SEÇÃO 12  IN MEMORIAM: CLAUDE ELWOOD SHANNON (1916-2001)
(V. também o CAPÍTULO 15 do e-book “Boolean Arithmetic and its Applications”, disponível neste SITE)

Information theory pioneer and digital communications figure Claude Elwood Shannon died at the age of 84. Long affiliated with Bell Laboratories, it was at Bell that Shannon wrote one of his most influential papers, “A Mathematical Theory of Communication,” in 1948 (IEEE – Computer 23/03/2001).

“Dopo aver lottato inutilmente con l’Alzheimer, Claude Elwood Shannon, matematico e ingegnere, è morto a Medford, in Massachusetts (Usa). Aveva 84 anni ma sino a che la terribile malattia non lo aveva imprigionato nel silenzio, la sua mente era ricca di pensieri capaci ancora di innovare quel mondo della scienza informatica di cui era stato maestro.” [01]

“I’ve always loved that word: ‘Boolean’, words that I’ll never forget”
(C. E Shannon) [02]

In September 23rd, 1991, I send the following letter to Professor Claude E. Shannon:

To
Dr. Claude E. Shannon
5, Cambridge St.
WINCHESTER, MASS.
O1890 - U. S. A.

Dear Dr. Shannon,

In 07.24.1991, after I read the article: “Profile: Claude E. Shannon – Unicyclist, juggler and father of “Information Theory” written by Mr. John Horgan and published in “Scientific American”, JAN, 1990, p. 22 to 22B, where you refer to your unforgettable contribution, from 1938, about the application of Boolean Algebra in circuits and relays switching logic, and, after a pause to reflection, you said: “I’ve always loved that word: ‘Boolean’, words that I’ll never forget”.

This expression touch me deeply, and in the same day, I wrote to Mr. Horgan the annexed letter (annex 1), asking him to give me your address, so that I could write directly to you. I 08.21.1991, Mr Hogan send me your adress and so I’m writing to you.

In that occasion, when I referred to the creation of Boolean Arithmetic and Technical Linguistics (or, Boolean Linguistics), and happening of the “Fourth Great Crisis in Mathematics”, there was a cross-reference of my studies with the ideas of Ms. Jane Morrill Tazelaar, published in “Byte” from JAN 1991, pp. 236-301, which copy is the annex 2 of this letter. I had then sent to Mr. Jane a collection of papers of my own (12 annexes) about this issue.

I would like to ask you, if you have already received by any of this two ways (Scientific American/Byte) the 12 annexes described in pages 3 and 4 of the letter, dated from 07.24.1991 (annex 1). Case you have not received them, I would be happy to send to you another set of copies.

Dr. Shannon,

I need to tell you about my respect and admiration of your great work. Since my youth, I used to refer your 1938 contribution as the Landmark of the Informatics Age, instead of Von Neumann’s contributions in 1945.

I understand, the Von Neumann’s machine as a by-pass to the truly mathematical solution to the Relay’s Switching Logical Circuits you had outline before. In fact, Informatics lacks nowadays a solid mathematical background both for its hardware and software fields.

I am now proposing a “Boolean Arithmetic”, mathematically isomorphic to the “Boolean Algebra”, to replace the current empirically and manufacturer oriented approach used in these fields, introducing Mathematical Machine Language.

In the “Boolean Arithmetic” it is possible to obtain the Complete Solution of any Simultaneous Boolean Equations Systems, what enables any Text Deduction. It is now possible to implement a Reversible Language, which I have named “Esperangol, Direct & Reversible Computational Language”, recalling the idea of the Esperanto Language.

To finishing, I annex to you a summary of my Curriculum Vitæ (annex 3) telling you that it will be a great pleasure to me have your comments on this issue, because of, as you, I’ve always loved that word “Boolean”.

Yours Sincerely,

Professor Wagner Waneck Martins

P.S.
Copy to Mr. John Horgan & to Ms. Jane Morrill Tazelaar
“Scientific American” Review – 415, Madison Avenue New York, N. Y. – 100017 – USA
The referred letter to Mr. John Hogan, Member of the Board of Editors / Scientific American, was the following:


To
Mr. John Hogan
Member of the Board of Editors / Scientific American
415, Madison Avenue

Dear Sir,

In your "PROFILE - C.E.Shannon" interview, reference is made to Shannon's phrase "I've always loved that word 'Boolean'". This phrase, in my opinion, summarizes all the unforgettable and pioneer contribution (1938) of Mr. Shannon to apply Boolean Algebra to the relay switching circuits, seven years before (1945) Von Neumann obtained the technological conditions, that allowed the Initiation to the Informatics Age. But this happening was also, the last time that MATHEMATIC was applied, successfully, to this future news field of scientific development.

