + $b_2 I_2$ + ... + $b_n I_n$)
- Neutrosophic Graphs
- Thesis-Antithesis-Neutrothesis, and Neutrosynthesis, Neutrosophic Axiomatic System, Neutrosophic dynamic systems, symbolic Neutrosophic logic, (t, i, f)-Neutrosophic Structures, *I*-Neutrosophic Structures, Refined Literal Indeterminacy, Quadruple Neutrosophic Algebraic Structures, Multiplication Law of Subindeterminacies:
   http://fs.unm.edu/SymbolicNeutrosophicTheory.pdf
- Introduction of the Subindeterminacies of the form $(I_0)_n$ = $k/0$, for $k \in \{0, 1, 2, ..., n-1\}$, into the ring of modulo integers Z_n - called natural neutrosophic indeterminacies (Vasantha-Smarandache)
   http://fs.unm.edu/MODNeutrosophicNumbers.pdf
- Introduction of Neutrosophic Crisp Set <A, B, C> and Topology (Salama & Smarandache)
   http://fs.unm.edu/NeutrosophicCrispSetTheory.pdf

2016

- Neutrosophic Multisets (as generalization of classical multisets)

   http://fs.unm.edu/NeutrosophicMultisets.htm

- Neutrosophic Triplet structures (F. Smarandache & M. Ali) and Neutrosophic Extended Triplet structures (Smarandache)

   http://fs.unm.edu/NeutrosophicTriplets.htm

- Neutrosophic Duplet structures

   http://fs.unm.edu/NeutrosophicDuplets.htm

2017 - 2020

- Neutrosophic Score, Accuracy, and Certainty Functions form a total order relationship on the set of (single-valued, interval-valued, and in general subset-valued) neutrosophic triplets (T, I, F); and these functions are used in MCDM (Multi-Criteria Decision Making):

http://fs.unm.edu/NSS/TheScoreAccuracyAndCertainty1.pdf

2017

- In biology Smarandache introduced the Theory of Neutrosophic Evolution: Degrees of Evolution, Indeterminacy or Neutrality, and Involution,

http://fs.unm.edu/neutrosophic-evolution-PP-49-13.pdf

- Introduction by F. Smarandache of Plithogeny (generalization of Dialectics and Neutrosophy), and Plithogenic Set/Logic/Probability/Statistics (generalization of fuzzy, intuitionistic fuzzy, neutrosophic set/logic/probability/statistics)

http://fs.unm.edu/PPS/

- Introduction of Plithogeny (as generalization of Yin-Yang, Dialectics, and Neutrosophy), and Plithogenic Set / Plithogenic Logic as generalization of MultiVariate Logic / Plithogenic Probability and Plithogenic Statistics as generalizations of MultiVariate Probability and Statistics (as generalization of fuzzy, intuitionistic fuzzy, neutrosophic set/logic/probability/statistics):

https://arxiv.org/ftp/arxiv/papers/1808/1808.03948.pdf

http://fs.unm.edu/Plithogeny.pdf

2018

- Introduction to Neutrosophic Psychology (Neutropsyche, Neutropsychic Personality, Eros / Aoristos / Thanatos, Refined Neutrosophic Memory: conscious, aconscious, unconscious, Neutropsychic Crisp Personality, Neutrosophic Body-Soul-Mind Functioning)

http://fs.unm.edu/NeutropsychicPersonality-ed3.pdf

- Generalization of the Soft Set to HyperSoft Set

http://fs.unm.edu/NSS/ExtensionOfSoftSetToHypersoftSet.pdf

2019

- Theory of Spiral Neutrosophic Human Evolution (Smarandache - Vatuiu):

http://fs.unm.edu/SpiralNeutrosophicEvolution.pdf

- Introduction to Neutrosophic Sociology (Neutrosociology) [neutrosophic concept, or (T, I, F)-concept, is a concept that is T% true, I% indeterminate, and F% false]

http://fs.unm.edu/Neutrosociology.pdf

- Refined Neutrosophic Crisp Set

http://fs.unm.edu/RefinedNeutrosophicCrispSet.pdf

- Generalization of the classical Algebraic Structures to NeutroAlgebraic Structures (or NeutroAlgebra)[whose operations and axioms are partially true, partially indeterminate, and partially false] and AntiAlgebraic Structures (or AntiAlgebra) [with operations and axioms totally false]:

http://fs.unm.edu/NA/NeutroAlgebra.htm

2020

- Introduction to Neutrosophic Genetics
http://fs.unm.edu/IJNS/NeutrosophicGenetics.pdf

2021

- As alternatives and generalizations of the Non-Euclidean Geometries, Smarandache introduced in 2021 the NeutroGeometry & AntiGeometry. While the Non-Euclidean Geometries resulted from the total negation of only one specific axiom (Euclid's Fifth Postulate), the AntiGeometry results from the total negation of any axiom and even of more axioms from any geometric axiomatic system (Euclid's, Hilbert's, etc.), and the NeutroAxiom results from the partial negation of one or more axioms [and no total negation of no axiom] from any geometric axiomatic system.

http://fs.unm.edu/NSS/NeutroGeometryAntiGeometry31.pdf

- Introduction of Plithogenic Logic as a generalization of MultiVariate Logic

http://fs.unm.edu/NSS/IntroductionPlithogenicLogic1.pdf

- Introduction of Plithogenic Probability and Statistics as generalizations of MultiVariate Probability and Statistics respectively

13

http://fs.unm.edu/NSS/PlithogenicProbabilityStatistics 20.pdf

1998 – 2021

Neutrosophic Applications in:

Artificial Intelligence, Information Systems, Computer Science, Cybernetics, Theory Methods, Mathematical Algebraic Structures, Applied Mathematics, Automation, Control Systems, Big Data, Engineering, Electrical, Electronic, Philosophy, Social Science, Psychology, Biology, Genetics, Biomedical, Engineering, Medical Informatics, Operational Research, Management Science, Imaging Science, Photographic Technology, Instruments, Instrumentation, Physics, Optics, Economics, Mechanics, Neurosciences, Radiology Nuclear, Medicine, Medical Imaging, Interdisciplinary Applications, Multidisciplinary Sciences etc.

[Xindong Peng and Jingguo Dai, A bibliometric analysis of neutrosophic set: two decades review from 1998 to 2017, Artificial Intelligence Review, Springer, 18 August 2018; http://fs.unm.edu/BibliometricNeutrosophy.pdf].

F.S.

CONTENTS

TOPICS

Catching the Ideas

to Robert Neil Boyd

About improving or developing senses through the Higher Octaves, as you say...

Why should I need to improve my vision when I'd never be able to see as a microscope for example.

And we have tools for improving our senses.

Maybe you tell us how to better use our brain, because it is said that only 5% of its capacity we use.

Also, how can we contact to the universe knowledge... the ideas flow into the air... how to catch them?

Not everybody has body antennas to catch them...

Neutrosophic Physics

Florentin Smarandache's note

The photon as particle and wave, is into the neutrosophic physics (mixture of opposites).

Unmatter

Robert Neil Boyd

"Unmatter" is aether. It is pre-physical and originates both matter and forces. "Anti-matter" is just ordinary matter particles, spinning in the opposite direction.

Unmatter: pairs of quarks and antiquarks

Florentin Smarandache

Unmatter combinations as pairs of quarks (q) and antiquarks (a), for q ≥ 1 and a ≥ 1. Each combination has n = q+a ≥ 2 quarks and antiquarks which preserve the colorless.

— If *n* = 2, we have: *qa* (biquark - for example the mesons and antimessons), so the pair is (1,1);

— If *n* = 3 we have no unmatter combination, so the pair is (0,0);

— If *n* = 4, we have *qqaa* (tetraquark), the pair is (2,2);

— If *n* = 5, we have *qqqqa*, *qaaaa* (pentaquark), so the pairs are (4,1) and (1,4);

— If *n* = 6, we have *qqqaaa* (hexaquark), whence (3,3);

— If *n* = 7, we have *qqqqqaa*, *qqaaaaa* (septiquark), whence (5,2),(2,5);

— If *n* = 8, we have *qqqqqqqa*, *qqqqaaaa*, *qaaaaaaa* (octoquark), whence (7,1),(4,4),(1,7);

— If *n* = 9, we have *qqqqqqaaa*, *qqqaaaaaa* (nonaquark), whence (6,3),(3,6);

— If *n* = 10, we have *qqqqqqqqaa*, *qqqqqaaaaa*, *qqaaaaaaaa* (decaquark), whence (8,2), (4,4), (2,8); ...

Comment

If (*s,t*) is a pair in the sequence, then (*s+3u,t-3u*) is also a pair in the sequence for any integer *u* such that both

$$s+3u > 0 \text{ and } t-3u > 0.$$

References

Florentin Smarandache, "A New Form of Matter - Unmatter, Formed by Particles and Anti-Particles", *Bulletin of Pure and Applied Sciences*, Vol. 23D, No. 2, 173-177, 2004.

Florentin Smarandache, "Matter, Antimatter and Unmatter", *Infinite Energy*, Concord, NH, USA, Vol. 11, Issue 62, 50-51, 2005.

Formula

i) If *n* is even, *n=2k*, then its pairs are: $(k+3p, k-3p)$, where *p* is an integer such that both $k+3p>0$ and $k-3p>0$.

ii) If *n* is odd, *n=2k+1*, then its pairs are $(k+3p+2, k-3p-1)$, where *p* is an integer such that both $k+3p+2>0$ and $k-3p-1>0$.

Example

The table starts with rows of even length at *n=2* as:

(1,1)

(0,0)

(2,2)

(4,1),(1,4)

(3,3)

(5,2),(2,5)

where the first column 1,0,2,4,3,5,7,6,... obeys

$$T(n,1) = T(n-1,1) + T(n-3,1) - T(n-3,1).$$

Smarandache Hypothesis

To Radu Munteanu; Adrian Curaj

Good news from CERN: the speed of light of being overpassed by neutrinos, so my hypothesis ridiculed by the mainstream is being confirmed or at least partially confirmed.

Links

My hypothesis of existence of a speed greater than the speed of light might be true:
[http://scienceworld.wolfram.com/physics/SmarandacheHypo thesis.html](http://scienceworld.wolfram.com/physics/SmarandacheHypothesis.html).

