

## Preamble to Neutrosophy and Neutrosophic Logic

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This is a preamble to the next three following papers, written by Florentin Smarandache and Jean Dezert, dealing with paradoxism – an avant-garde literary movement based on paradoxes, neutrosophy – a new branch of philosophy as a generalization of the dialectics, neutrosophic logic – which is a generalization of many logics, neutrosophic set – a generalization of the fuzzy set, and neutrosophic probability – a generalization of the classical and imprecise probabilities.

*Keywords:* Paradoxes; Paradoxism; Neutrosophy; Dialectics; Neutrosophic logic (or Smarandache logic); Neutrosophic set; Neutrosophic probability and statistics; Fuzzy logic; Paraconsistent logic; Intuitionistic logic; Dialetheism; Fuzzy set; Imprecise probability

### 1. INTRODUCTION

It was a surprise for me when in 1995 I received a manuscript from the mathematician, experimental writer and innovative painter Florentin Smarandache, especially because the treated subject was of philosophy – revealing paradoxes – and logics.

He had generalized the fuzzy logic, and introduced two new concepts:

- (a.) “*neutrosophy*” – study of neutralities as an extension of dialectics;
- (b.) and its derivative “*neutrosophic*”, such as “neutrosophic logic”, “neutrosophic set”, “neutrosophic probability”, and

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“neutrosophic statistics” and thus opening new ways of research in four fields: philosophy, logics, set theory, and probability/statistics.

It was known to me his setting up in 1980's of a new literary and artistic avant-garde movement that he called “*paradoxism*”, because I received some books and papers dealing with it in order to review them for the German journal “Zentralblatt für Mathematik”. It was an inspired connection he made between literature/arts and science, philosophy.

We started a long correspondence with questions and answers. Then, I reported this new multiple-valued neutrosophic logic to Dr. Ivan Stojmenovic, who became interested in, and I thank him for offering me the possibility of being a guest editor for this MVJ issue.

Because paradoxism supposes multiple value sentences and procedures in creation, anti-sense and non-sense, paradoxes and contradictions, and it's tight with neutrosophic logic, I would like to make a small presentation.

## 2. PARADOXISM, THE LAST AVANT-GARDE OF THE SECOND MILLENNIUM

### 2.1. Definition

PARADOXISM is an avant-garde movement in literature, art, philosophy, science, based on excessive used of antitheses, antinomies, contradictions, parables, odds, paradoxes in creations.

It was set up and led by the writer Florentin Smarandache since 1980's, who said: “The goal is to enlargement of the artistic shere through non-artistic elements. But especially the counter-time, counter-sense creation. Also, to experiment.”

### 2.2. Etymology

Paradoxism = paradox + ism, means the theory and school of using paradoxes in literary, artistic, philosophical, scientific creations.

### 2.3. History

“Paradoxism started as an anti-totalitarian protest against a closed society, Romania of 1980's, where the whole culture was manipulated

by a small group. Only their ideas and their publications counted. We couldn't publish almost anything.

Then, I said: Let's do literature... without doing literature! Let's write... without actually writing anything. How? Simply: object literature! ‘The flying of a bird’, for example, represents a “natural poem”, that is not necessary to write down, being more palpable and perceptible in any language that some signs layed on the paper, which, in fact, represent an “artificial poem”: deformed, resulted from a translation by the observant of the observed, and by translation one falsifies. ‘The cars jingling on the street’ was a “city poem”, ‘peasants mowing’ a “disseminationist poem”, ‘the dream with open eyes’ a “surrealist poem”, ‘foolishly speaking’ a “dadaist poem”, ‘the conversation in Chinese for an ignorant of this language’ a “lettrist poem”, ‘alternating discussions of travelers, in a train station, on different themes’ a “post-modern poem” (inter-textualism).

Do you want a vertically classification? “Visual poem”, “sonor poem”, “olfactory poem”, “taste poem”, “tactil poem”.

Another classification in diagonal: “poem-phenomenon”, “poem-(soul) status”, “poem-thing”.

In painting, sculpture similarly—all existed in nature, already fabricated. Therefore, a mute protest we did!

Later, I based it on contradictions. Why? Because we lived in that society a double life: an official one—propagated by the political system, and another one real. In mass-media it was promulgated that ‘our life is wonderful’, but in reality ‘our life was miserable’. The paradox flourishing! And then we took the creation in derision, in inverse sense, in a syncretic way. Thus the paradoxism was born. The folk jokes, at great fashion in Ceausescu's ‘Epoch’, as an intellectual breathing, were superb springs.