Nowadays all software are built EMPIRICALY and so, they are not "failure" safe. MATHEMATICS is not used in MICROELECTRONICS, in order to obtain a MATHEMATICALLY ZERO FAILURE PROGRAMMING.

I am sure that Mr. Shannon will love, even more, the word "Boolean", when he get to know that it is already possible to do the same thing as he did in the relay age (1938)" with the isomorphic BOOLEAN ARITHMETIC, as now in the MICROELECTRONIC AGE with the MATHEMATICS PROGRAMMING (failure safe), that can be allowed in a BOOLEAN MATHEMATICS.

From the BOOLEAN ARITHMETIC came a reversible computational language that constitutes TECHNICAL LINGUISTICS (or BOOLEAN LINGUISTICS). I have called it "DIRECT AND REVERSE ESPERANGOL". This way, it was possible to obtain a complete solution of a "Simultaneous System of Boolean Equations" with the desired DEDUTION OF TEXTS, and the MATHEMATICALLY ZERO FAILURE PROGRAMMING, above mentioned.

The new MATHEMATICAL MACHINE LANGUAGE (MML), given by this Boolean Arithmetic, will make IMPOSSIBLE the VIRAL PROLIFERATION actual in the sector. On the other hand, being mathematical (and so abstract), will be UNIVERSAL as would desire HILBERT. This shakes some current conclusions (due to KURT GÖDEL) about the completeness of linguistics axiomatic system.

GORDON JR., C. K., in his article ("The Third Great Crisis in Mathematics" - Spectrum Review, IEEE, May, 1968), refers to this crisis in Mathematics, where it is pointed out that the common cause was represented by the lack of concept of time in the Mathematical Foundation, in my opinion, the great responsible by the successive eclosions of such crises.
Since this problem has not yet been solved, out of our Group - GEMMT (see GREGORY J. CHAITIN, "Randomness in Mathematics" - Scientific American Review. July, 1988, pp. 326-301), this fact reinforces our thinking that we are entering a "Fourth Great Crises in Mathematics", due to the growing need of a "Mathematization" of INFORMATICS.

Recently, your colleague editor of BYTE REVIEW, Ms. JANE MORILL TEZELAAR, presented the "state of the art" of ARTIFICIAL INTELLIGENCE, through seven articles wrote by the best experts in theirs fields, and a "Resource Guide: Intelligent Software", where an illustration of Doug Pauline (p.237) has the suggestive title "AI: METAMORPHOSIS OR DEATH? (see BYTE REVIEW - Jan., 1991, pp. 236 - 301).

The lack of a common nucleus in the different applications of the AI is emphasized in the beginning and in the end of the presentation of the articles. The editor tries to justify the proposed dilemma, as follows:

In the beginning...

"Is artificial intelligence dead? If it’s not, it is without doubt undergoing a major transition, but whether that change precedes a death or a rebirth into different form, I cannot say. The chasms within the AI community are widening to create the appearance of various disciplines, rather than different branches of the same tree. Which way AI as a whole - if such a concept exists anymore - is headed is a good question."

In the end...

"Is AI dead? Not yet, but it’s either going through the throes of a terminal illness or agony of childbirth. Certainly some areas once considered the exclusive domain of AI are alive and well. But whether they will move out permanently on their own or regroup under AI’s umbrella, I don’t know. And I won’t pretend to much my predictive powers against the likes of Minsky and Winograd”.

The objective of this report is, to ask for your special favor to make Mr. Shannon know its contents. If you prefer, please, send me Mr. Shannon's address (probably in Boston) so I can write to him directly.

I inform you that I am mailing a copy of this letter, to your colleague of "BYTE", Ms. Teazelaar, but not to Mr. Chaitin, because of it is an article of the "Scientific American".

I thank you very much for your kind attention and I stay at your disposal for any additional information you may need.

Yours Very Truly,

Professor Wagner Waneck Martins

NOTE: Both of these letters were without any answer. But now, with the launch of the “Boolean Arithmetic And Linguistics’ HOME PAGE (or, BAAL’HOME PAGE)” in the site “http//www.poli.usp.br/pea5737”, of ESCOLA POLITECNICA of SÃO PAULO UNIVERSITY, BRAZIL, I would like to dedicate this launch,