See the news:
http://news.yahoo.com/strange-particles-may-travel-faster-light-breaking-laws-192010201.html.

There is no speed limit in the universe

Eric W. Weisstein

[http://scienceworld.wolfram.com/physics/Smarandache Hypothesis.html](http://scienceworld.wolfram.com/physics/SmarandacheHypothesis.html)

Smarandache (1998) proposed that as a consequence of the Einstein-Podolsky-Rosen paradox, there is no speed limit in the universe (i.e., the speed of light c is not a maximum at which information can be transmitted) and that arbitrary speeds of information or mass transfer can occur. These assertions fly in the face of both theory and experiment, as they violate both Einstein's special theory of relativity and causality and lack any experimental support.

It is true that modern experiments have demonstrated the existence of certain types of measurable superluminal phenomena. However, none of these experiments are in conflict with causality or special relativity, since no information or physical object actually travels at speeds $v > c$ to produce the observed phenomena.

Reference

Smarandache, F. "There Is No Speed Barrier in the Universe." Bull. Pure Appl. Sci., Delhi, India 17D, 61, 1998. http://fs.unm.eduNoSpLim.htm.

There Is No Speed Barrier in the Universe

Florentin Smarandache

In a short paper, as an extension and consequence of Einstein-Podolski-Rosen paradox and Bell's inequality, I promoted the hypothesis that: There is no speed barrier in the universe and one can construct arbitrary speeds, and also one asks if it's possible to have an infinite speed (instantaneous transmission)?

Future research: to study the composition of faster-than-light velocities and what happens with the laws of physics at faster-than-light velocities?

[An early version, based on a 1972 paper, was presented at the Universidad de Blumenau, Brazil, May-June 1993, in a Tour Conference on "Paradoxism in Literature and Science"; and at the University of Kishinev, in a Scientific Conference chaired by Professors Gheorghe Ciocan, Ion Goian, and Vasile Marin, in December 1994.]

1. Introduction:

What's new in science (physics)?

According to researchers from the common group of the University of Innsbruck in Austria and US National Institute of Standards and Technology (starting from December 1997, Rainer Blatt, David Wineland et al.):

— photon is a bit of light, the quantum of electromagnetic radiation (quantum is the smallest amount of energy that a system can gain or lose);

— polarization refers to the direction and characteristics of the light wave vibration;

— if one uses the entanglement phenomenon, in order to transfer the polarization between two photons, then: whatever happens to one is the opposite of what happens to the other; hence, their polarizations are opposite of each other;

— in quantum mechanics, objects such as subatomic particles do not have specific, fixed characteristic at any given instant in time until they are measured;

— suppose a certain physical process produces a pair of entangled particles A and B (having opposite or complementary characteristics), which fly off into space in the opposite direction and, when they are billions of miles apart, one measures particle A; because B is the opposite, the act of measuring A instantaneously tells B what to be; therefore those instructions would somehow have to travel between A and B faster than the speed of light; hence, one can extend the Einstein-Podolsky-Rosen paradox and Bell's inequality and assert that the light speed is not a speed barrier in the universe;

— such results were also obtained by: Nicolas Gisin at the University of Geneva, Switzerland, who successfully teleported quantum bits, or qubits,

between two labs over 2km of coiled cable. But the actual distance between the two labs was about 55m;

— researchers from the University of Vienna and the Austrian Academy of Science (Rupert Ursin et al. have carried out successful teleportation with particles of light over a distance of 600m across the River Danube in Austria); researchers from Australia National University and many others.

2. Scientific Hypothesis:

We even promote the hypothesis that: there is no speed barrier in the universe, which would theoretically be proved by increasing, in the previous example, the distance between particles *A* and *B* as much as the universe allows it, and then measuring particle *A*.

3. An Open Question now:

If the space is infinite, is the maximum speed infinite?

"This Smarandache hypothesis is controversially interpreted by scientists. Some say that it violates the theory of relativity and the principle of causality, others support the ideas that this hypothesis works for particles with no mass or imaginary mass, in non-locality, through tunneling effect, or in other (extra-)dimension(s)." [Kamla John]

Scott Owens' answer to Hans Gunter in an e-mail from January 22, 2001 (the last one forwarded it to the author): "It appears that the only things the Smarandache hypothesis can be applied to are entities that do not have real mass or energy or information.

The best example I can come up with is the difference between the wavefront velocity of a photon and the phase velocity. It is common for the phase velocity to exceed the wavefront velocity, *c*, but that does not mean that any real energy is traveling faster than *c*. So, while it is possible to construct arbitrary speeds from zero in infinite, the superluminal speeds can only apply to purely imaginary entities or components."

Would it be possible to accelerate a photon (or another particle traveling at, say, 0.99c and thus to get speed greater than *c* (where *c* is the speed of light)?

Future possible research

It would be interesting to study the composition of two velocities v and w in the cases when:

$$v < c \text{ and } w = c$$
$$v = c \text{ and } w = c$$
$$v > c \text{ and } w = c$$
$$v > c \text{ and } w > c$$
$$v < c \text{ and } w = \infty$$
$$v = c \text{ and } w = \infty$$
$$v > c \text{ and } w = \infty$$
$$v = \infty \text{ and } w = \infty$$

What happens with the laws of physics in each of these cases?

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and http://fs.unm.eduphysics.htm,

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Infinite Velocity Propagations

Robert Neil Boyd

I have been studying and performing experiments in SubQuantum and Quantum information physics for more than 30 years. I've been nominated for the Nobel

Prize for finding 14 additional Mobius transformation (bi-linear) solutions to the Maxwell equations, in addition to the original Mobius transformation solution by V. Fock of Germany. These solutions are regarding several varieties of electromagnetic propagations that can have any velocity from zero to an infinite velocity and every velocity in between. They all carry information. There has recently been experimental confirmation of infinite velocity propagations which carry information.

Legătura dintre STR și GTR

Ervin Goldfain

STR (*special theory of relativity*) este un caz limită al lui GTR (*general theory of relativity*). Corespunde cazului în care metrica non-Euclideană se poate aproxima suficient de bine cu metrica lui Minkowski (curbura spațiutimpului este "weak" și poate fi reprezentată ca o geometrie "locally flat").

De exemplu, dacă gravitația într-o regiune limitată a spațiutimpului este suficient de slabă ca să poată fi ignorată, accelerația produsă de gravitație asupra maselor în mișcare este de asemenea neglijabilă, sistemul de referință devine inerțial și STR devine aplicabilă.

În fizica particulelor elementare se folosește foarte des această aproximație.

Motivul este că gravitația este extrem de slabă în comparație cu forțele la nivel cuantic (electromagnetism, forță slabă și forță tare a cromodinamicii cuantice).

STR la nivel cuantic este indestructibil legată de teoria relativistă a câmpurilor QFT (*quantum field theory*).

Paul Dirac a fost "părintele" lui QFT, combinând cu succes STR cu *Quantum Mechanics* și formulând pentru prima oară teoria relativistă a electronului.

Teoria lui Dirac a dus la descoperirea antimateriei și la prezicerea corectă a momentului magnetic al electronului.

Resolution of the Smarandache Paradoxes

[Paradox 1a]

1) Sorites Paradox (associated with Eubulides of Miletus (fourth century B.C.): Our visible world is composed of a totality of invisible particles.

a) An invisible particle does not form a visible object, nor do two invisible particles, three invisible particles, etc. However, at some point, the collection of invisible particles becomes large enough to form a visible object, but there is apparently no definite point where this occurs.

<div align="right">Robert Neil Boyd</div>

The statement was true in the 4th century BC, but it is not true now. We can now measure the masses of a vast array of elemental particles. And we now know that there are such ratios as "moles" in chemistry telling us how many atoms are involved in the situation. So today we can make such determinations.

There are fabrication processes in the manufacture of integrated circuits that are capable of actually arranging very precisely, each atom in the fabrication.

One example of these techniques is the use of epitaxal deposition, which is a one atom thick deposition of material. Screening and masking techniques allow atom-by-atom structuring to occur. These circuits can be small enough so that Cooper pairing is impossible and quantum phase-slips occur in the energized circuit. However, the problem has now shifted into the domains which are smaller than our present ability to perceive with our instrumentations. Typically colliders are used to attempt to make measurements of the elemental particles, and recent data seems to be pointing strongly to a realm of particles even smaller than quarks, which may indeed comprise quarks, if such creatures exist in the first place. (What we are calling quarks may be something else entirely, perhaps organizations of yet smaller particles.)

I hold that there is a vaster array of entities smaller than the Planck length, and have developed methods for imaging such entities. The ZPE fluctuations cause curvatures of space on the order of 10e-66 cm., well smaller than the Planck length. What sort of entities are responsible for these enormous curvatures? I think that there are subquantum particles.

[Paradox 1b]

b) A similar paradox is developed in an opposite direction. It is always possible to remove a particle from an object in such a way that what is left is still a visible object. However, repeating and repeating this process, at some point, the visible object is

decomposed so that the left part becomes invisible, but there is no definite point where this occurs.

Robert Neil Boyd

There is, these days.

[Paradox 1b (Continued)]
Generally, between and there is no clear distinction, no exact frontier. Where does really end and begin? One extends Zadeh's "fuzzy set" term to the "neutrosophic set" concept.

Robert Neil Boyd

The boundary conditions are always very interesting. Those conditions which are both A and NOT A, yet neither A nor NOT A. Korzibski referred to these conditions as "NULL A". I call them boundary layers. They are a study in themselves, because boundary layers comprise a third state, and arise often.
[Paradox 2]
2) Uncertainty Paradox: Large matter, which is under the 'determinist principle', is formed by a totality of elementary particles, which are under Heisenberg's 'indeterminacy principle'.

Robert Neil Boyd

Uncertainty does not apply to monochromatic photons, nor indeed to any photonic system, by logical extension.

See: http://www.rialian.com/rnboyd/heisenburg-refute.htm.

Indeterminacy only applies where there are elements of chance involved, most particularly involving systems of particles, which are QUITE susceptible to zitterbewegung, while photons remain largely unaffected by it.

[Paradox 3]
3) Unstable Paradox: Stable matter is formed by unstable elementary particles.

