

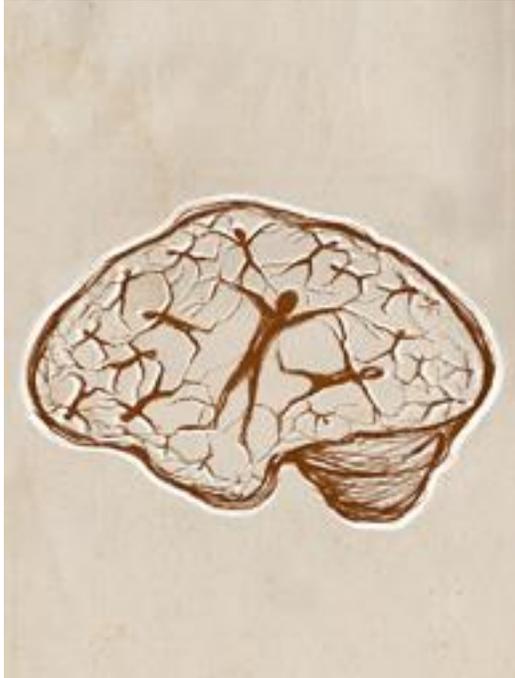
Translation by Patrizia Rustichelli-Stirgwolt

## **The review of the Italian association of psycho-neuro-endocrine-immunology**

Edited by Francesco Bottaccioli

# **PNEI NEWS**

**The new knowledge of science and health**



**Nobody is healthy alone.**

Neurosciences explain the social sources of health and disease.

Pnei News – bimonthly review – nr 1 – year IX – January – February 2015

**PNEI NEWS NR 1 – JANUARY – FEBRUARY 2015**

## **EDITORIAL**

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Francesco Bottaccioli

## **SOCIAL NEUROSCIENCES**

### **Interview with John T. Cacioppo, leader in the social neurosciences**

#### **Page 4. A healthy social network is at the core of individual health**

Born at the beginning of the 1990s, social neuroscience is a modern discipline. In 1992 Cacioppo and Gary Bernston signed a paper for the *American Psychologist* where this definition appeared for the first time.

Paola Emilia Cicerone

#### **Page 7. Optimal experiences, resilience and stress**

Based on the outdated theory of an imbalance in the dopamine receptors, the pharmacological treatment for schizophrenia has produced scarce results. It is now time to consider new ways to better understand a multifactorial, heterogeneous pathology and its fluctuating course.

Massimo Agnoletti

## **PSYCHOLOGY : Social emotions**

### **Page 11. Emotional intelligence: when an emotion is information**

Thanks to the educational works of Daniel Goleman, this concept has widely impressed the collective imaginary. At a scientific level although they are still working on finding an agreement regarding its formulation and psychometric composition.

Angelo Carrieri

## **DOSSIER**

### **ELECTROMAGNETIC FIELDS**

#### **Page 15. According to Mr Renzi there is no risk**

The danger of mobile phones, non-ionizing electromagnetic fields and the importance of the precautionary principle

Angelo Levis

## **PHILOSOPHY: A Critic to reductionism**

### **Page 20. Chemical philosophy: a matter of style.**

Chemistry is normally considered as a reductionist science. It is actually a systemic science. Its investigation relies indeed on two fundamental principles of complexity: focus on the context and on the level of explanation of a phenomenon which is necessarily not the minimum one.

Ermanno Bencivenga, Alessandro Giuliani

## EDITORIAL

### Cancer and “bad luck”

Francesco Bottaccioli – Master Director of “PNEI and Science of Integrative Care”, University of Aquila

The article from C. Tomasetti and B. Vogelstein has generated much controversy since its publication on *Science*<sup>1</sup> on 2<sup>nd</sup> January 2015. Their paper in fact suggests that the majority of cancer occurs by chance, depending on random spontaneous genetic mutations arising during the normal stem cell divisions. The widespread debate arisen was amplified by the media coverage.

The reactions to this paper did not take long to appear. A first wave of responses was already published on the issue dated 13<sup>th</sup> February<sup>2</sup> of the same journal. They included statements from groups of scientists from MIT, International Agency for Research on Cancer (IARC), Harvard University and other prestigious institutions.

They all pointed to the limitations shown in the paper methodology as well as to the substantial incorrectness and danger implied in the conclusions published by the two researchers from the John Hopkins University.

None of these critiques were reported in the Italian media where the majority of the journalists depend on the press releases and are not used and often do not even have the competence to access directly to the sources of information.

The criticisms can be summarized as it follows: the paper did not include the most frequent cancers worldwide (breast, prostate, stomach, cervix, lymphoma) while it emphasized very rare cancers (e.g. osteosarcoma). Moreover the study focuses exclusively on the United States and did not consider the fact that cancer incidence differs among geographical areas and populations and, over time, within the same population. For example the incidence of oesophageal cancer rate is 100 times more among men from the Jiashan County in China and the Afro Americans in South Carolina than among men from Algeria who have the lowest incidence. In Japan the colorectal cancer was once rare but its incidence has increased 4-fold in just the last two decades most likely because of changes in the environment, the diet and lifestyle. In the same way the incidence of lung cancer attributed to cigarette smoking differs between genres where it drops in the males and increases in females.

The two biostatisticians from the John Hopkins University reply to the criticisms with mainly one argument: until now the study of cancer etiology has not taken into account the component related to the DNA replication of the stem cells and the inevitable genic replication errors. This is a true but also obvious statement: by increasing the number of cell divisions (and thus also the age of the tissues), it increases also the risk of errors, in fact the risk of cancer increases with the ageing of the population. It is the same as saying that by getting old it increases the risk of dying and cancer is the first in line among the several causes of death. Be aware that the proposed argument is not harmless: the conclusions drawn by C. Tomasetti and B. Vogelstein are indeed very dangerous as they imply that, due to the prevalence of the kind of cancer genesis, medicine and public policies should focus on early detection rather than on prevention. Thus not to take action to reduce risk agents such as environmental pollution or social factors such as nutrition,

stress, physical inactivity, but recurring to the mass screening to identify the tiniest cellular abnormality. The mass screening strategy<sup>3</sup> has by now proved to be harmful and ineffective. Primary prevention is the main path to follow as Angelo Levis, a respected Professor of environmental mutagenesis, reminds us in his article regarding the exposure to non-ionizing radiation produced by Wi-Fi networks. This issue calls the governments and the society to play their active role in prevention. As, the leader in social neurosciences, John Cacioppo, reminds us in his interview: nobody is healthy alone.

1. Tomasetti C., Vogelstein B (2015) Variation in cancer risk among tissues can be explained by the number of stem cell division, *Science* 347: 78-81
2. Sills J (ed) Letters, *Science* 347: 727-731
3. Ahn HS, Kim HJ, Welch HG. (2014). Korea's thyroid-cancer "epidemic"--screening and overdiagnosis. *N Engl J Med* 371(19):1765-7; see also: 2014 *N Engl J Med* 370;21 Bilder Adorno N., Juni P. (2014) Abolishing Mammography Screening Program? A View from the Swiss Medical Board *Pnei News* 3-4: 20-22