The Science of the Simile

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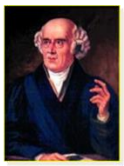


The Science of the Simile

Prof. Paolo Bellavite MD

Sorrento 25 September 2019

University of Verona
Verona Homeopathic Medicine School

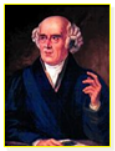
1**The Science of the Simile - Paolo Bellavite**

Thanks for your kind invitation to this prestigious congress, I am really happy to be here and I still remember the first "Liga" congress in which I participated, which was held nearby, in Capri in 1996.

The Science of the Simile

Paolo Bellavite

Summary



1. Homeopathy as Science
2. Experimental studies of the Simile
   - Laboratory evidence
   - The "dose" and "dilution"
3. Conceptual models

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2 SUMMARY

Actually, here I report the last and I think best expression of my view of the scientific ratio of homeotherapeutics and for this reason I decided to publish all the figures and the text in my website to be freely available to all homeopaths and doctors interested in learning homeopathy.
This presentation (figures and oral text) deals with three main points: the first if Homeopathy is a medical science or a pseudoscience as many claim, the second concerns a synthesis of the experimental activities showing that Homeopathy actually is (also) a science, with a focus on those of my group, the third an attempt to explain the homeopathic Simile using conceptual models in the field of complexity and the theory of dynamic systems.

TYPICAL ATTACKS to HOMEOPATHY

- Homeopathic principles are not «plausible»
- There is no evidence of efficacy
- Homeopathy "is" placebo
- Homeopathic products are just water and sugar

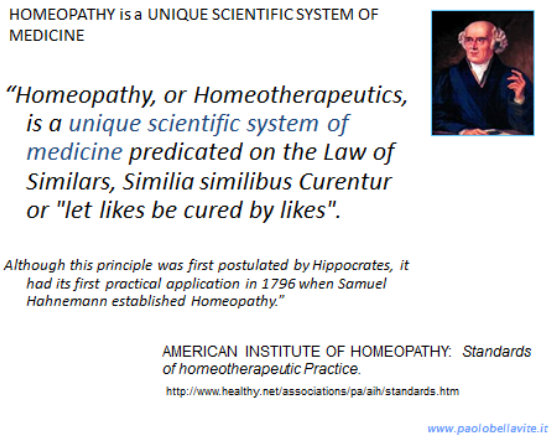
therefore…

- Homeopathy is «pseudo-science»

3 **TYPICAL ATTACKS to HOMEOPATHY**

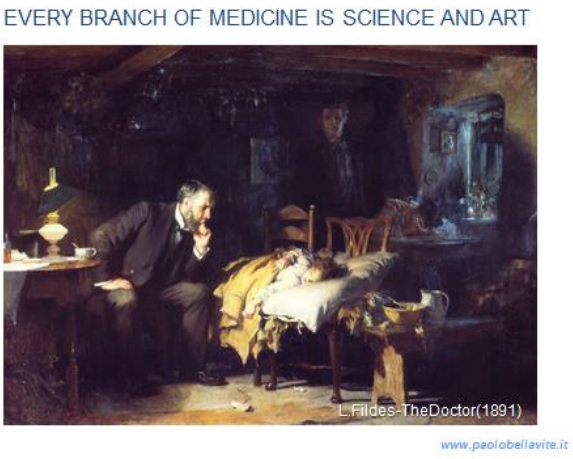
It is well known that homeopathy is often attacked on the grounds that it is not scientific and that typical statements are as follows:

Homeopathic principles are not «plausible», There is no evidence of efficacy, Homeopathy "is" placebo, Homeopathic products are just water and sugar...
In the end the critics condense the concept into the idea of "pseudoscience"
This last accusation is read, for example, on Wikipedia.
However, the first statements have been already falsified and therefore even this conclusion is false, besides being incorrect on an epistemological level.



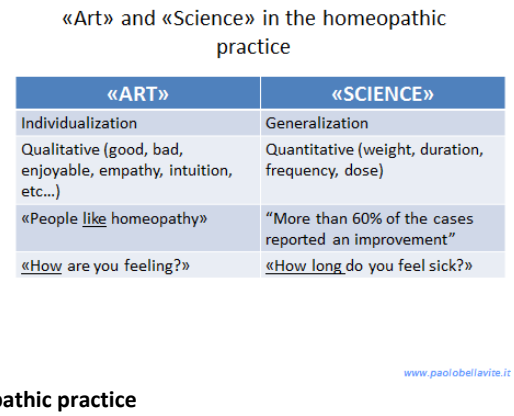
4 HOMEOPATHY is a UNIQUE SCIENTIFIC SYSTEM OF MEDICINE

I like that the American Institute of Homeopathy defined homeopathy as "a unique scientific system of medicine" predicated on the Law of Similars, Similia Similibus Curantur or "let likes be cured by likes". The Law of Similars is the centre of this system and any effort to verify or confute this law represents a scientific progress.



5 EVERY BRANCH OF MEDICINE IS SCIENCE AND ART

(Fieldes) However we must be well aware that homeopathy is not only a science but also an art. Each branch of medicine has in itself aspects that can be approached with scientific criteria and others that are not. This is very important for not making the mistake of believing that everything is scientifically explainable. What is the difference then?



6 «Art» and «Science» in the homeopathic practice

Homeopathy is an ART when applied on a SINGLE and unique patient («INDIVIDUALIZATION"), It is a SCIENCE of therapeutics when applied on a SERIES of patients («GENERALIZATION»)
Claude Bernard a French physiologist said that: L'ART C'EST "MOI" LA SCIENCE C'EST "NOUS" (ART IS "I", SCIENCE IS "WE"). Art is subjective, Science is objective.
Art is more interested in the "quality" of life, Science to the quantitative parameters of our physiology
For example, when one is saying "people like homeopathy" we speak as an artist, when we give a percentage of improvement, we speak as scientists.
When the doctor asks "HOW" are you feeling, the question belongs to the art of medicine, when he asks "HOW long", he enters in a scientific argument.
Clearly, Homeopathy can be seen from the two sides, and both sides are useful in the practice of this medicine.

THE «SCIENTIFIC» APPROACH TO THE STUDY OF HOMEOPATHY IS POSSIBLE

British Homeopathic Journal (2001) 90, 189-197

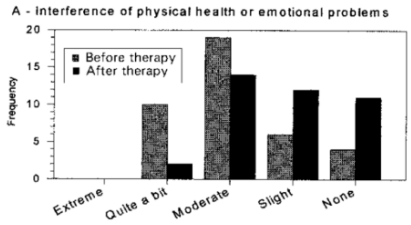
www.nature.com/bhj

ORIGINAL PAPER

Observational study of quality of life in patients with headache, receiving homeopathic treatment

G Muscari-Tomaioli[1,2*], F Allegri[1], E Miali[1], R Pomposelli[2,3], P Tubia[1,2], A Targhetta[1], M Castellini[2] and P Bellavite[4]

[1]Study Group on Non Conventional Medicine of the Medical Assoc School of Verona, Italy; [2]Belladonna Homeopathic Association, Mi Medicine, Department of Biomedical Morphological Sciences of Ve



"The differences between pre=post post treatment were statistically highly significant, with the strongest results in the 'bodily pain' and 'vitality' parameters (P<0.0001)."