Robert Neil Boyd

Unstable? The lifetimes of protons and neutrons are enormous. (Electrons and positrons are another matter entirely.)

[Paradox 4]
4) Short Time Living Paradox: Long time living matter is formed by very short time living elementary particles.

Robert Neil Boyd

I don't see things this way.

Anyway, the way out of all this, is the realization that Consciousness is involved in all these processes and is the organization force which is responsible for many phenomena. Consciousness is not limited to human beings. In fact, it has been demonstrated that all observables have some manner of consciousness,

however rudimentary. Consciousness is a holographic energetic having soliton-like [coherent] properties.

The best descriptions of the energetics of Consciousness arise from the works of V. Poponin (DNA Phantom Effect) and from a recent paper which shows that the radiation pattern of a symplectic E/M antenna is directly altered by the attention, intention, and emotional condition of the operators of the transmission facility. This direct influence of the symplectic E/M also causes a divergence in the quantum field, and thus we have evidence that there is a direct relation between the quantum field and Consciousness. Let us NEVER forget that there is a vast array of types of Consciousness, all of which will have some effect on the quantum field. Also see the works of Andrej Detela. For example: http://www.zynet.co.uk/imprint/Tucson/4.htm#Physical.

I am working with some of the folks at PEAR to develop a modification of the Mindsong and Orion devices that will allow these circuits to map non-physical and disincarnate entities, as well as the energetics of the commonly known life-forms.

http://worlds-within-worlds.org/resolutionofsmarandache.php

Smarandache Quantum Paradoxes

Florentin Smarandache's answer

[Paradox 1a]

1) Sorites Paradox: Our visible world is composed of a totality of invisible particles.

a) An invisible particle does not form a visible object, nor do two invisible particles, three invisible particles, etc. However, at some point, the collection of invisible particles becomes large enough to form a visible object, but there is apparently no definite point where this occurs.

— Neil says that this paradox is solved, but I think it is not.

It is true that now our electronic tools permit powerful microscopes to see smaller and smaller elementary particles.

Yes, if the microuniverse is infinite and if the array of particles getting smaller and smaller approaches an infinite number, it is still not clear which one is the threshold between visible and invisible particles.

The powerful tools permit us to push the threshold closer and closer toward the microinfinity.

[Paradox 1b]

b) A similar paradox is developed in an opposite direction. It is always possible to remove a particle from an object in such a way that what is left is still a visible object. However, repeating and repeating this process, at some point, the visible object is decomposed so that the left part becomes invisible, but there is no definite point where this occurs.

2) Uncertainty Paradox: Large matter, which is under the 'determinist principle', is formed by a totality of elementary particles, which are under Heisenberg's 'indeterminacy principle'.

— Neil says that indeterminacy only applied where there are elements of chance involved.

This may be as randomness in probability. Hazard too?

But there is indeterminacy due to the mixture of opposites.

Heisenberg's indeterminist principle is refutted... and he got a Nobel Prize!

Uncertainty does not apply to photonic matter, says Neil, but what about to the other matter?

3) Unstable Paradox: Stable matter is formed by unstable elementary particles.

[R. N. Boyd]

Unstable? The lifetimes of protons and neutrons are enormous. (Electrons and positrons are another matter entirely.)

[Paradox 4]

4) Short Time Living Paradox: Long time living matter is formed by very short time living elementary particles.

— We may talk about the lifetime of particles lesser than protons and neutrons, that produced in laboratory experiments have a lifetime of tiny fractions of a second. The idea that consciousness is involved in processes [Heisenberg's ?] and that all observables have consciousnesses, and consciousness is a holographic energy...

But I do not see how these resolve or explain Paradox 4 ?

All is possible, the impossible too

My paradox „All is possible, the impossible too" is not a Sorites paradox, since in a Sorites paradox the frontier between two opposites is unclear, vague.

In my paradox the <antiA> is totally included into <A>, which is not a Sorites paradox since it does not talk about any frontier between opposites.

More paradoxes

More of my paradoxes can be read here:
- ☐ http://mathworld.wolfram.com/SmarandacheParadox.html
- ☐ http://fs.unm.edu/paradox.htm (connected to the above)
- ☐ http://fs.unm.edu/Paradox2.htm
- ☐ http://fs.unm.edu/SocialThreeQuartersParadox.htm
- ☐ http://fs.unm.edu/DivineThreeQuartersParadoxes.htm

Your comments are welcome.

Instantaneous Physics

To Victor Christianto

If you are interested in cooperation, let's do it in superluminal physics or even in instantaneous physics (i.e. how the laws of physics behave at such speeds, how different they are from the subluminal speed physics that we know?).

Victor Christianto

Instantaneous force is known as "action at a distance" in Newtonian physics.

Florentin Smarandache

Now, "action at distance" in Newtonian physics means action at any speed, or some fixed speed?

Victor Christianto

Action at distance can only be found in electro dynamics (Wheeler and Einstein).

Victor Christianto

New experiment by Van Flandern etc. shows the speed of gravity is not c (the speed of light), and not instantaneous. It is superluminal, but not infinite velocity.

Then the speed of Coulomb potential, it can be shown it is instantaneous.

Physical Laws are valid in Abstract Spaces

To Paul Piştea

I agree, the natural constants are actually... variables (!).

And many physical laws are valid in... abstract spaces!

Superluminal & Underluminal

To Victor Christianto

At superluminal speed — the physical laws behave differently than at underluminal speed? And if so, is any pattern that shows the deviation for each physical law?

I wonder if a law *L,* which is valid in our world at underluminal speed, will it be 100% valid at superluminal speed, or only partially valid, partially false, and maybe partially indeterminate (as in neutrosophic logic)?

Geometry on the Mobius Strip

To Yale Landsberg

I think it is a good idea to construct a geometry on a Mobius Strip.

Yale Landsberg's reply

Agreed! And one that can be used to make Möbius enclosures might be useful in many new ways, yes?

Florentin Smarandache's answer

I constructed such different geometries:
http://fs.unm.edu/Geometries.htm.

NeutroGeometry & AntiGeometry as alternatives and generalizations of the Non-Euclidean Geometries:
http://fs.unm.edu/NSS/NeutroGeometryAntiGeometry31.pdf.

I'll think more on your Mobius Strip.

Gravity, Zero-gravity, Antigravity

To Victor Christianto

Can you connect somehow: *(gravity, zero-gravity, antigravity)* as in neutrosophy? Similarly, what about: *(resonance, oscillation between resonance and nonresonance, nonresonance)* — any applications?

Two things are *resonant* if they have the same frequency. But *resonant* things may become *non-resonant* (changing their frequencies), then again getting to the same frequency (an oscillation between *resonant* and *non-resonant*). Quantitative, qualitative, and a mixture of them (partially quantitative and partially qualitative).

Intellect & Affection

To Victor Christianto

We are all neutrosophic beings, since we use both our intellect and our affection!

Neutrosophic Systems

To Victor Christianto

Each Neutrosophic System evolves to a saturation point, then because of the fatigue and self-sufficiency, the system starts to devolve. Nothing is eternal!

Infinite Multispace

To Victor Christianto

Our universe is an Infinite MultiSpace with infinite multistructure, i.e. our universe has infinitely many spaces, each one with its own structure. The spaces and their corresponding structures are interconnected in some degree.

From duality to triality

To Joseph Brenner

Instead of *duality* (dynamics of opposites, as in Dialectics) in Logic in Reality, we can consider *triality* (dynamics of opposites and their neutrals, as in neutrosophy).

Neutrosophy is a generalization of Dialectics and of Yin-Yang Chinese Philosophy.

In neutrosophy, the dynamics of an idea/item/concept etc. <A> with its opposite <antiA> and with their neutral <neutA> are considered..

The neutral was ignored by Dialectics and by Yin-Yang, but I think it is not fear since in many situations the neutral takes part on one side or the other side of the opposites.

Besides oppositional relationships throughout reality there also are neutral relationships throughout reality.

Law of Included Middle (which actually fits perfectly into the rhythm of neutrosophy, i.e. between the opposites <A> and <antiA> there is the middle <neutA>) was extended to the Law of Included Multiple-Middles, because there are many such cases in Refined Neutrosophy, where <neutA> can be refined into <$neutA_1$>, <$neutA_2$>), …; therefore, between <A> and <antiA> there are multiple subneutrals: <$neutA_1$>, <$neutA_2$>), etc.

For example, between the opposite colors <white> and <black> there are many intermediate (middle) colors: yellow, blue, red etc.

In the neutral part we may have a blending/mixture of opposites, for example:

<neutA> = 40% of <A> embedded with 60% of <antiA>.

Therefore, in between Intensity and Extensity we may have a mixture of both.

Similarly in between the opposites Actuality and Potentiality, or Identity and Diversity, or Homogeneity and Heterogeneity

Ontic and Epistemic Applications of Neutrosophics

To Joseph Brenner

We see things from different points of view: you — from a spiritual/philosophical one, me — from a technical/scientific (applicative) one. There are both ontic applications and epistemic applications of neutrosophic logic / set / probability / statistics.

The neutral state interacts differently from an application to another: the neutrals may get in one side of the opposites or in the other. Or the neutrals may be a balancing point for the opposites.

The neutral in many cases is "indeterminacy" between the opposites: for example, between *truth* and *falsehood* one has *indeterminacy* states (blending of truth and falsehood).

One has static neutrosophic logic (depending in T, I, F), and dynamic neutrosophic logic { when the truth T*(t)*, indeterminacy/neutrality I*(t)*, and falsehood F*(t)* vary upon the time *t* }.

For dynamic neutrosophic logic the neutrality changes. Dynamicity may depend on other parameters

as well (not only on time), when the values of neutrosophic logic change.

I agree with your "on its way" to becomes 40% actual and 60% potential (it is dynamicity).

Neutrosophic logic reflects/studies processes and changes.

I do not know how to interpret your *energy*, from a philosophical point of view to a technical point of view?

About 'evolution' that you mention into your email, I may continue with the concept of "neutrosophic evolution", where one has, with respect to a given process, *degrees of evolution* with respect to some parameters, *degrees of involution* with respect to other parameters, and *degrees of neutrality/indeterminacy* with respect to other parameters [this idea came to me after being to Darwin's Galapagos archipelago].