The “No” and “Anti” from my paradoxist manifestos had a creative character, not at all nihilistic (C. M. Popa). The passage from paradoxes to paradoxism was documentarily described by Titu Popescu in his classical book concerning the movement: “Paradoxism's Aesthetics” (1994). While I. Soare, I. Rotaru, M. Barbu, Gh. Niculescu studied paradoxism in my literary work. N. Manolescu asserted, about one of my manuscripts of non-poems, that they are against-the-hair.

I didn't have any forerunner to influence me, but I was inspired from the ‘upside-down situation’ that existed in the country. I started

from politic, social, and immediately got to literature, art, philosophy, even science.

Through experiments one brings new literary, artistic, philosophical or scientific terms, new procedures, methods or even algorithms of creation. In one of my manifestos I proposed the sense of embezzlings, changes from figurative to proper sense, upside-down interpretation of linguistic expressions.

In 1993 I did a paradoxist tour to literary associations and universities in Brazil.

Within 20 years of existence, 25 books and over 200 comentaries (articles, reviews) have been published, plus 3 national and international anthologies.”

(Florentin Smarandache)

#### 2.4. Features of Paradoxism (by Florentin Smarandache)

##### . #Basic Thesis of Paradoxism:

everything has a meaning and a non-meaning in a harmony with each other.

##### . #Essence of Paradoxism:

- (a.) sense has a non-sense, and reciprocally
- (b.) non-sense has a sense.

##### . #Motto of Paradoxism:

“All is possible, the impossible too!”

##### . #Symbol of Paradoxism:

(a spiral – optic illusion, or vicious circle).

##### . #Delimitation from Other Avant-Gardes:

- paradoxism has a significance, while dadaism, lettrism, the absurd movement do not;
- paradoxism especially reveals the contradictions, the anti-nomies, anti-theses, anti-phrases, antagonism, non-conformism, the paradoxes in other words of anything (in literature, art, science), while futurism, cubism, surrealism, abstractism and all other avant-gardes do not focus on them.

#### 2.5. Directions for Paradoxism (by FS)

- to use science methods (especially algorithms) for generating (and studying also) contradictory literary and artistic works;
- to create contradictory literary and artistic works in scientific spaces (using scientific: symbols, meta-language, matrices, theorems, lemmas, etc.).

#### 2.6. Third Paradoxist Manifesto

Therefore, don't enforce any literary rules on me! Or, if you do, I'll certainly encroach upon them. I'm not a poet, that's why I write poetry.

I'm an anti-poet or non-poet.

I thus came to America to re-build the Statue of Liberty of the Verse, delivered from the tyranny of the classic and its dogma.

I allowed any boldness:

- anti-literature and its literature;
- flexible forms fixed, or the alive face of the death!
- style of the non-style;
- poems without verse  
(because poems don't mean words) – dumb poems with loud voice;
- poems without poems (because the notion of “poem” doesn't match any definition found in dictionaries or encyclopedias) – poems which exist by their absence;
- after-war literature: pages and pages bombed by filthiness, triteness, and non-poeticity;
- paralinguistic verse (only!): graphics, lyrical portraits, drawings, drafts ...
- non-words and non-sentence poems;
- very upset free verse and trivial hermetic verse;
- intelligible unintelligible language;
- unsolved and open problems of mathematics like very nice poems of the spirit – we must scientificize the art in this technical century;
- impersonal texts personalized;
- electrical shock;

- . translation from the impossible into the possible, or transformation of the abnormal to the normal;
- . pro Non-Art Art;
- . make literature from everything, make literature from nothing!

The poet is not a prince of ducks! The notion of “poetry” and its derivatives have become old-fashioned in this century, and people laugh at them in disregard. I’m ashamed to affirm that I create lyrical texts, I hide them. People neither read nor listen to lyrical texts anymore, but they will read this volume because it’s nothing to read!

However, the Paradoxist Movement is neither nihilism, nor despairity.

The book of the non-poems is a protest against art’s marketing.

Do you writers sell your feelings? Do you create only for money?

Only books about crimes, sex, horror are published. Where is the true Art?

In begging... .

You may find in this book of uncollected poems everything you don’t need and don’t like: poems not to be read, not to be heard, not to be written at all!

Enjoy them. Only after nuisance you really know what pleasure means.

They provide a mirror of everybody’s infinite soul. Art, generally speaking, is pushed up to its last possible frontiers toward non-art, and even more... .

