

## ENTANGLING INFORMATION THEORY

Paolo Manzelli <[pmanzelli@gmail.com](mailto:pmanzelli@gmail.com)> ; [www.egocreanet.it](http://www.egocreanet.it)

**This paper is written in order to look for a very simple approach to improving the present conceptual structures of the physics of information.**

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The ancient concept of information has its origin in the Latin and Greek roots of this word, namely in “*informatio/informare*” that, for instance in human art and science, means the idea (*Eidos*) that anticipates the action to give a form (*Motphe'*) to a piece of matter and, metaphorically, to teach the mind. For ancient scientists, the fundamental ideas that generate all types of natural forms are a direct consequence of the “*intelligence of nature*”. Humans belong to nature, so that they are able to “*in-form*” new contexts of the mind and of material constructions. Therefore, all living and non-living forms are just immersed in a pre-given communicative natural context in order to permit the development of a broad horizon of informational alternatives, all driven through fundamental “*natural intelligence*”.

More recently, at the beginning of “*Information Technology*”, *Claude Shannon and Warren Weaver* (1949) developed their mathematical theory of information communication. In his work, C.E. Shannon used this measure of information to understand the channel's efficiency in the transmission of data between an information source and the receiver - to slow down the noise or the distortions of the signals. Hence the research of Shannon was important for the development of digital encoding and modern electronic communications. Shannon's papers also contain the first use of the word “*bit*” as shorthand for “*the binary digit*.” (0,1). As a matter of fact, Shannon's work accepts the traditional spitting of mechanical science, between subject and object. So that “*Information Theory*” takes a strong distance from the ancient concept of information, aiming only to establish a probabilistic approach to calculate the quantitative transmission of “*information contents*”, with regard to the process of selection and communication of signals, independent of the meaning of the information. It is obvious that a message can become “*effective information*” if there is a basis of “*pre-understanding*” of sharing symbols or codeces. This is a necessary condition, not only for a “*qualitative*” considerations, but also in the case of establishing a purely “*quantitative*” measure of information content. Therefore the “*mathematical theory of information*” has a serious conceptual limitation, because it does not permit conception of any meaning for the information. The problem is that the meaning depends on the “*pre-understanding*” of the possibility of sharing a common set of rules on a purely communicative, physical basis, before starting to exchange messages. This common context of sharing a fundamental codification, is ultimately the necessary requisite for all communication in nature, inclusive of the mode of existence for communicative beings.

### - ENTANGLING EFFECT GENERATING A PURE COMMUNICATION INFORMATION ENERGY -

Nowadays it is necessary to revise the antique intuition of the meaning of information, through a critical change in mechanical reductionism of scientific understanding. In fact, in the

incoming “*knowledge society*” science, and in particular neuro- and bio-sciences, it has become necessary to be able to explain how communication systems have fundamental physical meaning. This is because information is necessary for understanding the evolution of life.

In particular, the *idea* of “*flow of information*” cannot be more oriented, as in the classical approach, towards finding only the conditions for improving transmission between different natural or mechanical sources and all types of receivers. In fact, it is no longer possible to avoid the question of the “*physical meaning of information*”, on the basis of the traditional acceptance of some conventional codifications like “*nature of artificial models of languages*”. The scientific endeavour today is to find a way through which it is possible to give a fundamental meaning to the “*information*” that is the basis of what we know about reality, both semantically and pragmatically. Hence “*information meaning*” needs to be “*deconstructively*” analyzed to fill the formal *idea* of fundamental “*Information Energy*” as a basic codification for giving equivalence to all contingent Energy and Matter codifications .

This goal can be enriched by changing the reductionistic approach to mechanical concepts in science.