Creation and Discreation

To Joseph Brenner

Creation and *Discreation* of matter are two processes.

But you may have *creation* from one point of view (parameter) and *discreation* from another point of view (another parameter).

For example, when I was to Galapagos Islands, I observed that there is not only a Darwin's process of *evolution* (because of moving from an environment to another), but also a process of *involution* (with respect to other body parts), and *neutrality* (*neither evolution nor involution* - with respect to other body parts).

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Reference

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Mind Control

Victor Christianto

Mind control (*mind kontrolle - mk ultra*) was supposed to be an experiment carried out along with some psychiatrists (for instance in Berkeley it was led by Dr. Elizabeth Rauscher and team). I am no expert to distinguish conspiracy tales from the truth. Just check some movies such as: *Manchurian candidate, Jason Bourne series*.

Space and Time as independent

Florentin Smarandache

We may say sometimes dimension 4, i. e. 3 dimensions for the real space we live in, and the fourth dimension for the time: *Space and Time as independent.*

Because at the coordinates for example (4, 5, 6), i.e. $x = 4$, $y = 5$, $z = 6$, at time for example $t_1 = 20$ there may be a person John;

— but at the same coordinates (4, 5, 6) at another time $t_2 = 21$ there may be another person George.

NeutroAlgebraic and AntiAlgebraic Structures

Florentin Smarandache

We have three parts, as in neutrosophy:

<Axiom, NeutroAxiom, AntiAxiom>,

where NeutroAxiom is the same notation as NeutAxiom (coming from "neutral").

For an axiom, let's say, associativity on a given set $(S, *)$.

1) We may have that all elements in S that satisfy the associativity, so S is associative [corresponding to $T = Truth$ in neutrosophy].

2) We may have some elements a_1, b_1, c_1 in S that satisfy the associativity, and other elements a_2, b_2, c_2, in S that do not satisfy the associativity [corresponding to $I = Indeterminacy$ in neutrosophy].

3) We may have no elements in S that satisfy the associativity [corresponding to $F = Falsehood$ in neutrosophy].

In classical algebraic structures, it is considered the first case 1) when the set S is associative; while the 2) and 3) cases are put together and the set is considered non-associative.

So, I split/refined the non-associativity into:

— *NeutroAssociativity* (when some elements verify the associativity, while others do not);

— *AntiAssociativity* (when no elements verify the associativity).

I split/refined them because these cases occurs in the algebraic structures.

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In general, we have

(<A>, <neutA>, <antiA>),

as in neutrosophy :

(<Axiom>, <NeutroAxiom>, <AntiAxiom>),

meaning respectively:

- ☐ all elements verify a given axiom;
- ☐ some elements verify, others do not;
- ☐ no elements verify the given axiom.

So, besides the classical *Algebraic Structures*, we can now develop *NeutroAlgebraic Structures*, and *AntiAlgebraic Structures*.

For example, we may study:

NeutroGroup, and *AntiGroup*;

or

NeutroRing, and *AntiRing*;

etc.

Therefore two new structures (*NeutroAlgebraic* & *AntiAlgebraic* structures) were introduced that were never explored before.

NeutroAlgebras and NeutroAxioms

To Xiaohing Zhang

I know you and your team are very strong in algebraic structures, that's why I send you a cooperation paper.

The notions are logical (common sense) and they occur in algebraic structures, when not only the operations [or laws of compositions] are partial, but also the axioms that are defined on the set of the

structure [associativity, commutativity etc.] may be partial (meaning true for some elements, and false for other elements).

If you see any mistakes, please let me know, we can fix them. Also, if you think something can be improved, also tell me. It is a brand new field of research in algebraic structures.

The Partial and Effect Algebras are algebras defined on Partial Operations, while all axioms defined on them are 100% true.

While NeutroAlgebras are algebras defined: either on some partial algebras, or on some partial axioms (partially true and partially false), or on both.

For example, a NeutroAlgebra can be defined on Total Operations, but having some partial axiom (see the example in the attached paper).

Or a NeutroAlgebra can be defined on some Partial Operations, and having only 100% true axioms (as Partial and Effect Algebras).

Or a NeutroAlgebra can be defined on some Partial Operations, and having NeutroAxioms (partially true and partially false) and 100% true axioms.

Therefore, NeutroAlgebras are more general than Partial and Effect Algebras, since NeutroAlgebras are also referred to Partial Axioms (NeutroAxioms - partially true and partially false).

I'll very much appreciate if you and your team take a look at this and send me your comments. We expand the neutrosophic research in other areas of science, so it would become more and more employed.

Numere infinite non-standard

To Andrei-Lucian Drăgoi

În analiza non-standard, $\varepsilon =$ infinitesimal > 0 și foarte aproape de 0. Iar opusul sau, $1/e$, este considerat non-standard infinit, care este un număr foarte mare, dar nu egal cu infinitul teoretic din analiza matematică standard.

Există o infinitate de numere infinitesimale distincte și, în consecință, o infinitate de numere non-standard infinite distincte (ne-egale cu infinitul unic din analiza matematică standard).

Deci, în acest caz, ca la Dvs., $0 \cdot (1/e) = 0$.

Cum ați separa acest infinit non-standard de infinitul imaginar al Dvs.?

Neutrosophic BCK-hyperlagebra and Neutrosophic BCI-hyperalgebra

To Young Bae Jun

I think it is possible to develop the neutrosophic BCK (or BCI)-hyperalgebra, never done before.

Zermelo-Fraenkel Neutrosophic Set Theory

To Ahmed Cevik

Good idea and congratulations for extending the neutrosophic logic/set to the Axiom of Choice - never done before upon my knowledge. I think you can go further (you're the best in this new field) to found and develop Zermelo-Fraenkel Neutrosophic Set Theory.

I saw you used neutrosophic probability (chance that an event occurs, indeterminate-chance of the event to occur or not, and chance that the event does not occur).

Another thing, you use Standard Neutrosophic Set (i.e. *T, I, F* just real numbers).

Maybe you may try Nonstandard Neutrosophic Set (when *T, I, F* are nonstandard numbers: infinitesimals, or monads and binads and non-standard infinities).

Please see:
http://fs.unm.edu/NeutrosophicMeasureIntegralProbability.pdf;
https://www.mdpi.com/2073-8994/11/4/515/pdf.

Converting Classical Numbers to Neutrosophic Numbers

To Ridvan Sahin

I have defined neutrosophic number as $N = a+bI$, where "a" is the determinate part of *N*, and "aI" is the indeterminate part of *N*, where *a, b* are real or complex numbers, while *I* = Numerical Indeterminacy.

Indeterminacy can be any real or complex subset.

For example:

$$N = 3 + 2I,$$

where *I* = {0.1, 0.3, 0.5}, hence

$N = 3 + 2 \times \{0.1, 0.3, 0.5\} = 3 + \{0.2, 0.6, 1.0\} = \{3.2, 3.6, 4.0\}$.

Many times people take "I" as an interval.

I also defined the quadruple neutrosophic number of the form $Q = a + bT + cI + dF$, where *a, b, c, d* are real or complex numbers, and "a" is the known part of *Q* while $bT + cI + dF$ is unknown part of *Q*.

There has not been developed a specific method to convert classical numbers to neutrosophic numbers, so your work will be welcome.

For example, if we have squareroot(2) = 1.414..., we need to approximate it to for example as:

1.4 + 2×[0.007, 0.008] = [2.414, 2.416].

Generalization of the Uninorms

To Ridvan Sahin

Did you think at using $U(x_1, x_2, ..., x_n)$ as a function of n variable?

We may have *week commutativity*:

$$U(x_1, x_2, ..., x_n) = U(x_n, ..., x_2, x_1)$$

or *strong commutativity*:

$$U(\varphi(x_1, x_2, ..., x_n)) = U(\psi(x_1, x_2, ..., x_n))$$

where φ and ψ are any permutations of $(x_1, x_2, ..., x_n)$.

Equation with Neutrosophic Coefficients

Florentin Smarandache

One can use $N = a + bI$ instead of equation coefficients.

The sign is +, but *a, b* can be positive or negative. For example: 2-3*I*, -4-*I*, -7+1*I* etc.

So, z = (2-3I)X + (-1-2I)Y.

You may also use *(t,i,f)* :

Z = (.4,0.1,0.2)X + (0.6,0.0,0.5)Y

Rezolvarea unei ecuaţii diofantice liniare generale

Florentin Smarandache

Pentru a rezolva ecuaţia:

$$a_1 x_1 + \cdots + a_n x_n = b, \text{ unde } (a_1, a_2, \ldots, a_n) = 1,$$

eu am folosit următorul algoritm:

— se alege minimul dintre $|a_1|, |a_2|, \ldots, |a_n|$ şi se împarte între ele;

— ceea ce se obţine se pune condiţia ca să fie întreg;

— şi tot aşa până se ajunge la un $|a_i| = 1$ şi rezolvă pentru variabila x_i.

De exemplu: $3x + 8y - 11z = 31$.

Rezolvăm în funcţie de x, fiindcă 3 este minimul dintre $|3|$, $|8|$ şi $|-11|$.

$$x = \frac{-8y+11z+31}{3} = -2y + 3z + 10 + \frac{-2y+2z+1}{3}.$$

Dar $\frac{-2y+2z+1}{3} = t =$ întreg (deoarece x este întreg).

Deci obţinem: $-2y + 2z + 1 = 3t$ sau $-2y + 2z - 3t = -1$.

Repetăm algoritmul; rezolvăm în funcţie de z:

$$z = \frac{3t+2y-1}{2} = t + y + \frac{t-1}{2}.$$

Dar din nou $\frac{t-1}{2} = v =$ întreg, deoarece z este întreg.

Deci $t = 2v + 1$, de unde:

$z = t + y + v = 2v + 1 + y + v = 3v + y + 1$, sau:

$$\boxed{z = y + 3v + 1}$$

x = -2y + 3z + 10 + t = -2y + 3(y + 3v + 1) + 10 + 2v + 1 =

= y + 11v +14

$$\boxed{x = y + 11v + 14},$$

where y, v belong to the set of integers $\mathbb{Z}$.