Better a book of blanc pages, than one which says nothing.

A very abstract and symbolic language is further used, but very concrete at the same time: non-restrictive verse from any form or content. It takes advantage of cliché against itself.

EVERYTHING IS POSSIBLE, THEREFORE: THE IMPOSSIBLE TOO! Hence don’t wonder about this anti-book! If you don’t understand it, that means you understand all. That is the goal of the manifesto. Because Art is not for the mind, but for feelings. Because Art is also for the mind.

Try to interpret the uninterpretable! Your imagination may flourish as a cactus in a desert.

But, The American Manifesto of the PARADOXISM is especially a revolt of the emigrant to the United States who doesn’t speak English,

against the language – an anti-language book written in more than a broken English (the American speech of Tomorrow?)... .

[From the book: *NonPoems*, by Florentin Smarandache, Xiquan Publishing House, Phoenix, Chicago, 1990, 1992, 1993; the volume contains very experimental so called “poems”, such as:

- . poems without verse;
- . poems without poems;
- . poem-drafts;
- . drawn-poems;
- . poems in Pirissanorenech (language spoken in the South-West of the United States by a single person!);
- . super-poems;
- . graphic poems;
- . upset-poems.]

### 3. “DICTIONARY OF COMPUTING”, BY DENIS HOWE

A well documented and large dictionary, dealing with terms needed in Computer Science, *The Free Online Dictionary of Computing*, is edited by Denis Howe from England (dbh@doc.ic.ac.uk). With his accordance, I cite from his dictionary the definitions regarding this issue of MVJ.

#### 3.1. Neutrosophy

*(philosophy)* (From Latin “neuter” – neutral, Greek “sophia” – skill/wisdom) A branch of philosophy, introduced by Florentin Smarandache in 1980, which studies the origin, nature, and scope of neutralities, as well as their interactions with different ideational spectra.

Neutrosophy considers a proposition, theory, event, concept, or entity, “A” in relation to its opposite, “Anti-A” and that which is not A, “Non-A”, and that which is neither “A” nor “Anti-A”, denoted by “Neut-A”. Neutrosophy is the basis of *neutrosophic logic*, *neutrosophic probability*, *neutrosophic set*, and *neutrosophic statistics*.

Home.

["Neutrosophy/Neutrosophic Probability, Set, and Logic", Florentin Smarandache, American Research Press, 1998].

(1999-07-29)

### 3.2. Neutrosophic Logic

*<logic>* (Or "Smarandache logic") A generalization of *fuzzy logic* based on *Neutrosophy*. A proposition is *t* true, *i* indeterminate, and *f* false, where *t*, *i*, and *f* are real values from the ranges *T*, *I*, *F*, with no restriction on *T*, *I*, *F*, or the sum  $n = t + i + f$ . Neutrosophic logic thus generalizes:

- *intuitionistic logic*, which supports incomplete theories (for  $0 < n < 100$  and  $i = 0$ ,  $0 \leq t, i, f \leq 100$ );
- *fuzzy logic* (for  $n = 100$  and  $i = 0$ , and  $0 \leq t, i, f \leq 100$ );
- *Boolean logic* (for  $n = 100$  and  $i = 0$ , with *t*, *f* either 0 or 100);
- *multi-valued logic* (for  $0 \leq t, i, f \leq 100$ );
- *paraconsistent logic* (for  $n > 100$  and  $i = 0$ , with both *t*, *f*  $< 100$ );
- *dialetheism*, which says that some contradictions are true (for  $t = f = 100$  and  $i = 0$ ; some paradoxes can be denoted this way).

Compared with all other logics, neutrosophic logic introduces a percentage of "indeterminacy"—due to unexpected parameters hidden in some propositions. It also allows each component *t*, *i*, *f* to "boil over" 100 or "freeze" under 0. For example, in some tautologies  $t > 100$ , called "overtrue".

Home.

["Neutrosophy/Neutrosophic probability, set, and logic", F. Smarandache, American Research Press, 1998].

(1999-10-04)

### 3.3. Neutrosophic Set

*<logic>* A generalization of the intuitionistic set, classical set, fuzzy set, paraconsistent set, dialetheist set, paradoxist set, tautological set based on *Neutrosophy*. An element  $x(T, I, F)$  belongs to the set in the following way: it is *t* true in the set, *i* indeterminate in the set, and *f*

false, where *t*, *i*, and *f* are real numbers taken from the sets *T*, *I*, and *F* with no restriction on *T*, *I*, *F*, nor on their sum  $n = t + i + f$ .