7 THE «SCIENTIFIC» APPROACH TO THE STUDY OF HOMEOPATHY IS POSSIBLE

Homeopathy has been an experimental science since the beginning, but its presence in the scientific literature is more recent. I can present just a few examples of scientific approach to homeopathy.

This study describes the results obtained from a prospective observational research of homeopathic treatment for patients suffering from headache (migraine and tension-type headache). The research was carried on by a group of doctors of the Verona homeopathic medical school. Fifty-three patients were asked to complete a questionnaire at the beginning of the treatment and after 4 – 6 months. Analysis of the data showed that more than 60% of the cases experienced an improvement in pain and the limitations caused by pain, as well as in limitations in social activities and health in general. Following this experience, we conducted other studies with the homeopathic medical association called "Belladonna", on arthrorheumatic diseases and on diabetic neuropathy, that were published in literature and available also in my website.

Homeopathy (2015) 104, 322–327

http://dx.doi.org/10.1016/j.homp.2015.08.008, available online at http://www.sciencedirect.com

Scientific proving of ultra high dilutions on humans

Harald Walach[1,*] and Michael Teut[2]

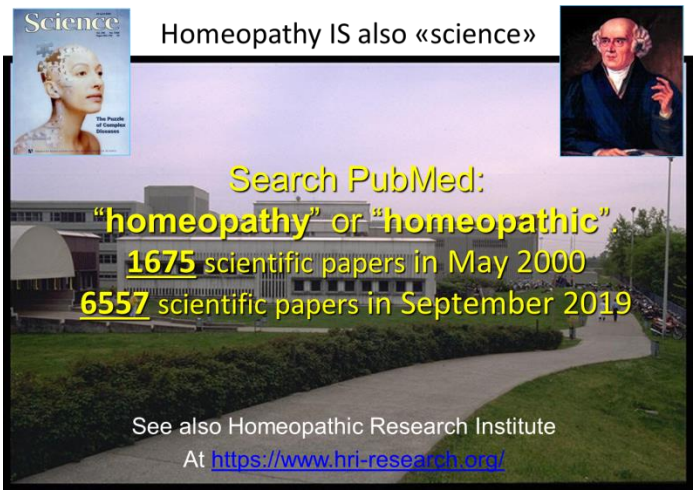
[1]European University Viadrina, Institute of Transcultural Health Studies, Frankfurt (Oder), Germany
[2]Institute for Social Medicine, Epidemiology and Health Economics, Charité Universitätsmedizin Berlin, Germany

Study (Reference)	Design, substance	Data-collection	Outcome
Möllinger et al 2009[21]	Parallel group, two verum arms (Nat mur, ars alb C30) vs. Placebo	Diligent and qualitative collection of symptoms; transformation into numerical score	Significantly more remedy-typical symptoms in both groups compared with placebo

Patients received Homeopathic medicine or placebo and recorded the symptoms.
Raters decide whether symptoms are typical for a remedy delivered or not. The design is triple-blind and placebo-controlled.
Result: While previous attempts were inconclusive, this new model allowed to separate placebo symptoms from verum symptoms. Results were statistically significant.
Conclusion: HPTs can be used to separate out true specific symptoms from placebo symptoms.

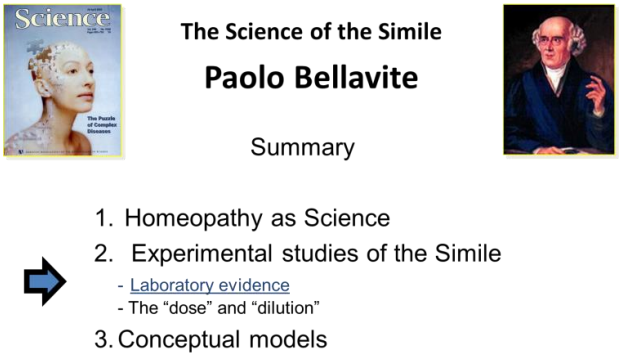
8. Scientific proving

Homeopathic pathogenetic trials (HPT-provings) are fundamental to homeopathy but most of the data from available provings have been not statistically evaluated. So, it is not clear how specific the reported symptoms are and how they differ from those reported by people taking placebo. This is a review of the efforts done bay a German research group to proof the HPT with a statistician evaluation.



9. HOMEOPATHY IS ALSO «SCIENCE»

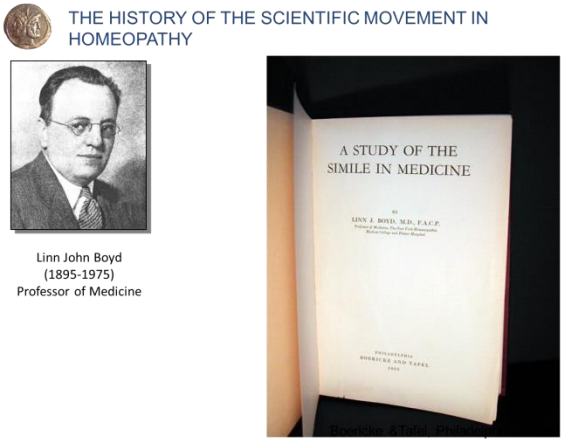
That homeopathy is a science and can be tackled with scientific tools is demonstrated by the simple fact that the scientific literature on the world's leading scientific publication database has grown about four times over the last 20 years of the present century.



10 The Science of the Simile (SOMMARIO)

Here we survey the similarity principle (or the "Simile") with the aim of examining its historical background and its scientific consistency.

The cornerstone of homeopathy - that the whole clinical picture of the individual patient be taken into consideration - is not in dispute, but basic research also allows the Simile to be investigated in laboratory animals, cells, tissues, and even at the molecular level.



11. THE HISTORY OF THE SCIENTIFIC MOVEMENT IN HOMEOPATHY

Linn John Boyd was a homeopathic doctor with a scientific vocation, he is little known among homeopaths and even less in the world of official medicine. I discovered by chance in 1995 at a congress in North America that he had written a book entirely dedicated to the history of the scientific movement in homeopathy.
Homeopathic doctor, Graduated at the University of Michigan. He served as a doctor in the American Navy. Then for twenty-five years he was professor of internal medicine and professor of pharmacology at the N. York Homeopathic Medical College and Flower Hospital.
His book “A study of the simile in medicine” is an excellent tool for a historical and scientific analysis of the theoretical bases and medical applications of the principle of similarity. It was published in the United States in 1936, but its contents are still relevant because they deal with the development of the "similia similibus curantur" problem - both in ancient medicine and in its applications by homeopathy - in a documented, rational and critical as few have managed to do.