Neutrosophic Cubic Ideals

Florentin Smarandache

About the definition 1 in the paper *Neutrosophic Cubic Ideals* the characteristic neutrosophic set function:

For μ we need to have:

1, if $x \in G$; 0 otherwise;

and the opposite for the next two components *I* and *F* respectively:

0, if $x \in G$; 1 otherwise;

0, if $x \in G$; 1 otherwise.

For λ we have:

0, if $x \in G$; 1 otherwise;

and the opposite for *I* and *F* respectively:

1, if $x \in G$; 0 otherwise;

1, if $x \in G$; 0 otherwise.

— There also are authors who prefer that *T* and *I* are computed in the same way, *while* F is computed differently.

There are such interpretations for the *neutrosophic disjunction*, depending on the experts:

Pessimistic Interpretation:

- for μ you should use: ∨ , ∧ , ∧ ;

- for λ you should use ∧ , ∨ , ∨ .

Optimistic Interpretation:

- for μ you should use: ∨ , ∨ , ∧ ;

- for λ you should use ∧ , ∧ , ∨ .

Order on Z(I)

Florentin Smarandache

$N = a+bI$ means that the determinate part of N is "a" and indeterminate part of N is "bI".

Then:

$a_1+b_1I \leq a_2 + b_2I$ if $a_1 \leq a_2$ and $b_1 \geq b_2$.

What about the other cases?

Continuous Computing

To Robert Neil Boyd

It would be interesting to do a CONTINUOUS computing.

All of them so far are binary, based on sequences of 0 and 1, yet in neutrosophic computing we added "I" = indeterminacy, and we made a trinary (as in neutrosophy) computing:

with 0, 1, and *I*.

Robert Neil Boyd's answer

There is a seperate field known as analog computing. It is a nearly forgotten art, and little used in today's digital binary world.

Neutrosophic Computer

Robert Neil Boyd

To Florentin Smarandache and Victor Christianto

Maybe you can design a neutrosophic computer. In binary-related terms, switches and gates could have

several voltages levels, in between *on* and *off*. This is related to tri-state logic.

Texas Instruments designed and developed an "octal logic" integrated circuit, based on a transistor switch which has seven stable voltage states, in between *on* and *off*. I am trying to find it now. I think they sold the patent to Novaris computers.

<div align="right">Florentin Smarandache</div>

Interesting, three-state (or trinary) logic is neutrosophic logic, based on *(T, I, F)*. Actually, in 2013, besides the extension of fuzzy to Refined Fuzzy Set/Logic and of intuitionistic fuzzy to Refined Intuitionistic Fuzzy Set/Logic, I extended it to n-ary neutrosophic logic, for any n ≥ 4, called refined neutrosophic logic, where the truth *T* is refined into subtruths T_1, T_2, ...;
So "on" circuit may it be split into subparts of "on" physically speaking?

Similarly "I" (indeterminacy) split into I_1, I_2, ... (as in Octal Logic, as you said, I_1, I_2, ..., I_6).

Similarly falsehood (*F*), or "off" circuit, spit into F_1, F_2, ...

Neil, since you are a real physicist, can tell if it's possible physically to split (or get degrees) of "on" and "off" circuits?

This was never done before, I suppose.

<div align="right">Robert Neil Boyd</div>

Now, analog circuits can be emulated by digital circuits in some circumstances. In the case of the octal transistor with 7 stable output voltage levels, we can

<div align="center">55</div>

just consider each of the seven output voltage states as an octal binary code word. So your requirement for "in between on or off" can be emulated with octal logic, where you treat each octal word as a stable octal transistor voltage level, such that all zeros = OFF and all ones = ON and all other combinations of ones and zeros are treated as indeterminate.

<div align="right">Florentin Smarandache</div>

Therefore, this is a particular case of refined neutrosophic logic:

F = off,

T = on,

and I1, I2, ..., I7 are stable output voltage levels.

<div align="right">Victor Christianto</div>

As far as I know, there is already switch designed to alter between 0 and 1, it is called *potentiometer* (may be I am wrong?!).

Potentiometer has been used in controlling volume /sound in audio system, in order not to be too loud.

Refined neutrosophic logic/set means: any number of subindeterminacies.

For example the color spectrum: 0 = white, 1 = black, and between white and black there is an infinitude of colors (spectrum).

For octal logic: 000 and 111 are the opposites, and in between as you said the subindeterminacies: 001, 010, 100, 011, 101, 110.

There are light bulbs with sensitive increasing luminosity: meaning if you switch it a little (a small degree of "on") you see some light, you spin it a little

more (more degree of "on") you see more luminosity, and so on...

I do not know for the degree of "off"... any idea?

<div align="right">Robert Neil Boyd</div>

<div align="right">To Florentin Smarandache and Victor Christianto</div>

According to some, optical phase conjugation (OPC) can be used to extinguish a light source.

I am not sure about that myself.

Some claim darkness can be produced in a given volume by OPC.

I have my doubts.

I need to witness such things. I am an empiricist. I want first-hand physical evidence. I'm not saying it can't be done.

I'm just saying I've never seen it done.

As in the Wikipedia illustration of the reflected tiger, OPC can be applied by degree by changing the path(s) of the incident and/or reflected light, incrementally. For example, by changing the shape of the object or the mirror or by shifting the angle of the mirror slightly relative to the incident light.

Adaptive optics is often used to correct and compensate for such deviances. But you don't have to apply adaptive optics, and in the OPC situation, you may not want to.

Maybe an idea will come to you out of this little exploration. Can neurostrophy be applied to OPC?

Distributed Indeterminacy Form

To Selcuk Topal

"I can see that people use indeterminacy in a wrong way."

— No, "Indeterminacy" is used correctly, it is a generic (general) name to mean everything in between the opposites.

In neutrosophy we have: the opposites <A> and <antiA>, while in between them is <neutA>.

Therefore, Indeterminacy = <neutA>.

Please do not take 'ad literam' (literally) the word "indeterminacy" only as something not clear, etc. [as in a language dictionary].

For example, in games "indeterminacy" means "tie game" (neither winning, nor losing).

In physics, for charged particles, you have: positive particle, negative particle, and neutral particle (no charge); hence "Indeterminacy" = "neutral particle".

In decision making "indeterminacy: means "pending" (neither taking a decision, nor rejecting a decision). Again, please do not make the confusion considering "Indeterminacy" as the narrow sense definition from a language dictionary.

— About the neutrosophic score, accuracy, and certainty functions, they are clearly defined and motivated:

score function = the average of positiveness;

accuracy function = the difference between positiveness and negativeness;

certainty function = positiveness.

They all determine a total ordering on the set of triplets (T, I, F).

You have first to use the score function, then if you get equality, use the accuracy function, and if you get again equality you use certainty function; now if you still get equality, the two triplets are equal.

"The indeterminacy factor is dependent on truth and falsity values".

— This is false in general, since indeterminacy is INDEPENDENT of truth and falsehood, and this was the main distinction between neutrosophic set and other types of sets.

But there are cases when indeterminacy is partially dependent, or totally dependent of T and F, depending on the application and on the experts: http://fs.unm.edu/Indeterminacy.pdf.

"We propose to distribute the indeterminacy on truth and falsity to be aligned with real life applications"; (T, I, F) is reduced to ($T - TI$, 0, $F - FI$)."

— This transformation produces a suboptimal result ($T - TI$, 0, $F - FI$), which is not equivalent with (T, I, F). This transformation does not work if your application has a middle (neutral) term.

a) For example, if your application is about a soccer game, and if you distribute the indeterminacy, you LOSE information, you lose the possibility of saying something about a "tie game" (i.e. you eliminate the degree of "tie game", so your work is incomplete, you give the degree of winning and the degree of defeated, but you say nothing on the degree of tie game).

b) If your application is about decision-making and you distribute the indeterminacy, then you LOSE the degree of "pending" (i.e. you eliminate the "pending" possibility from: accept / pending / reject).

c) Similarly if you have (positive, neutral, negative) particles in physics (you LOSE the "neutral" particles).

Therefore, your approach does not work for triads of the form (<A>, <neutA>, <antiA>).

— On the other hand, your DIF (Distributed Indeterminacy Form) is not justified: why do you reduce the T and F the way you do, and not in a different way? Is DIF just a mathematical artifact?

Distinction between Uncertainty and Indeterminacy

Said Broumi

What is the distinction between Uncertainty and Indeterminacy?

Florentin Smarandache's answer

Indeterminacy = <neutA>, i.e. everything included in between the opposites <A> and <antiA>.

In neutrosophy, we include everything (that exist in between the opposites) into Indeterminacy.

So, uncertainty is part of Indeterminacy; vagueness, unclearness, contradictory etc. all are part of Indeterminacy.

In the Refined Neutrosophic Set, the neutrosophic components T, I, F can be refined/split/subdivided.

So Indeterminacy I can be refined/split/subdivided (if needed in some application) into: for example —

I1 = uncertainty, I2 = vagueness, I3 = contradictory, etc.

We do not take ad litteram (à la lettre) the linguistic definitions of "Indeterminacy" from ordinary language dictionaries, but in neutrosophy we mathematically and philosophically defined Indeterminacy as: everything different from the opposites <A> and <anti> (or everything which is in between them).

For examples:

−   in the logic, Indeterminacy is everything that is different from 100% True and from 100% False;
−   in the set theory, Indeterminacy is everything that is different from 100% Membership and from 100% Nonmembership;
−   in the probability theory, Indeterminacy is everything that is different from 100% Chance-of-Occurring and from 100% Chance-of-NotOccurring of an event.

La Logique Subjective

To Jean Dezert

La Logique Subjective de A. Josang me paraît comme un pléonasme, car les sources sont déjà subjectives et les masses qu'elles attribuent aux éléments du cadre de discernements sont bien sûr subjectives (dès le début on parle dans la fusion de l'information d'une probabilité subjective, non pas objective), et la fusion des masses est subjective car on utilise différentes règles de combinaisons qui donnent des approximations subjectives de la fusion (le résultat de la fusion dépend de la règle utilisée) et personne n'a démontré qu'une telle règle soit objective.

Proposal of Re-Foundations of Classical Statistics

Florentin Smarandache

One question about the foundations of statistics:

— When computing the standard deviation for a discrete variable x, instead of squaring the deviations of x's, i.e. (x-mean(x))^2 why not taking the absolute value of this: abs(x-mean(x))?

