NUCLEAR ENERGY: WHITE LIE AND PAINFUL TRUTH

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WOULD YOU BELIEVE ME WHEN I SAY THAT LOW DOSES OF IONIZING RADIATION (≤ 100 mSv) ARE NOT DANGEROUS FOR HUMAN, BUT COULD BE BENEFICIAL?
We enter in an era of uncertainty, which is characterized by an increasing overload of contradictory or misinterpreted information. People won’t know any more either whom or what to believe.
Left hemisphere: activities such as Analyzing, calculating, Classifying...

Right hemisphere: in a more comprehensive way and referring to symbols

None hemisphere superior to the other
Two hemispheres on equal footing and endowed with good connections
Man is an amphibious living simultaneously in two different worlds.
As scientists or engineers, live closer to the dry world of facts.

Judgement of value based on elaborate and differenciated quantitative analysis.
Majority live in an ocean of symbols

Judgement of value formulated on basis of overall comparison with pre-existing symbols

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SCIENCE IS BECOMING MORE AND MORE SUBTLE AND COMPLEX. IN THE PUBLIC MIND, THIS SITUATION WEAKEN THE WORLD OF THE FACTS AND STRENGTHEN THE WORLD OF THE SYMBOLS.
AS NUCLEAR ENERGY IS CONCERNED, MANY PEOPLE HAVE STORED IN THEIR MINDS NOT FACTS BUT POWERFUL SYMBOLS RELATED TO THESE FACTS
NUCLEAR ENERGY HAS AWAKENED IN MANKIND PRE-EXISTING SYMBOLS STEMMING FROM RELIGION, MAGIC, SUPERSTITION, MYTHOLOGIES. FOR MILLENNIA, THOSE SYMBOLS HAVE EITHER FRIGHTENED OR FASCINATED HUMANITY.
LET US MENTION SOME THOSE SYMBOLS:

- THE TREMENDOUS POWER STORED IN A SMALL AMOUNT OF MATTER
- MAGIC TRANSMUTATION OF MATTER (THE ALCHIMISTS DREAM)
- PROMETHEE PUNISHMENT DUE TO Appropriation OF ENERGY WHICH IS A PREROGATIVE OF GOD
LET US MENTION SOME THOSE SYMBOLS:

- THE SORCERER’S APPRENTICE OVERTAKEN BY HIS OWN INVENTION
LET US MENTION SOME THOSE SYMBOLS:

- The insidious nature of invisible radiation likely to destroy everything (the "death" radiation), likely the genetic potential
LET US MENTION SOME THOSE SYMBOLS:

- THE PRODUCTION OF INFINITELY TOXIC WASTE
IT IS THE UNKNOWN, ASSOCIATED WITH FRIGHTENING SYMBOLS THAT KEEP FEAR ALIVE.
SINCE HIROSHIMA AND TCHERNOBYL, FACTS HAVE ACTIVATED PRE-EXISTING SYMBOLS. MANY PEOPLE HAVE REVIVED THE OLD NEARLY FORGOTTEN SYMBOLS.
USING THE ABOVE MENTIONED SYMBOLS, PEOPLE HAVE CONSTRUCTED REPRESENTATIONS OF WHAT A NUCLEAR ACCIDENT WOULD BE LIKE IF IT REALLY OCCURRED. THEY ARE MANY TO ELABORATE THESE REPRESENTATIONS IN THEIR MINDS AND MORE SPECIFICALLY IN THEIR RIGHT BRAIN.
IN SUCH VIEW, FUKUSHIMA MUST BE A NUCLEAR DESASTER
Some authors used the Shannon definition of entropy to value the increased organization of « collective information ».

Initial non-organized structure mind might be described by analogy with the random motion of gas molecules.
What Is Entropy?

The total loss of efficiency is a measure of the increase in entropy. (de Rosnay)