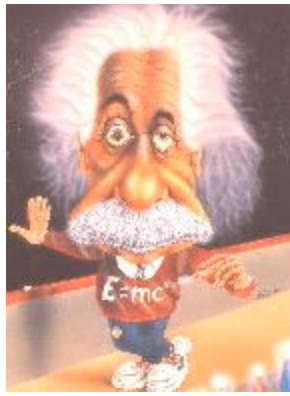
Working for greatly improving the above conceptual change, we can today look to “*Quantum-entanglement*” as a key resource in “*non-local quantum information*”.(3) Furthermore, “*Entanglement Theory*” can help us understand the relationship that gives physical meaning to information systems on the basis of an universal Space-Time codification of the fundamental “*Information Energy*”.(4) Therefore in the conceptual context described by the “*Entanglement Theory*”, we can admit the existence of two dimensional systems for processing information:

a) - The classic information transmission, from a local *-state 1-* to a different local *-state 2-* . In this case, the information can be transmitted *no faster than the speed of light* and space-time is based on a cartesian dimensionality (**x,y,z,t**)

b) - After the “*entanglement of photon's pairs*”, their energy decays near to the “*zero point*” e.g. lower to the “*Uncertainty Principle*” level; so that Energy, at very low frequencies , assumes an hologrammatic “*non-local dimension*”, that permits synchronicity and simultaneity in the exchange of fundamental “*Information Energy*” (**I**) . The last (**I**) is in fact living in a two dimensional structure of space and time with coordinates (**x,y, t1,t2**) , and this space-time codification, represents the common codex for translating all forms of energy into the different systems of Energy/Matter transformations.

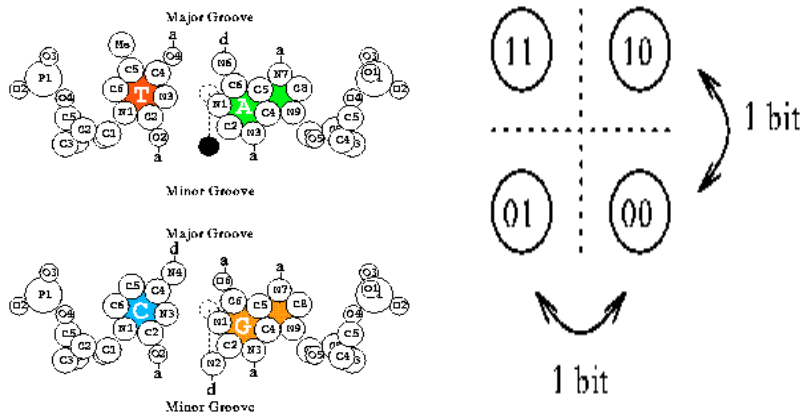
Therefore “*Information Energy*” (**I**) can be seen as a *universal codification model* for any related process of energy transformation which allows a predisposition of free-energy (**E**) and energy codified like matter (**M**) to be “*in-formed*” in their interaction and transformations.

The generalized “*Entanglement Theory*” suggests that (**I**) evolved initially as a form of communication needed to enable all the other **E/M** interactions in order to “*self-catalyse*” their organizational changes according to physically specified, basic informational patterns of codification that can be expressed in “*Q.Bits*” . On this basis, it is possible to think about the “*co-evolution*” of different forms of communication between living and non-living organisms that finally, can be interpreted by means of social group languages.



<http://www.edscuola.it/lre.html>

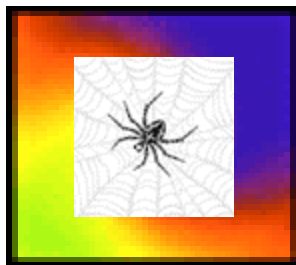
## “DNA-BASES” and “Q-BITS” CORRELATION.



A very important result of the “*Entanglement Theory*” , conceives the possibility to understand the “*genetic controll of DNA on a living cell till the programmed “apoptosis” by means of working at distance as a “quantum bio-antenna”* (5).

### **BIBLIO on LINE**

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- (2) - Glossary : <http://www-lmmb.ncifcrf.gov/~toms/glossary.html>
- (3) -Q.Entanglement and Information - <http://plato.stanford.edu/entries/qt-entangle/>
- (4) - Information Energy : [www.wbabin.net](http://www.wbabin.net) ; [www.egocreanet.it](http://www.egocreanet.it); [www.edscuola.it/LRE.html](http://www.edscuola.it/LRE.html)
- (5) - DNA- antenna : <http://www.geocities.com/egocreanetperu/> ; [www.wbabin.net](http://www.wbabin.net)



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