So, a new variance (different from the classical one) would be:

Summation of abs(x-mean(x))p(x) and standard deviation (different from the classical and well-known one) would be defined as:

Variance / dim(x).

Surely, these will be shocking the statistics community, but what is wrong with them?

$$\frac{|x_1 - \bar{x}| + \cdots + |x_n - \bar{x}|}{n - 1}$$

Neutrosophic Probability

Florentin Smarandache

In Neutrosophic Probability, the first and third (event occurring and respectively event not occurring) are not quite complementary.

If the chance of the event occurring is let's say 0.3, the chance of the event not occurring is not 1 - 0.3 = 0.7, but it may be any number in [0, 1] for a MultiVariate Probability (upon many random variables that influence the occurrence).

They are considered independent.

In general, all three NP components are: either totally independent, or partially independent and partially dependent, or totally independent – depending on the application and on the experts.

See:

http://fs.unm.edu/NSS/PracticalIndependentNeutrosophic36.pdf.

The sum may be any number up to 3.

For example, you can calculate P_1 using some parameters, while P_3 using other parameters (so P_1 and P_3 are not necessarily related).

Similarly P_2 calculated using different parameters.

In your case with alcohol, there is only one parameter = alcohol, so the three probabilities are dependent and their sum is up to 1.

The sum up to 3 is not purely mathematical, as you say, but occurs when the three probabilities are calculated with respect to different parameters.

For example, P_1 is calculated with respect to alcohol, P_2 is calculated with respect to stress, P_3 is calculated with respect to something else not related to the alcohol nor to stress…

SuperHyperGraph

Florentin Smarandache

A SuperHyperGraph is a HyperGraph (where a group of Edges form a HyperEdge) such that a group of vertices are united all together into a SuperVertex { like a group of people (=vertices) that are united all together into an organization (=SuperVertex) };

— and further on the n-SuperHyperGraph where many groups (=SuperVertices) are united all together to form a group-of-groups (called 2-SuperVertex, or Type-2 SuperVertex), then a group of Type-2 SuperVertices forms a Type-3 SuperVertex, ..., and so on up to Type-n SuperVertex, for any n≥1, which better reflects our reality.

Neutrosophic Components

Florentin Smarandache

The dependence and independence of the neutrosophic logic/set components in neutrosophic logic and neutrosophic set:

— T (truth-membership),

— I (indeterminacy),

— F (falsehood-nonmembership).

Similarly for neutrosophic probabilities components P_1, P_2, P_3. For example, you may have P_1 and P_3 dependent (connected to each other), then $P_1+P_3 \leq 1$ (just to connect to your example), while P_2 independent from these, then $P_2 \leq 1$, whence $P_1+P_2+P_3 \leq 2$.

In neutrosophic probability the sum of the three probabilities is not necessarily 3, but any number between 0 and 3, and what the sum really is it depends on the application and on the experts.

Smarandache Geometry and Multispace

Soit *E* un espace géométrique et α un axiome géométrique defini sur cet espace. Supposons que

l'axiome α est valide pour certains points de l'espace *E* et invalide pour d'autres points de l'espace *E*, ou bien que l'axiome α est seulement invalide mais de deux ou plusière manières différentes sur cet espace *E*.

L'on dit que l'axiome α est né de manière hybride.

Alors, l'espace *E* et l'axiome α, dénotés par (*E*, α), forment une Géométrie Hybride (que nous avons construit en 1969).

— Ceux-ci ont été nommés Géométrie / Espace Hybride Smarandache respectivement.

En général, un espace non-vide géométrique *E*, doté des axiomes α₁, α₂, ..., α*n* tel qu'au moins un axiome est né de manière hybride, est appelé Géométrie Hybride.

a. Construisez un modèle de cette géométrie.

Plus généralement:

Soit *E* un espace non-vide et α un axiome defini sur cet espace. Supposons que l'axiome α est valide pour certains elements de l'espace *E* et invalide pour d'autres elements de l'espace *E*, ou bien que l'axiome α est seulement invalide mais de deux ou plusière manières différentes sur cet espace E.

Alors, l'espace *E* et l'axiome α, dénotés par (*E*, α), forment un Espace Hybride (que nous avons construit en 1969).

En général, un espace non-vide *E*, doté des axiomes α₁, α₂, ..., α*n* tel qu'au moins un axiome est né de manière hybride, est appelé Espace Hybride.

b. Montrez que l'Espace Hybride est une généralisation
de la Géométrie Hybride.

Quel que soit le domaine de la connaissance, un Multi-Espace (MultiEspace) avec sa Multi-Structure (Multistructure) est une union finie ou infinie (dénombrablement ou non) de nombreux espaces dotés de structures variées. Les espaces et les structures peuvent être non-disjoints.

Un tel MultiEspace avec sa multistructure peut être utilisé en physique pour la *Théorie du Champ Unifié* (qui tente d'unir les forces gravitationnelle, électromagnétique - faible et forte), dans l'informatique quantique parallèle, dans la théorie des mu-bits, dans des états multi-enchevêtrés, dans la *Théorie de Tout*, etc. Montrez que le *Multi-Espace* (MultiEspace) avec sa *Multi-Structure* (MultiStructure) est une généralisation de l'Espace Hybride et de la Géométrie Hybride.

Neutrosophic Probability Independent Components

Florentin Smarandache

Some elementary examples from our everyday life:

1) It is possible, indeed, to have indeterminacy = 0. For example, if there is a tennis match, where the tie game is not allowed - one player has to win, then indeterminacy = 0.

In neutrosophic probability, indeterminacy ≥ 0 (so it may be zero as well); the value of indeterminacy depends on each application and on the experts (how they estimate).

2) If we have a soccer game (except the world cup final, when the tie game is not allowed), indeterminacy ≥ 0, because it is possible to have a tie game.

Now, going to neutrosophic probabilities.

3) Soccer game (except the world cup final, when the tie game is not allowed).

3.1) If only one source estimates the probabilities of winning/tie/loosing game, and suppose the person is educated and knows that the sum of the events of a probability space is equal to 1, then he may estimate, for example: $P_1 = 0.6$, P_2 (Indeterminacy) = 0.3, $P_3 = 0.1$.

P_1, P_2, P_3 are considered totally dependent (only one source estimates them), but $P_3 = 0.1$ is not equal to 1-$P_1 = 1-0.6 = 0.4$.

3.2) For subjective probability, if three different men M_1, M_2, M_3, without communicating with each other, estimate the probabilities of winning / tie / loosing game, between two teams A and B,

— M_1 may like team A and subjectively estimates that it will win (let's say 0.7),

— M_2 may like team B and will estimate that it will win (let's say 0.6 chance),

— and M_3 may be neutral and may say that A and B will have a tie game (let's say chance 0.8).

So, if we sum $0.7+0.6+0.8 = 2.1 \leq 3$.

Now, do not tell me that if you ask three different men to estimate an event (say soccer game), without telling them what the others said, you'll get the sum of their probabilities $P_1+P_2+P_3 = 1$, it is a slim chance.

Refined Neutrosophic Logic/Set/Probability

Florentin Smarandache

Neutrosophic Probability reflects the real events, and it is not simply a mathematical artifact, as for example there are many imaginary physical models in modern physics.

T is refined/split into T_1, T_2, ...; I is refined/split into I_1, I_2, ...; and F is refined/split into F_1, F_2, ...;

For an application in the medical field, the number of subcomponents T_1, T_2, ...; I_1, I_2, ...; F_1, F_2, ... depends on the number of factors that cause a given disease.

Why? Because a disease is determined by many factors/parameters/causes, let's call them: c_1, c_2, c_3, ...

Then one computes P_1 with respect to c_1, P_1 with respect to c_2, P_1 with respect to c_3.

So one refines/splits P_1. Similarly for P_2 and P_3.

Then, one transposes these dependent / independent & refinement into your medical factors / parameters / causes of a disease.

Neutrosophic Probability is derived from practice

Florentin Smarandache

1) I derived the neutrosophic probability from practice, not the opposite.

2) Just your P_3 (PL for me) is equal to 0.1 given there is third possible result that is characterized with my PT (your P_2).

What I wanted to show you, is that several classical properties/formulas from classical probability do not necessarily work in practical applications and in neutrosophic probability (that was designed from practical applications),

I meant

$$P_1 \neq 1 - P_3$$

in almost all applications (while in classical probability we have equality).

3) You do not need to sum the probabilities of three men. It is enough to say that: each probability is ≥ 0 and ≤ 1.

Of course from $0 \leq P_1, P_2, P_3 \leq 1$ it results that $0 \leq P_1 + P_2 + P_3 \leq 3$, you are right, so the last double inequality was redundant, but I wrote it because otherwise people would have taken from granted that the sum $P_1 + P_2 + P_3 = 1$ as in classical probability.

When you do not specify something, it goes by default... So, I had to make a tautology (write two things, where one implied the other).

4) And by the way, we even have neutrosophic probability > 1 and < 0 (and in our everyday life!).

So your assertion that $0 \leq P_1, P_2, P_3 \leq 1$ does not always work (it is restrictive for some applications).

An easy example:

An worker John worked 40 hours/week in a factory as normal duty this week.

What is John's neutrosophic probability (NP) of working normal duty next week?

a) If John will work let's say 30 hours next week, then NP(John) = 30/40 = 0.75;

b) if John will work 40 hours next week, then NP(John) = 40/40 = 1;

c) but if John will work 4 hours overtime because the company wants to finish a product, then NP(John) = (40+4)/40 = 44/40 = 1.1 > 1.

5) The expression $P_1+P_3=1$ establishes a probabilistic relationship between P_1 and P_3, and is not a simple math operation, as $P_1 + P_2 + P_3$ is.

$P_1+P_2+P_3$ is not a simple math operation, it is resulted from practice applications.

I gave you examples with soccer game and tennis game.

The are many neutrosophic triads in our everyday life: (<A>, <neutA>, <antiA>), such as:

(positive particle, neutral particle, negative particle),

(taking a decision, pending, not taken the decision),

(voting pro, not voting, voting against),

etc.

You may transpose this overprobability (i.e. > 1), or underprobability (i.e. < 0) to your medical field.