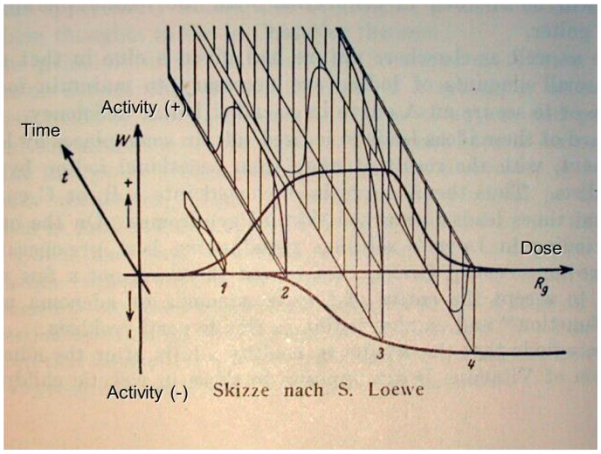
EFFECTS OF SUBSTANCES ON THE ISOLATED AND PERFUSED RAT INTESTINE (L.J. BOYD , 1936)

D=depression, S= stimulation

	Low dose	High dose		Low dose	High dose
Abies canadensis	D	D	*Arum canadensis*	S	D
Acetic acid	S	D	*Arum drac.*	D	S
Actaea spicata	S	D	*Arum mac.*	S	D
Allium sativa	D	D	*Arum tri.*	S	D
Allium cepa	D	S	*Asafoetida*	D	D
Alnus rubra	D	D	*Asparagus off.*	S	S
Aloes	S	D	*Avena sat.*	D	D
Althaea	S	D	*Bellis per.*	D	D
Amelopsis quin	S	D	*Benzoic acid*	S	S
Anacardium	?	D	*Berberis aqui.*	D	D
Angustura cor	S	D	*Calendula off.*	D	D
Apis mel	S	S	*Calotropis*	S	S
Apocynum can	S	D	*Caltha pal.*	S	D
Aristolochia mihl	D	S	*Cantharis*	D	D
Aristolochia serp	S	D	*Carduus mar.*	D	D

12 EFFECTS OF SUBSTANCES ON THE ISOLATED AND PERFUSED RAT INTESTINE (L.J. BOYD , 1936)
In his book Boyd reports hundreds of experiments that prove the homeopathic research efforts of the so-called scientific movement developed in Germany and the United States during the nineteenth century
This is a representative part of an alphabetical list containing hundreds of substances that have been tested by Boyd. From these studies Boyd concluded that about 50% of tested compounds exhibit the phenomenon of inversion of effects on changing the dose (Arndt-Schulz effect). Yet in this first example, we see the simile as heuristic principle for a scientist: Boyd aim was to test the principle of “similars” in a laboratory model and verified in a careful experimentation its applications and possibly its mechanisms. So, the homeopathic principle was a stimulus for scientific research.

EARLY ATTEMPTS TO "EXPLAIN" HOMEOPATHY: The Simile According to Loewe (1925)



From “A study of the simile in medicine” by L.J. Boyd, Boericke and Tafel, 1936

13. EARLY ATTEMPTS TO "EXPLAIN" HOMEOPATHY: The Simile According to Loewe (1925)
Loewe has attempted to formulate a diagram, illustrated in the figure, which basically deals with the question of doses.
He thus presents and discusses the scheme:
"We must ask ourselves the basic question of the transition of a stimulating effect into an inhibiting effect by looking at the total surface of the graphs representing the ACTIVITY during the TIME.

Trying to follow the effect gradually as the stimulus strength increases, we see that in the area below the activation threshold (on the left) there is no response kinetics: the activity remains zero over time (path 1). By slightly increasing the stimulation (number 2), just above the threshold, there is a small functional response, with a positive course, which lasts until the stimulus is exhausted and the activity returns to the basal level.

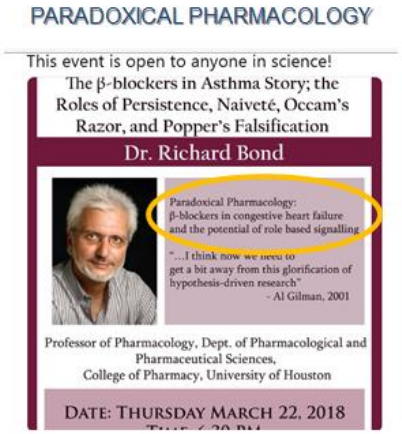
If we consider the other end of the dose-response curve (path 4), we see that with highest doses, there is a pure and monophasic inhibition effect.

Among these two limits of pure stimulation (2) and pure inhibition (4) there are behaviours described by biphasic or multi-phasic kinetics.

It is probable that with a moderate stimulus there is an evident stimulation curve followed by a small and transitory inhibitory effect (path 3), while with a greater stimulus (maximum activation level) there is a good stimulation, followed by a very depression more evident (track 4). With increasing doses, there will then be a progressive accentuation of the depression phase and a disappearance of the stimulation phase, up to the curve described by the curve of path 4 already considered.

These phenomena were described by physiologists in the early decades of the XX century and interested the homeopathic scientists, but were almost totally ignored by the conventional medicine, linked to the idea that the effect was proportional to the dose.

It is only recently that pharmacologists begun to consider these «anomalous» phenomena and started to speak about a «paradoxical pharmacology»



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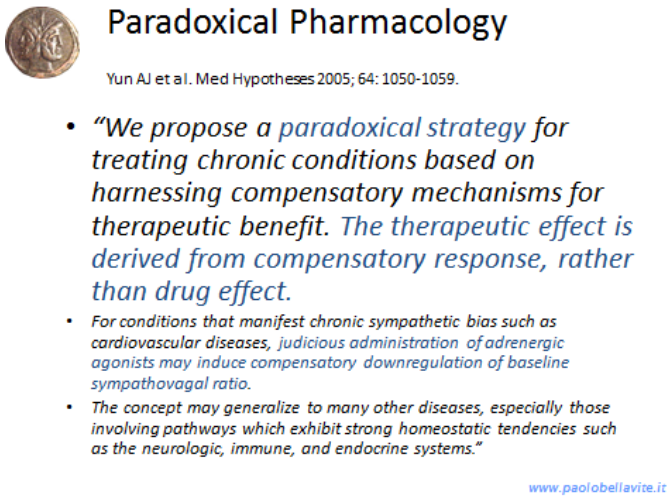
14 PARADOXICAL PHARMACOLOGY

The inverse effects described are in agreement with the most modern developments in pharmacology, called paradoxical pharmacology, as seen in this announcement of a recent lecture by Professor Bond at university of Houston (2018)



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15. PARADOXICAL PHARMACOLOGY

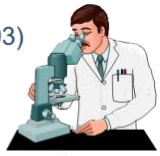
This is how this concept is described in a review by doctor Yun

"We propose a paradoxical strategy for treating chronic conditions based on harnessing compensatory mechanisms for therapeutic benefit. The therapeutic effect is derived from compensatory response, rather than drug effect.