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\[ E = W + Q \]
\[ \Delta S \uparrow \]
ORDER = n

\[ E = W \]
\[ \Delta S = 0 \]
ORDER = 1
Maxwell « devil » paradox

« Maxwell » devil may increase order entropy (Clausius definition) without work. Maxwell forgot his devil must know the colour of the ball !!! ⇔ Information!
A direct valuation of the entropy of information sets in the framework of thermodynamics laws will found a direct identity between Clausius “entropy” and Shannon “entropy”
Faced with the no-ordered distribution mood about nuclear risks (Bose Einstein distribution), the Demon – information system - introduces order (homogeneous opinion grouping) which is described by negentropy of information
From a «virgin» information system to an «organized» information system
The evolution from the Bose Einstein distribution to the Fermi Dirac distribution can be valued by the valuation of the fuzzy entropy of the transient state.
In the FCM, under the normalization constraint of 
\[ \sum_{c,i=1} u_{ik} = 1, \quad \forall k, \]
We may introduce fuzzy entropy \( L_{LE} \) to the Lagrange function \( L_{FCM} \) with the Lagrange multiplier \( \lambda \) and rewrite the Lagrange function as 
\[ L = L_{FCM} - \lambda L_{LE} \]

The distribution function becomes:

\[ n_i = \frac{g_i}{e^{(e_i - \mu)/\lambda} + 1} \]
This approach to the negentropy of the perception of individuals is in line with the framework of systemic analysis considering the concept of negentropy, which Norbert Weiner described as a physical result of information and as descriptive of the cohesion of a group.
From individual behaviour to collective behaviour

From the moment of the appearance of centres of governance, the system evolves progressively according to continuous modifications of state, which may be qualified as microscopic, until a critical state is reached; the system will brutally swing into a new state. The continuous suite of microscopic modifications is succeeded by a macroscopic upheaval.

THERE WILL BE PERCOLATION
ANY SOCIETY IS COMPOSED IN VARYING PROPORTIONS OF THREE GROUPS WHICH CAN BE DISTINGUISHED BY SYSTEMS VALUES DOMINATED BY:

1. FREEDOM
2. ORDER
3. PURITY
THE PIONEERING
« HEROIC » SOCIETY
initiative, pragmatism,
individualism, power seeking,
freedom

INDIVIDUALS ARE DYNAMIC, OPTIMISTIC, PRAGMATIC,
INDIVIDUALISTIC. FREEDOM IS THEIR MOST PRECIOUS
POSSESSION. DANGEROUS SITUATION IS A CHALLENGE.
THEY ARE NOT MUCH CONCERNED BY RISKS AND
ECOLOGICAL ISSUES
THE REGULATING « BUREAUCRATIC » SOCIETY

caste distinction, hierarchy, structure, method order

THIS SOCIETY IS CHARACTERIZED BY WORDS SUCH AS METHOD, STRUCTURE LAWS, HIERARCHY AND CLASSIFICATION. DANGERS CONSTITUTE AN OPPORTUNITY TO STRENGTHEN THE REGIME OF LAWS
THE MORALISING «SECTARIAN» SOCIETY

self-destruction, sectarianism

cleanliness, health

purity

THIS SOCIETY FAVOURS HEALTH, CLEANLINESS, PROTECTION, MORALS AND ABOVE ALL PURITY. IT IS PREDISPOSED TO EMERGENCE OF A PSYCHIC EPIDEMIC IN RELATION WITH IMPURITY OR SIN
« PURISTS » ENDEAVOUR TO COMPENSATE FOR THEIR FEAR OF DEATH BY DEMANDING AN ABSOLUTE SAFETY THAT IS BOUND TO REMAIN SHEER UTOPIANISM
NORMAL THINKING IS BASED ON THE BELIEF IN A GREATER OR LESSER DEGREE OF PROBABILITY

PARANOID-LIKE THINKING IS BASED TO HAVE THE ABSOLUTE CERTAINTY THAT SOMETHING COULD HAPPEN EVEN IN THE MOST REMOTE CIRCUMSTANCES
« PIONEERS » AND « PURISTS »
CAN NEVER AGREE,
WHICH GIVE A KEY ROLE
TO THE « BUREAUCRATS »
TO DAY THE « PURISTS » HAVE BECOME A STRONG GROUP. IN SOME COUNTRIES, THEY WERE ABLE TO CREATE A NEW COALITION WITH « BUREAUCRATS », TO KNOCK THE PIONEERS OUT OF THE CONTEST AND CUT OFF THE MOTOR OF THE SOCIETY.
Three models of Internet communication

- NETWORK COMMUNITY
- MEDIA CONVERGENCE
- CLOUD COMPUTING
The era of internet information is marked by the emergence of three models, which drive the information communicated by pro-nuclear, anti-nuclear and scientific stakeholders: network community contributes to further self-organization of anti-nuclear individuals; media convergence helps to optimize the communication efficiency of pro-nuclear groups; cloud computing facilitates the communication of scientific pro-nuclear knowledge.
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