Dr. Yanhui Guo is an expert in neutrosophic medical image processing, neutrosophic diagnosis, etc.

Example of Plithogenic Logic Proposition

Florentin Smarandache

The proposition $A(v_1, v_2)$: Abortion to be prohibited.

There are people saying that the abortion kills life, which is true, so the abortion should be prohibited (v_1).

Other people, for example the feminists, say that the women are masters of their bodies, which is also true, so it should be them to decide to have or not an abortion – not the government (v_2).

Therefore, $P(v_1, v_2)$ is true from a point of view (v_1), and false from another point of view (v_2).

Subset Vertex and Subset Edge Graphs

Florentin Smarandache

Subset Vertex and Subset Edge Graphs were not yet extended to neutrosophics.

Un nouveau FoD

Jean Dezert – Florentin Smarandache

Nous pouvons avoir des FoD de la façon suivante:

Θ = { A=white, antiA=black, B=yellow, antiB=violet }.

C'est claire que "white" et "black" sont opposés, bien que je ne sais pas exactement quelle couleur soit opposée à "yellow", mais cela se peut calculer en considérant les ondes nanométriques de chaqu'un.

Dans ce cas-là, { A, antiA, B, antiB } sont tous des singletons, avec intersections vides deux à deux. Donc antiA et antiB ne sont pas d'ignorances. Ce cas de FoD (Frame of Discernment) n'a jamais été étudié dans la fusion - je crois.

L'Entropie

Jean Dezert – Florentin Smarandache

Dans les logiques floue, intuitionistic floue, et neutrosophique si le degré de vérité (T) et le degré de fausseté (F) sont égaux (de la même proposition), alors c'est une entropie maximale, et c'est normal car c'est une ambiguïté entre la vérité et la fausseté de la même proposition.

Je critique Harley's Entropy (peut-être nous devrons construire une autre entropie meilleure dans la fusion!):

Encore, un plus extrême cas sur Harley's:

	A	$nonA = B \vee C$	$Theta$
$m4_{PCR5}$	0	1	0

$$H4(A) = 0 \cdot \log_2 1 + 1 \cdot \log_2 2 = 0 + 1 = 1.$$

Voilà, l'on trouve une grande entropie tandis que c'est claire que nonA est favorisé.

Entropie signifie: ambiguïté, chaos, contradiction interne, incertitude etc.

Mais clairement ce n'ai pas le cas pour $m4_{PCR5}$.

Generalization of PCR5/6

Jean Dezert – Florentin Smarandache

We can consider the redistribution of conflicting mass as:

— directly proportional with respect to some parameters a_1, a_2, ..., a_m ;

— and inversely proportional with respect to other parameters b_1, b_2, ..., b_n.

Then we have:

$$\frac{x_A}{a_1 + a_2 + \cdots + a_m + \dfrac{1}{b_1} + \dfrac{1}{b_2} + \cdots + \dfrac{1}{b_n}} = m(\Phi)$$

whence we find x_A.

The idea is to add some other parameters that x_A depends on - of course there should be more complex formulas.

First Blackman generalization (infinite class)

Jean Dezert – Florentin Smarandache

Let $0 < e_1$, $e_2 < \frac{1}{2}$ be two numbers, and $\theta = \{\theta_1, \theta_2\}$, and two targets.

Then:

$$
\begin{array}{cccc}
 & \theta_1 & \theta_2 & \theta_1 \vee \theta_2 \\
m_Z = & (0.5 & 0.5 & 0 \quad) \\
m_{T1} = & (e_1 & e_1 & 1\text{-}2e_1) \\
m_{T2} = & (e_2 & e_2 & 1\text{-}2e_2)
\end{array}
$$

Now, if on computes the associations using the DS Rule:

$$m_{Z,T1} = m_{Z,T2} = (0.5 \quad 0.5 \quad 0);$$

the degree of conflict

$$k_{Z,T1} = 0.5(e_1) + 0.5(1\text{-}2e_1) + 0.5(e_1) + 0.5(1\text{-}2e_1)$$
$$= e_1 + 1\text{-}2e_1 = 1\text{-}e_1,$$

and $k_{Z,T2} = 1\text{-}e_2$.

We choose e_1 and e_2 which contradict the association.

Example for a larger generalization

Jean Dezert – Florentin Smarandache

Let's $\theta = \{\theta_1, \theta_2\}$, and have three targets. Then:

	θ_1	θ_2	θ_3	$\theta_1\lor\theta_2$	$\theta_2\lor\theta_3$	$\theta_1\lor\theta_3$
m_Z =	(0.25	0	0.25	0.25	0.25	0)
m_{T1} =	(0.01	0.90	0.01	0.01	0.01	0.06)
m_{T2} =	(0.25	0	0.25	0.25	0.25	0)
m_{T3} =	(0.20	0.15	0.20	0.20	0.20	0.05)

Now, by fusions, using the DS Rule, between m_Z and each m_{T_1}, m_{T_2}, and m_{T_3} separately, one gets:

(0.25   0   0.25   0.25   0.25   0).

Jean, si vous n'aimez pas $\theta_1 \land \theta_3$, vous pouvez le remplacer par $\theta_1 \lor \theta_3$.

*

More general (a much larger infinite class)

Let $0 < e, e_1, e_2, ..., e_t < 1$ be t + 1 numbers.

Let's $\theta = \{\theta_1, \theta_2, ..., \theta_n\}$, and have a source of observations and t targets.

Let's consider the mass matrix of the source of observation and the targets M, which has $t + 1$ rows and $n + u + p$ columns, where $u \geq 0$ represents the number of uncertainty columns (i.e. masses of the form m($\theta_{j_1} \lor ... \lor \theta_{j_s}$)), and $p \geq 0$ the number of paradoxist columns (i.e. masses of the form m($\theta_{j_1} \land ... \land \theta_{j_s}$)).

If the following conditions occur:

— the row of m_Z has at least a zero, and all its non-nul elements are equal (such that their sum is 1, of course); at least two elements of m_Z are non-zero;

— let's consider its zero elements on columns c_1, ...,
c_w, where $1 \leq w \leq n + u + p - 2$; this row is noted by (r_0);

— for any other row (r_j), $1 \leq j \leq t$, the elements
which are not on columns c_1, ..., c_w, are all equal to e_j
such that the sum of elements on each row is 1; (the
elements which are on columns c_1, ..., c_w may be
anything between $[0,1]$);

— let's have a row (r_{t_0}), among the last t rows, which
is identical to (r_0).

The fusion, using the DS Rule, between m_Z and each
m_{T_j}, $1 \leq j \leq t$, gives the same result:

$$m_Z, T_j = m_Z$$

where the non-zero elements are equal to

$$1/(n + u + p - w),$$

and the zero elements occur on columns $c_1, \ldots, c_w$.

Distributions des probabilités sujectives continues

Florentin Smarandache

Je me demande si l'on ne peut pas utiliser des
distributions des probabilités sujectives continues.

Car, les masses sont des distributions des
probabilités sujectives discrètes.

$$P(A \cup B) = P(A) + P(B) \text{ si } A \wedge B = 0.$$

Cette égalité est valide pour les probabilités
objectives, mais pas en général pour les probabilités
sujectives. Les masses pouraient peut-être soient des
probabilités sujectives. En fait, "belief fonctions" ne
sont pas des possibilitées (ou probabilités) sujectives?

Le problème pour moi c'est que les "évènements" des masses sont des ensembles *A*, *B*, ... pas des crisp élèments.Donc, il faudrait definir une probabilité sujective sur les évènements-ensembles pas sur des évènements-élèments comme dans la probabilité classique. J'ai pensé au debut à essayer les masses Bayesiennes (quand *A*, *B*, ... ont une intersection vide deux à deux)...

Examples of neutrosophic indeterminacy applications

Florentin Smarandache

Voting process

There are people who vote *PRO*, others who vote *CONTRA*, and a third category who are *NEUTRAL* - either they don't vote, or they do a *BLANK VOTING* (i.e. not selecting any candidate from the list) or *BLACK VOTING* (i.e. deleting all candidates from the list).

Games

In the games (say in soccer, chess, etc.): a player can *WIN*, can *LOOSE*, or can have a *TIE* result (neither wining nor loosing).

Quantum Physics

In Quantum Physics, where the momentum (position and spin) of a particle has some indeterminacy in it.

Epistemic Probability

In epistemic (subjective) probability where there might be hidden parameters that we are unaware of, hence indeterminacy is herein involved.

Opinion

As in neutrosophy, when asking people about an opinion (say war in Iraq, social security law, etc.) some people may have a *POSITIVE* opinion, other a *NEGATIVE* opinion (as you already said), while a third category could be *IGNORANT* (i.e. neutral, not caring for or against the war, not caring for or against the social security law; in this indeterminate category are people who are not affected by the event).

$t \wedge f$ = paradox (contradiction);

while anti$t \wedge$ anti$f$ = a kind of uncertainty.

We can split the indeterminacy into uncertainty *(U)*, paradox *(P)*, and others *(O)*.

Example of $t + f + i > 1$

We can get the sum of scalar components > 1 when the parameters we investigate with respect to are contradictory.

For example:

a) Suppose we investigate people about their opinion regarding the war in Iraq with respect to the parameter "fighting the terrorism", then maybe 60% of them will be *POSITIVE* (accept) about the war;

b) But if we change the parameter and investigate people about another parameter, "number of dead American solders and civilians in Iraq", most of the people say 70% will disagree *(NEGATIVE)* with the war.

c) If taking another parameter, "who should be the American army general in Iraq", most of the people will not know or will not care *(IGNORANT)*, say 90%.

Thus $0.6 + 0.7 + 0.9 > 1$.

The sum can be < 1 for incomplete information

There is a questionnaire asking people the question: "Do you agree with the war in Iraq?", and there are three possible answers to the questionnaire: *Yes, No, Undecided*. Everybody should pick up some answer(s).

Then there might be people who check up both *Yes* and *No*,: i.e. *Yes* for fighting terrorism, *No* because of a lot of dead civilians and soldiers.

Then the sum of *Yes + No + Undecided* > 1.

Say we have 4 subjects:

- ☐ John checks *YES*;
- ☐ George checks *YES* and *NO*;
- ☐ Haibin checks *UNDECIDED*;
- ☐ Martin checks *NO*.