For conditions that manifest chronic sympathetic bias such as cardiovascular diseases, judicious administration of adrenergic agonists may induce compensatory downregulation of baseline sympathovagal ratio.

The concept may generalize to many other diseases, especially those involving pathways which exhibit strong homeostatic tendencies such as the neurologic, immune, and endocrine systems."

OUR FIRST «IDEA» of the «SIMILE» (1992- 93)



CELL BIOCHEMISTRY AND FUNCTION VOL. 11: 231–239 (1993)

Dual Effects of Formylpeptides on the Adhesion of Endotoxin-Primed Human Neutrophils

P. BELLAVITE, S. CHIRUMBOLO, G. LIPPI, G. ANDRIOLI, L. BONAZZI AND I. FERRO†

Istituto di Chimica e Microscopia Clinica, University of Verona, and †Servizio Immunotrasfusionale, Ospedale Policlinico, Verona, Italy

Neutrophils, treated with sequential additions of bacterial products such as endotoxin (*E. Coli* lipopolysaccharide, LPS) and the chemotactic peptide *N*-formyl-methionyl-leucyl-phenylalanine (fMLP), undergo to metabolic activation and express membrane-anchoring proteins that promote adhesion to serum-coated culture wells. By investigating the dose–response relationships of these phenomena, we have found that: (a) resting neutrophils do not produce a significant amount of superoxide (O_2^-) and show only minimal adhesion to serum-coated plastic surfaces; (b) fully activatory doses ($> 5 \times 10^{-8}$M) of fMLP induce the release of O_2^- and a significant increase of the cell adhesion; (c) pretreatment of the cells for 1 h with LPS augments cell adhesion to serum-coated culture wells in the absence of further stimulation and primes the neutrophils to enhanced fMLP-dependent O_2^- release; (d) addition of low, substimulatory doses of fMLP (from 10^{-10}M to 5×10^{-9}M) inhibits and reverses the adhesion of LPS-treated cells, (e) high fMLP doses ($> 10^{-7}$M) are additive to LPS in promoting adhesion. Phorbol-myristate acetate ($> 10^{-9}$M) increased adhesion in both normal and LPS-treated neutrophils, but low doses of this stimulant did not inhibit adhesion. Low doses (10^{-9}M) of fMLP increased intracellular cyclic AMP in both normal and LPS-treated neutrophils, suggesting that stimulus-induced rises in cAMP may be the negative signal responsible for down-modulation of adhesion. Low (5×10^{-9}M) and high (5×10^{-7}M) fMLP doses induced the same increase of expression of CD11/CD18 integrins, indicating that the inhibition of adhesion caused by low doses is not due to quantitative down-regulation of integrins. These findings may provide an *in vitro* model of the complex biological events involved in the regulation of neutrophil adhesion.

16.OUR FIRST IDEA

I like to remember here how the idea of the like was born in me, this is also part of the history of medicine, by now!
It was in fact published as far back as 1993 and it was in fact of this that I spoke at the congress of Capri.
In short, I was very familiar with the functions of neutrophil leukocytes and in my dose-response experiments with a bacterial product I noticed that different and even opposing effects were obtained according to the doses and according to the preliminary treatment to which the cells were subjected.

OUR FIRST «IDEA» of the «SIMILE»
(1992- 93)

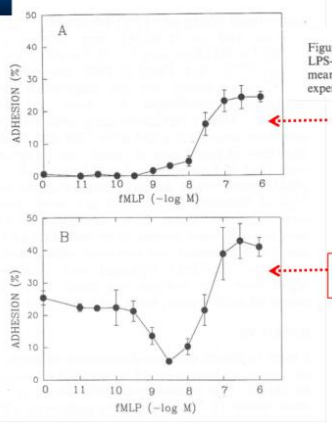


Figure 2. Effect of different doses of fMLP on the adhesion of LPS-treated (B) and normal (A) neutrophils. The values are the mean ± S.D. of triplicate determinations from a representative experiment of the eight performed.

NORMAL HUMAN NEUTROPHILS

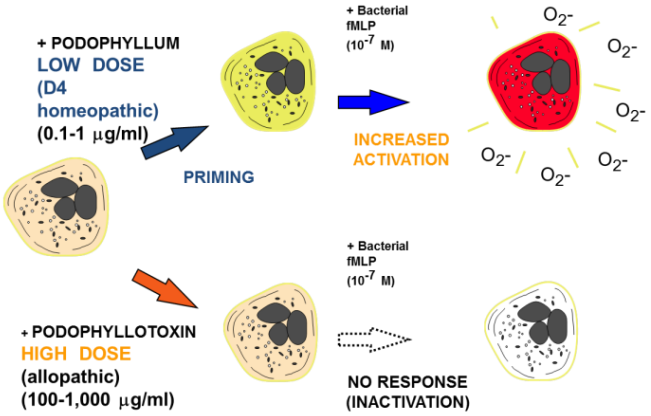
ENDOTOXIN-TREATED HUMAN NEUTROPHILS

17 OUR FIRST «IDEA» of the «SIMILE» (1992- 93)- figure

By observing the response curves to a bacterial product called fmlp, we see that high doses have a clearly stimulating effect, while in cells pre-treated with endotoxin low doses have an inverse, inhibitory effect.
We have also discovered the mechanism of this phenomenon, attributing it to the effect of "gating", that is to say of inhibition exercised by low doses on the bacterial endotoxin, through the production of a cyclic amp.
These results have been the subject of various publications and reported here for personal satisfaction.
Note: the inverse effect (inhibition of cell activity by low doses of a stimulant) is not manifested in cells treated with endotoxin, but only in sensitized cells or in cells from an inflammatory exudate.
This peculiar type of cell response at low doses probably has an important function in the mechanism of chemotaxis, that is the movement that the cells perform from distant areas to those closer to the inflammatory focus, where they go to meet and kill bacteria.

DUAL EFFECTS OF PODOPHYLLUM ON HUMAN NEUTROPHILS

(Data from Chrumbolo and Bellavite, *Brit. Hom. J. 86: 16-26, 1997*)



18 DUAL EFFECTS OF PODOPHYLLUM ON HUMAN NEUTROPHILS

We then reported several studies with homeopathic compounds, either in vitro or in vivo on laboratory animals. Here I can only do some small hints

A microtubule toxin (from Podophyllum) inhibits neutrophils when used at allopatic doses while it stimulates when used at homeopathic doses (typical hormetic effect)

Low potencies of a homeopathic drug extract (podophyllum) have specific stimulating effects on the activation of neutrophil metabolism. High dose of the toxin are strongly inhibiting the same function.

Also purified podophyllotoxin caused a stimulatory (priming effect) on the oxidative metabolism of human neutrophils, the same effect at doses of 0.1-10 μg/ml, while doses higher than 100 μg/ml of podophyllotoxin inhibited the respiratory burst, so that pure toxin showed a typical bi-phasic dose-response curve.

