

## TOWARDS A COMPLETE THEORY OF INFORMATION. BEYOND THE SHANNON'S COMMUNICATION THEORY

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*Beyond the statistical (and numerical) aspects of information, there are several other important aspects that are not at all examined by the Shannon's theory. Starting from the proposals of Werner Gitt, this work examines a 6 levels Information concept, which involves also a 4<sup>th</sup> (in the Complexity order) level intended to the quality check of the transmitted information (by means of the identification and elimination of all ambiguities and possible misunderstanding). Following a very short examination of the basic notions of the Shannon's statistical information theory [of the definition of the Shannon's information amount (entropy), inclusively], the complex physical process of the continuous (Bremsstrahlung) X- radiation was chosen to study and exemplify the effective content of the successive steps of the Information concept.*

**Key words:** Shannon's Information Theory, Syntax, Semantics, Information Accuracy, Pragmatics, Apobetics

### 1. Introduction

Given being that the applications of Shannon's information theory [1]-[5] are well known, we will examine now mainly the criticisms of this theory and the possibilities to achieve some suitable completions.

So, the German cyberneticist Bernhard Hassenstein criticized the Shannon's information theory in the following words: "It would have been better to devise an artificial term, rather than taking a common word and giving it a completely new meaning" [6].

According to the information specialist Werner Gitt "no science, apart from the communication technology, should limit itself to just the Claude Shannon's statistical level of information" [7].

Several authors repeatedly pointed out that Shannon's definition of information encompasses only a very minor aspect of information [8], p. 50. Even Warren Weaver – the Mathematics professor and main collaborator of Claude Shannon has written [3]: "Two messages, one of which is heavily loaded with meaning and the other which is pure nonsense, can be exactly equivalent ... as regards information".

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