Hence: $\frac{2}{4}$ *(YES)* + $\frac{2}{4}$ *(NO)* + $\frac{1}{4}$ *(UNDECIDED)* > 1.

In the case when it is not required that everybody picks up some answer(s), there might be people who don't pick up any answer, hence it could be possible to have *Yes + No + Undecided* < 1 (incomplete information since some subjects do not answer).

Say we have 4 subjects:

- ☐ John checks *YES*;
- ☐ George doesn't check anything;
- ☐ Haibin checks *UNDECIDED*;
- ☐ Martin checks *NO*.

Hence: $\frac{1}{4}$ *(YES)* + $\frac{1}{4}$ *(NO)* + $\frac{1}{4}$ *(UNDECIDED)* < 1.

Another example from finance / economics / business

A top business executive director can *TAKE* a decision, can *REJECT* it, or can be *UNDECIDED* (when

he does not have enough information or has conflicting information about taking or not taking the decision).

Cum să încalci regulile artistice în mod artistic

Florentin Smarandache

Învață regulile compoziției ca un *profesionist* ca să le poți încălca precum un *amator*!

Poeme Neutrosofice

Florentin Smarandache

Vers 1: o idee

Vers 2: contrara ei

Vers 3: o mixiune între vers1 + vers2 (adică, în concluzie: adevărul se află la mijloc).

Este chiar logica neutrosofică în poezie, deci partea de mijloc, care a fost neglijată de dialectică.

Este viața reală, fiindcă majoritatea oamenilor merg pe partea de mijloc, doar prea puțini pe extreme.

Exemplu poem neutrosofic 1

bogat spiritual

sărac material

poetul ideal

Exemplu poem neutrosofic 2

dușman la rocadă

prieten de fațadă

câtă fanfaradă!

Cu rimă, ritm; plus desene/poze contradictorii care să formeze impreună o simbioză.

History and Mathematics

To Viorel Roman

Am citit mai multe dintre eseurile dvs. istorice şi vă felicit, sunteţi un erudit. Cum probabil ştiţi, eu sunt profesor de matematică, deci m-am gândit dacă ar exista vreo legatură, dacă există determinism în evoluţia istoriei sau doar întâmplare?

Ori despre rolul personalităţii în istorie. Deci, de pildă, dacă Hitler nu ar fi existat, ar fi fost altcineva care să fi făcut ceva similar ca el şi să pornească cel de-al doilea război mondial?

Trebuia să se facă un nou război mondial?

Şi analog despre alte războaie, revoluţii, răscoale de-a lungul istoriei?

Adică, am putea prevedea care ar fi următorul război mondial, sau cum va evolua istoria?

Imperiile cresc şi descresc (de la Dimitrie Cantemir citire). Care va fi noul imperiu?

Viorel Roman

Noi, creştinii, credem în Adevărul / Iubirea absolută, într-un cuvânt, în Dumnezeul creator pe care îl urmăm, imităm, cautăm. Ne împărtăşim aşadar adevărul, iubirea, fiecare în felul sau în numele Lui. Planul Creatorului ne depăşeşte, ştim asta de la Iov, şi totuşi facem parte indisolubil din el, avem şi noi instrumente imperfecte, de la oameni de rând la mari conducători ca Stalin, Hitler, acţiuni care dau roade numai dacă concordă cu Adevărul / Iubirea. Acest determinism nu-i cuantificabil şi totuşi evident,

dacă privim în ultimii cinci mii de ani de când oamenii scriu și își bat capul: de ce sunt? cum să trăiesc *ca lumea*? Și apoi? O prevedere a războaielor, revoluțiilor, răscoalelor ar fi posibilă numai daca am avea acces la Planul Creatorului cu omul. Descoperirea atomului, cosmosului sau descoperirile Dvs. în matematică sunt fascinante, dar nu pot înlocui raportul creator Credință - Rațiunea.

<div align="right">Florentin Smarandache</div>

Eu am întrebat un om de știință, dar mi-a raspuns un om religios.

Dacă puterea divină a fost singura care a știut de acel război sângeros, de ce l-a lăsat să se desfășoare?

<div align="right">Viorel Roman</div>

Științele sociale sunt în ultimă instanță credință, religie, teologie, nu putem experimenta în istorie, antropologie, sociologie. Putem adânci cunoașterea unui Plan divin la care avem un acces logic sau/și metafizic. În schimb, Aristotel, revoluția papală, cu sacralizarea rațiunii, emancipează de mituri științele naturale, care au o siguranță pe sine de invidiat, ele pot experimenta, demonstra logic tot ce fac sau vor, și au deja statutul unui cult dominant. S-a ajuns în situația ca științele sociale le imită pe cele naturale, ca să supraviețuiască la Universitate. În ciuda tuturora, credința și rațiunea se completează de minune.

- ☐ https://melidoniumm.wordpress.com/2012/07/22/viorel-roman-credinta-si-ratiune
- ☐ https://romaniapatrianostra.wordpress.com/2013/03/12/2-benedict-xvi-ratiune-si-credinta
- ☐ https://www.viorel-roman.bucuresti-nonstop.ro/articol_list.php?s=0&pg=102

Schumann Resonance

Victor Christianto

In biophysics community, people try to link between geomagnetic vibration and human consciousness. that is where Schumann resonance plays a role.

Balance Analysis and Observation

Victor Christianto

To Robert Neil Boyd; Florentin Smarandache

Did you mean that the distinction between the logic and experience is something related to analytics function of the left brain and intuitive-wholeness function of the right brain? I suppose the healthy way is to optimize both function of left and right brain, as the middle component (neutA) in neutrosophy.

I guess you right, in order to experience God, we shall feel Him intuitively not rationally.

Math is a separation and an intellectual abstraction, which does not comprise Experiential Real Reality, but is only a limited attempt at descriptions

Robert Neil Boyd

To Victor Christianto; Florentin Smarandache

Thanks for the .pdf article by Ralph Abraham. It helps me to comprehend some of your points of view.

However, Abraham is not a Mystic. He is a logician.

Logic and mystical experiences are exclusive domains that cross over into one another, on occasion,

just as everything else does as participants in Experiences of the Wholeness, Harmony, Balance, Caring, and Oneness of the Alive Aware Intelligent Conscious Universe.

All of this partly constitutes the Mind of God, which is vaster and more complex than most human beings are able to even vaguely comprehend.

(I have been in the Mind of God, so I speak from personal experience.)

You may gather, from the basis of Bhutatmas, the tiny Consciousness-experiencing creatures that have vast experiential memories, that Everything, all fields, all forces, all matter, all life, and the entire of the Infinite Cosmos, results from the activities and agglomerations of Bhutatmas, in an Infinite Universe constructed and operated by Intelligent Design.

According to the Vedic literature on this topic, Divinity resides in the Actually Infinitely Small, which is everywhere and nowhere, at the same time.

Thus it can and does act on everything that is and everything that happens.

But Divinity has set things up so that Everything has Free Will and individual volition.

A factor that has been left out of the Vedic literature on the topic of Bhutatmas, is that every Bhutatma is Unique, with a unique set of memories of experiences, regarding multiple Realities (not just this one). So Uniqueness is an absolute in all the realms, and all the Realities.

While the human mind wants to see, and predict, ordered and systematic regularity, the rest of the Multiverse does not operate on that basis.

The Multiverse is based on Uniqueness, Consciousness, and Harmony, which are not bound by mathematical abstractions and predictive logic.

Logic and Experience are mutually exclusive. If you are involved in logic, you are not able to have full and deep experiences of the senses and sensitivities, at the same time.

So, as I have said before, there is the Nature World operating in Divine Harmony, and the "people world", which made from analytical thought. Analytical thought separates the human being from being able to directly Experience the Cosmic Harmony, personally. However, Nature is constructed, and operates such that human beings can go beyond thought and into Direct Experience of the Cosmic Harmony and the Natural Harmony.

I hope that by now, you have arrived at some cognizant awareness of the differences between analytic thought and experiential thought; between the Nature and Divine Ways, and foolish people ways which are based in behavioral ignorance of the All and constrained by thought-originated pains and struggles, which result from the "ego", which is a product of analytical thought.

Etimologia numelui « Smarandache »

Fiul meu cel mic, Silviu, se interesa de familia noastră - de unde provine. M-a bucurat nespus că m-a întrebat (când am fost cu Mihai în Seattle la el, în 2015).

"Smarandache" vine din limba greacă, din Insula Creta, vestită în Antichitate pentru celebra Civilizație Minotaură.

[O să mă duc odată să vizitez insula.]

În prezent, în Grecia există numele de familie "Smaragdakis" [Σμαραγδάκης], am văzut și un articol de un cercetător științific cu acest nume.

În greacă:

Smaragdakis = smaragd + akis;

smaragd [σμαραγδή] = smarald (piatră prețioasă de culoare verde);

akis [άκης] = mic, fiul lui.

Grecii au emigrat peste tot.

Numele grecesc "Smaragdakis" a fost romanizat, sau latinizat in *Smarandake*, sau *Smarandache*.

Tata-mare al meu, Smarandache Ion, mi-a spus că strămoșii lui au venit din sud (l-a auzit și vară-mea, Smarandache Ioana Denisia, fiica fratelui tatălui meu, care este acum emigrată în Cipru, și ea a învățat greceste).

Dragi fii, voi să fiți mândri că vă trageți din cea mai mare civilizație a omenirii: civilizația antică greacă!

Există 3000-4000 de cuvinte de origine greacă în marile limbi europene (engleză, germană, franceză etc.).

Dupa alte surse, etimologic ar insemna „fiul Smarandei".

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Florentin Smarandache

at an international conference
in Chicago,
on July 2011.

My **lab**[oratory] is a virtual facility with non-controlled conditions in which I mostly perform scientific meditation and chats: *a nest of ideas* (**nidus idearum**, in Latin). In this *eighth book of scilogs* collected from my nest of ideas, one may find new and old questions and solutions, – in email messages to research colleagues, or replies, and personal notes handwritten on the planes to, and from international conferences, about all kind of topics, centered mostly on Paradoxism and Neutrosophy. Feel free to budge in or just use the scilogs as open source for your own ideas!

From the Foreword