Homeopathy (2014) 103, 22–43

http://dx.doi.org/10.1016/j.homp.2013.08.002, available online at http://www.sciencedirect.com

2013-14

REVIEW

High-dilution effects revisited. 2. Pharmacodynamic mechanisms

Paolo Bellavite[1,*], Marta Marzotto[1], Debora Olioso[1], Elisabetta Moratti[1] and Anita Conforti[2]

Table 2 Examples of inverse effects in laboratory systems

System	*Agent*	*First effect*	*Inverse effect*
Yeast[163]	Heavy metals	Block growth	Low doses increase growth
Leukocytes[164]	Cytostatic agents	Cytotoxicity	Low doses stimulate growth and phagocytosis
Fibroblasts[165–167]	Arsenite	Cell toxicity	Low doses protect from toxicity or stimulate DNA synthesis
	Cadmium		
Neurons[168,169]	Naloxone	Antagonizes morphine	Low doses enhance the effect of morphine
Epithelial cells	Oxidants	Short-term/high doses decrease viability	Long-term/low doses increase viability
Tumor cells[170]			
Platelets[148,171]	Diclofenac	High doses stimulate adhesion	Low doses inhibit adhesion
Leukocytes[146,172]	Bacterial peptides	Stimulate adherence	Low doses inhibit adherence
Leukocytes[173]	Podophyllotoxin	Cell toxicity	Low doses enhance oxidative metabolism
Wheat germ[174–176]	Arsenite	Cell toxicity	HDs protect from toxicity
Lymphocytes[177,178]	Cadmium	Cell toxicity	HDs protect from cadmium toxicity
Neurons[179,180]	Glutamate, cycloheximide	Neurotoxicity	Extremely low doses and HDs protect from neurotoxicity
Basophils[14]	Histamine	Inflammation	HDs inhibit basophil activation
Basophils[181]	Quercetin	Inhibit cell activation	Low doses enhance formyl-peptide-induced activation

19 REVIEW

Here I present a table from a review published by Homeopathy, showing a number of publications where inverse effects in laboratory models have been published. Without entering in details, I leave you the reference, the paper can be read in the Journal or even in my indicated website.

The scientific medical literature reports many examples of reverse effects and macrophages lend themselves particularly to this flexibility of responses

The same signals used (e.g.: special cytokines, or endotoxins) can cause different effects, trigger different responses, also opposed in some cases, depending on the state of the cell at the time it is treated. These differences concern the level of receptors but also the complex networks of gene expression, which are very flexible and "learn" from experience.

Homeopathy (2014) 103, 22–43
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http://dx.doi.org/10.1016/j.homp.2013.08.002, available online at http://www.sciencedirect.com

REVIEW

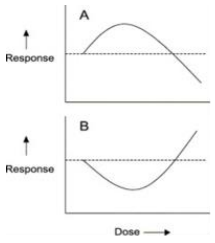
Table 3 Examples of inverse effects in animal models

System	Agent	First effect	Inverse effect
Tadpoles (frogs)[20,21,182,183]	Thyroxine	Stimulates metamorphosis	HDs inhibit metamorphosis
Rat blood[184–186]	Acetylsalicylic acid	Inhibit platelet aggregation and haemostasis	Very low doses have thrombogenic activity
Dog heart[187]	Ischemia	Causes infarction	Ischemic preconditioning protects from infarction
Mice kidney[188]	Free radicals	Toxicity	Pre-treatment with low doses protect from toxicity
Mouse prostate[189]	Estrogens	Inhibit growth	Low doses promote growth
Mouse and rat immune system[190,191]	Protein antigens	Induce allergy autoimmune disease	Oral administration protects and cures autoimmunity
Mice[192]	Morphine	Antinociceptive effects	Extremely low doses enhance pain sensitivity
Rat arthritis[193]	Naloxone	Hyperalgesia	Low doses have antinociceptive effects
Mice[194,195]	Naloxone	Antagonizes morphine	Analgesic effects in ULDs
Rat, guinea pig[196–201]	Histamine and/or bee venom	Inflammation, oedema	Low doses and HDs reduce inflammation
Rat liver[202,203]	Carbon tetrachloride	Toxicity	Low doses protect from liver toxicity
Rat immune system[204–206]	Mycobacteria in adjuvant	Induce arthritis when injected intra-paw	Intraperitoneal low doses cure arthritis
Mice, guinea pig, rats[207–211]	Arsenic	Liver toxicity, genotoxicity	Protection by ULDs of arsenic and increase of arsenic elimination
Rat[212,213]	Carcinogens (acetaminofluorene, phenobarbital)	Induce cancer	Low doses protect from cancer
Rat[214]	*Bacillus antracis*	Severe inflammation and death	Low doses of bacillus extract protect from toxicity
Mice[215]	*Gelsemium sempervirens*	Causes severe weakness, dizziness, convulsions	HDs are anxiolytic and increase exploration movement

20 Review Animal studies

This table from the same review paper reports a series of published studies on animal models.

As can be seen, the inverse effects occur from normal to highly diluted doses, as in the case of thyroxine on frog pups, or on aspirin on platelet aggregation and haemostasis systems, or in immunological models such as those in which it is demonstrated how allergy-causing substances can cure allergy or autoimmunity in people with these diseases. In the lower row we remember the Gelsemium sempervirens, an agent that in toxic doses causes weakness and convulsions, while in homeopathic doses it has an anxiolytic-like effect and promotes animal movement and exploratory abilities.



A few points on «hormesis»

- **The phenomenon of hormesis in indisputable: In classic pharmacology and toxicology hundreds of substances are known to cause an inhibition at high concentrations and stimulation at low concentrations (or vice versa).**
- **Hormesis is a special example of the similia principle at the biological and physiopathological level, and is important for the therapeutic use of low doses of toxic substances, also in homeopathy**
- **BUT it does not represent "the" only explanation of the homeopathic similia principle, which mainly concerns the difference of drug effects between healthy and ill subjects.**

21 A few points on «hormesis»

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«Involuntary» homeopathy (Isotherapy)

Immunological mechanisms of sublingual immunotherapy
Allam JP1, Novak N. Curr Opin Allergy Clin Immunol. 2014 Dec;14(6):564-9.

http://stamfordallergy.com/Sublingual-Immunotherapy.php

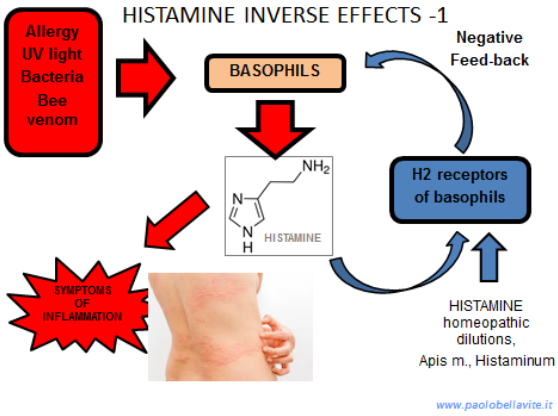
"Local intraoral allergen (e.g. APIS mellifera) application to sublingual mucosa has been proven to be safe and effective. To date, sublingual immunotherapy is widely accepted by most allergists, especially in Europe as an alternative to subcutaneous immunotherapy. "