The neutrosophic set generalizes:

- the intuitionistic set, which supports incomplete set theories (for  $0 < n < 100$  and  $i = 0$ ,  $0 \leq t, i, f \leq 100$ );
- the fuzzy set (for  $n = 100$  and  $i = 0$ , and  $0 \leq t, i, f \leq 100$ );
- the classical set (for  $n = 100$  and  $i = 0$ , with *t*, *f* either 0 or 100);
- the paraconsistent set (for  $n > 100$  and  $i = 0$ , with both *t*, *f*  $< 100$ );
- the dialetheist set, which says that the intersection of some disjoint sets is not empty (for  $t = f = 100$  and  $i = 0$ ; some paradoxist sets can be denoted this way).

Home.

["Neutrosophy/Neutrosophic Probability, Set, and Logic", Florentin Smarandache, American Research Press, 1998].

(1999-12-14)

### 3.4. Neutrosophic Probability

*<logic>* An extended form of probability based on *Neutrosophy*, in which a statement is held to be *t* true, *i* indeterminate, and *f* false, where *t*, *i*, *f* are real values from the ranges *T*, *I*, *F*, with no restriction on *T*, *I*, *F* or the sum  $n = t + i + f$ .

Home.

["Neutrosophy/Neutrosophic Probability, Set, and Logic", Florentin Smarandache, American Research Press, 1998].

(1999-10-04)

### 3.5. Neutrosophic Statistics

*<statistics>* Analysis of events described by *neutrosophic probability*.

["Neutrosophy/Neutrosophic Probability, Set, and Logic", Florentin Smarandache, American Research Press, 1998].

(1999-07-05)

These definitions receive a more general form in Smarandache's next two papers, and are explained, exemplified, giving them the last versions.

#### 4. COMPARISON WITH FUZZY LOGIC AND APPLICATIONS

Why was it necessary to extend the *fuzzy logic*?

- A. Because a paradox, as proposition, can not be described in fuzzy logic;
- B. and because the neutrosophic logic helps make a distinction between a 'relative truth' and an "absolute truth", while fuzzy logic does not.

Due to the fact that a paradox is a proposition which is true and false in the same time, the neutrosophic logic value  $NL(\text{paradox}) = (1, i, 1)$ , but this notation can not be used in determining the fuzzy logic value  $FL(\text{paradox})$ , because if  $FL(\text{paradox}) = 1$  (the truth) then automatically the fuzzy component of falsity is 0. That's why it's interesting to study the neutrosophics.

Dr. Jean Dezert, from ONERA (French National Establishment for Aerospace Research), got interested in neutrosophic logic as a very promising theory useful for solving practical problems arising in Data Fusion and Multi-Expert systems (he's the organizer of two International Congresses: FUSION 2000 in Paris and FUSION 2001 in Montréal). Dr. Dezert gave it a geometrical interpretation, constructing the *neutrosophic cube*, and his open questions on neutrosophic logic are: how to construct the neutrosophical belief function, the neutrosophical basic mass assignment and a neutrosophical rule of combination?

#### 5. FIRST INTERNATIONAL CONFERENCE ON NEUTROSOPHY, NEUTROSOPHIC LOGIC, SET, PROBABILITY AND STATISTICS

Will be held at the University of New Mexico, between December 1–3, 2001.

Contributed papers should be sent, by November 30, 2001, to the organizer:

Florentin Smarandache, University of New Mexico, 200 College Road, Gallup, NM 87301, USA. Tel.: (505) 863-7647, Fax: (505)

863-7532 (Attn: Neutrosophic Conference). e-mail: smarand@unm.edu, URL: <http://www.gallup.unm.edu/~smarandache/FirstNeutConf.htm>

They will be published in the Proceedings of the Conference.

Abstracts of papers should be submitted to the following web site, provided by The York University, from Toronto, Canada, at <http://at.yorku.ca/cgi-bin/amca/submit/cagu-01>, and they can be viewed at <http://at.yorku.ca/cgi-bin/amca/cagu-01>

Invited Speakers: J. Dezert (France), Charles Le (US), I. Stojmenovic (Canada).

For more information on neutrosophics see the below links (from the conference's web site):

- 0. Introduction.
- 1. Neutrosophy – a new branch of philosophy.
- 2. Neutrosophic Logic – a unifying field in logics.
- 3. Neutrosophic Set – a unifying field in sets.
- 4. Neutrosophic Probability – a generalization of classical and imprecise probabilities – and Neutrosophic Statistics.

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