- The same substance that makes allergic a healthy (and susceptible) subject, may cure a person with allergy

→*Simila similibus curentur!! (very low doses, "isotherapy")*

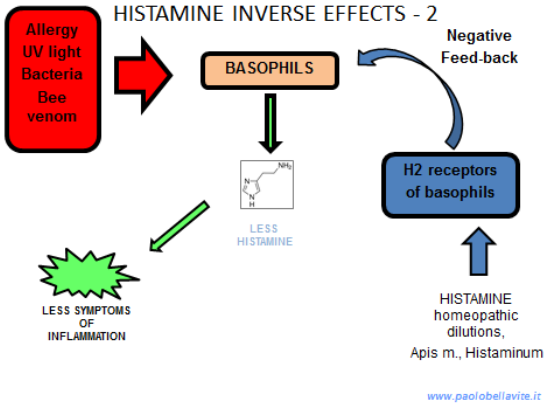
22 «Involuntary» homeopathy (Isotherapy)

A typical pattern of reversal of effects found in the immunological literature is that of oral specific immunotherapy
Allergen immunotherapy (e.g. *APIS mellifera*) has been proven to be a clinically safe and effective strategy to reorient inappropriate immune responses in allergic patients.
Administration of allergens via the oral mucosal route using sublingual immunotherapy has gained prominence as an effective allergen specific immunotherapy, alternative to subcutaneous injections. To date, sublingual immunotherapy is widely accepted by most allergists.
This phenomenon is due to the presence of regulatory cells (that is lymphocytes that suppress the abnormal immunological responses). These regulatory cells are activated in allergic subject by the oral application of extremely low doses of the substance to which the patient is too sensitive.
The same substance that makes allergic a healthy (and susceptible) subject, may cure a person with allergy
Of course, this may be seen as a clear example of Similia similibus curantur!! (very low doses, "isotherapy").



23 HISTAMINE INVERSE EFFECTS-1

Another typical example of inverse effects of which we have a clear explanation is that of histamine on basophils. Histamine is an organic nitrogenous compound involved in local immune responses, as well as regulating physiological function in the gut and acting as a neurotransmitter for the brain, spinal cord, and uterus. Histamine is involved in the inflammatory response and has a central role as a mediator of itching. The interesting fact is that the same substance binds to H2 receptors of basophilic cells and also of mastocytes, leading to the inhibition of the release of histamine.



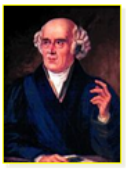
24 HISTAMINE INVERSE EFFECTS-2

The interesting thing is that studies in various laboratories have shown that also HISTAMINE homeopathic dilutions, Apis m., and Histaminum are able to inhibit the activation of human basophils.
This is a natural feed-back is useful to hinder an excess of inflammation, that may be dangerous and painful.
In this case, we have the evidence that the homeopathically diluted substance works on the same pathway as the natural feed back that is operated by higher doses on the same cell type.

The Science of the Simile

Paolo Bellavite

Summary



1. Homeopathy as Science
2. Experimental studies of the Simile
   - Laboratory evidence
   - The "dose" and "dilution"
3. Conceptual models

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25. SUMMARY Doses
The principle of similarity was applied since the beginning both with normal pharmacological doses and also with extremely low doses and high dilutions
This is a big problem having relation with physics and chemistry, but here I speak only of a minimum part of the issue, limiting myself to present a few examples of laboratory evidence on the «DOSES» or «DILUTIONS»

HOW SMALL SHOULD BE THE DOSE?

"How small, in other words, must be the dose of each individual medicine, homeopathically selected for a case of disease, to effect the best cure?"

"Is, as may easily be conceived, not the work of theoretical speculation. (...) Pure experiment, careful observation of the sensitiveness of each patient, and accurate experience can alone determine this in each individual case"

C.F.S. Hahnemann Organon, par. 278

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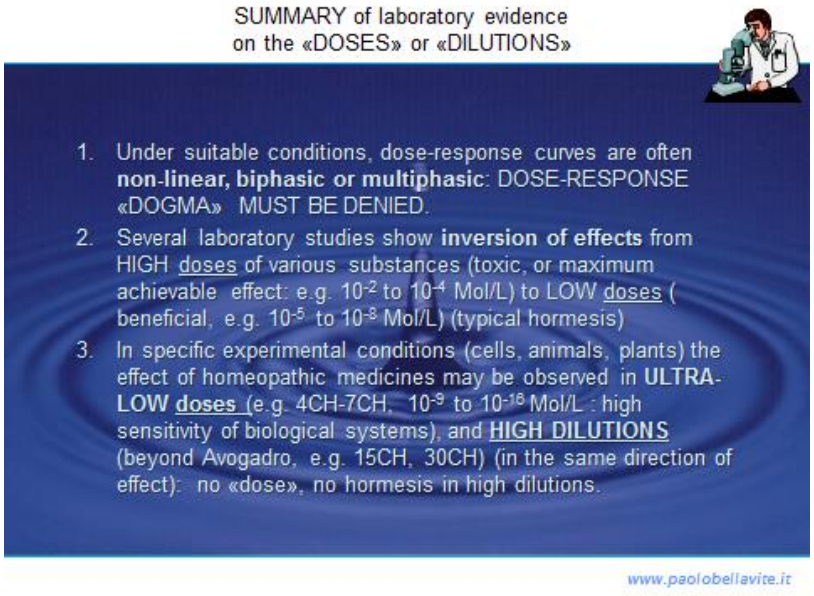
26. HOW SMALL SHOULD BE THE DOSE?
Starting from our master, we read that "How small, in other words, must be the dose of each individual medicine, homeopathically selected for a case of disease, to effect the best cure?"
"Is, as may easily be conceived, not the work of theoretical speculation. (...) Pure experiment, careful observation of the sensitiveness of each patient, and accurate experience can alone determine this in each individual case"

SO, in homeopathy THE "DOSE" is not a "dogma" and we should adopt a genuine experimental approach

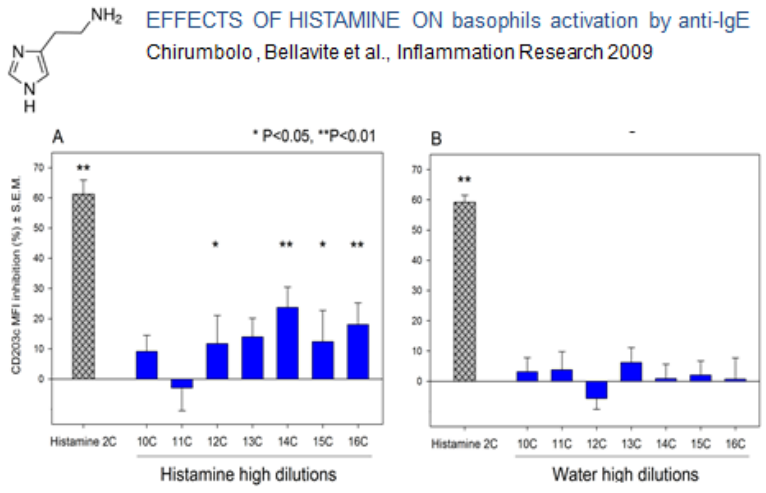


27. SUMMARY on doses and dilutions

Some facts have been experimentally proved:

1. U Under suitable conditions, dose-response curves are often **non-linear, biphasic or multiphasic**: DOSE-RESPONSE «DOGMA» MUST BE DENIED.
2. Several laboratory studies show **inversion of effects** from HIGH doses (toxic, or maximum achievable effect: e.g. 1 to 10 mMol/L) to LOW doses of drugs (beneficial, e.g. 0.0001 to 0.1 mMol/L) (typical hormesis)
3. In specific experimental conditions (cells, animals, plants) the effect of homeopathic medicines may be observed in **ULTRA-LOW doses** (e.g. 2CH-5CH, 0,0000000000001 to 0.00001 mMol/L : high sensitivity of biological systems), and **HIGH DILUTIONS** (beyond Avogadro, e.g. 15CH, 30CH, no «dose») (in the same direction of effect, no hormesis in high dilutions).

I will give three examples from our studies in laboratory



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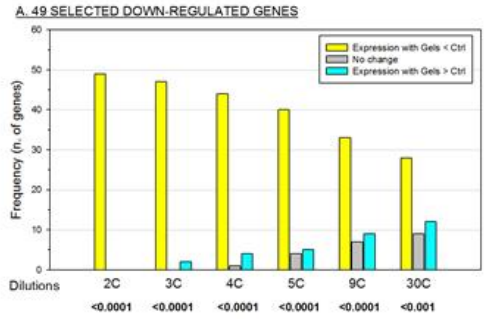
28EFFECTS OF HISTAMINE ON basophils activation

In the figure on the left we see that histamine inhibits the activation of human basophils at the 2c dilution and this is an effect obtained with maximum intensity. The 10c and 11c dilutions have no effect, while some higher dilutions, such as 15 and 16, again exert the inhibitory effect, albeit at a lower intensity. In the figure on the right we see that the dilutions of the solvent (pure water) never have any effect, while the control of histamine 2c again has the expected effect

Effects of Gelsemium and Control solutions on gene expression in neurocytes



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29 HUMAN SH-SY5Y NEUROCYTES GELSEMIUM SEMPERVIRENS.

This figure shows the effect of different dilutions of Gelsemium on neuronal cells in vitro. The first yellow bar indicates that in the cells treated with Gelsemium 2c we observed the decrease in expression of 49 genes, which suggests a possible explanation of the anxiolytic properties of the plant. On the right we see that a 3c dilution, that is 100 times higher, causes the inhibition of 47 genes, while 2 are upregulated, i.e. the Gelsemium has a stimulating effect.

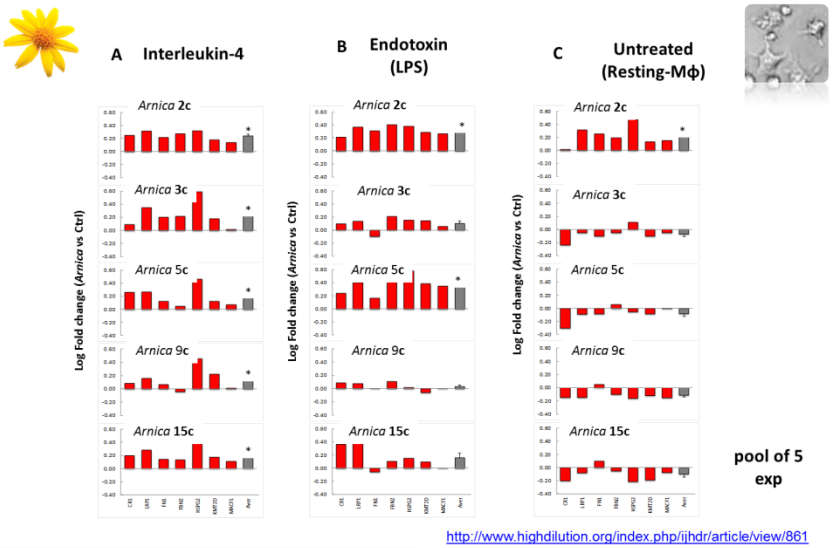
It should be noted that all the tests are done in comparison with a solvent solution, i.e. pure water. With pure water, there is no significant effect, neither stimulating nor inhibiting, meaning that the number of randomly increased or decreased or zero genes is similar, i.e. not otherwise distributed.

With the 5c we have 40 genes with down-regulation, 5 stimulated and 4 neutral. Note that passing from 2c to 5c we have diluted the Gelsemium a million times.

In the end we see that even with the 30c dilution there is a "significant imbalance" in favour of stimulating a greater number of genes.

This effect cannot be due to chance and therefore we can conclude that some specific activity remains even in high dilutions beyond the Avogadro constant.

Effect of *Arnica m.* on macrophages pre-treated with different agents



http://www.highdilution.org/index.php/ijhdr/article/view/861

30 Arnica montana

This work tested the effects of Arnica m. on human macrophages in vitro, with particular reference to gene expression. The cells were differentiated with Interleukin-4 inducing a "wound-healing" - like phenotype and then treated with various homeopathic dilutions of Arnica m. (2c, 3c, 5c, 9c and 15c) for 24 hours.

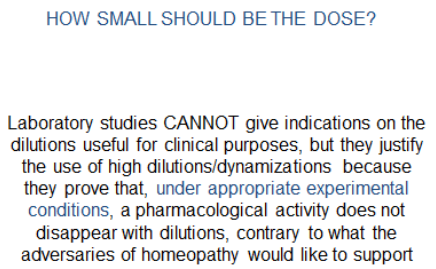
We obtained interesting results that were published by Plos ONE after careful evaluation of methods and results.

However, three years after the publication, unknown people complained against our work and eventually the paper was recently retracted by the same journal. This is certainly part of a concerted attack to homeopathy, we have the evidence of that.

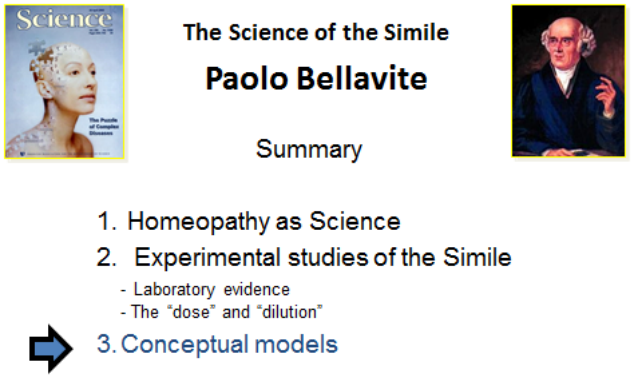
Then, we repeated the test with new methods and confirmed the main results.

We also published several confirming results in “International Journal of High Dilution Research” (see the figure)

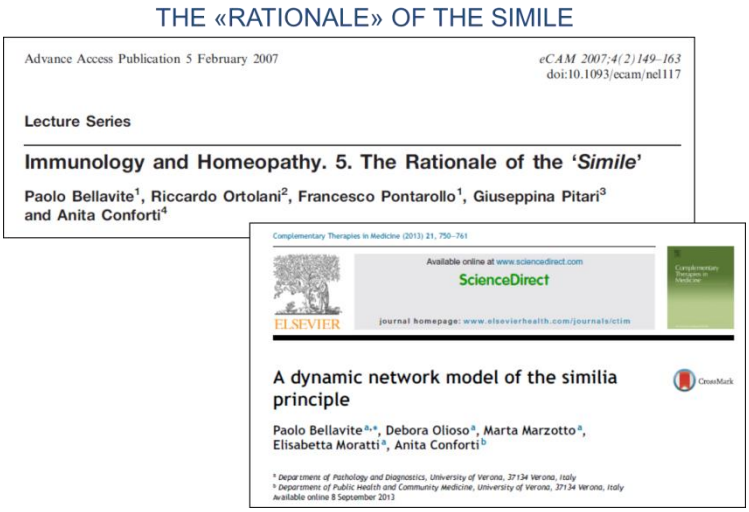
Note: The figure shown in the conference is not reported here since it is submitted for publication.



31 HOW SMALL SHOULD BE THE DOSE?
Experiments made in the laboratory CANNOT give indications on the dilutions useful for clinical purposes, but they can justify the use of high dilutions because they prove that, under appropriate experimental conditions, a pharmacological activity does not disappear with dilutions, contrary to what the adversaries of homeopathy would like to support.
There is no fixed rule for the choice of dilution (or homeopathic potency), but it must be chosen each time according to the sensitivity of the subject to be treated and according to similarity.

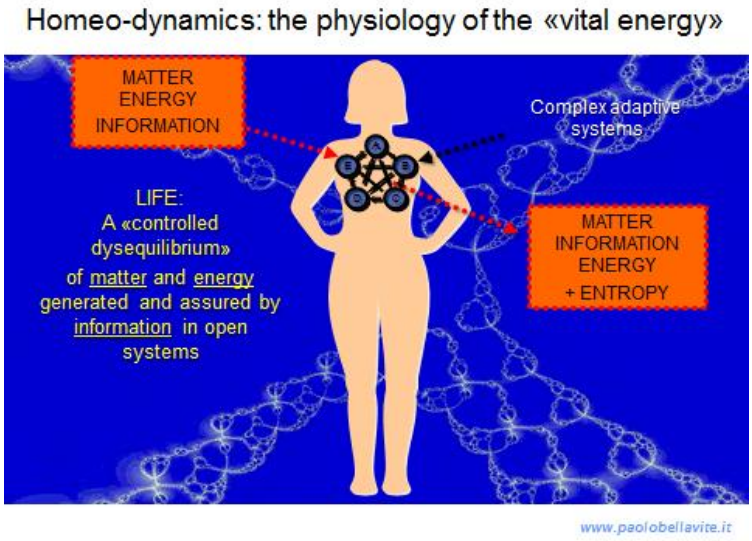


32 SOMMARIO: Conceptual models
In the third part I present some ideas about the possible explanations of the Simile, presenting the model that I consider the most interesting and fruitful

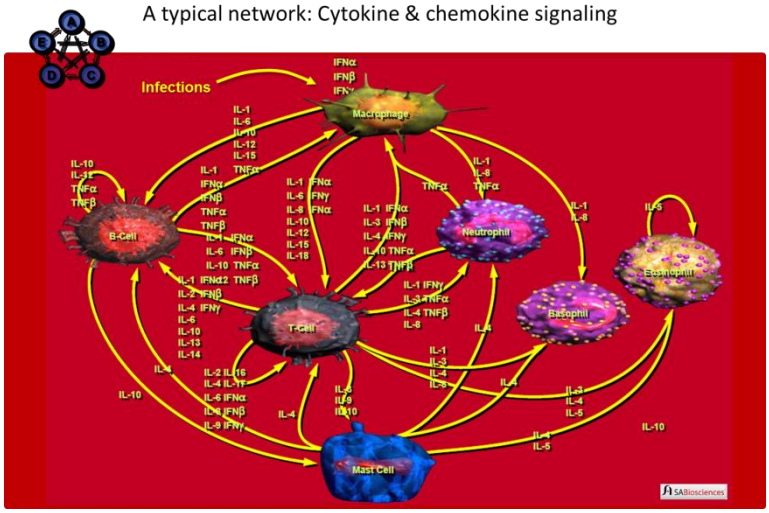


33 CITATIONS Although several models have been proposed to explain the similia principle, it can be best understood and appreciated in the framework of complexity science and dynamic systems theory.
We and others published several papers on this subject, one of which is here presented and is based on the theory of Boolean

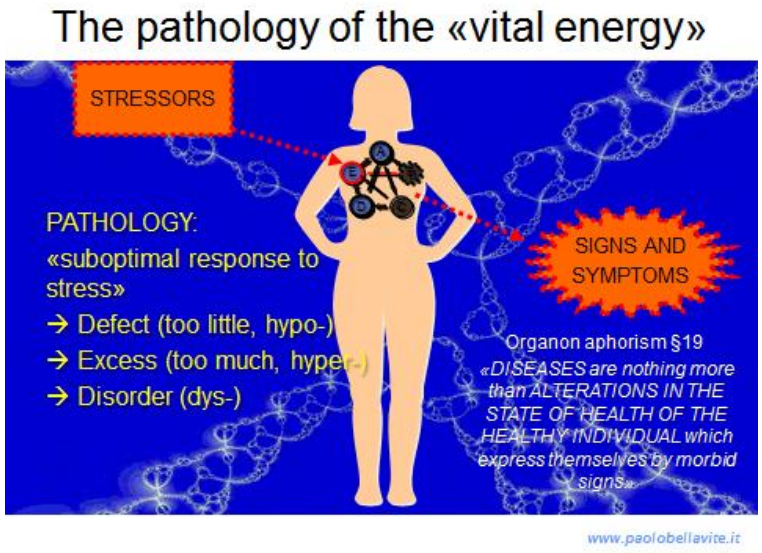
networks, that are very useful to show how self-organization and adaptation are relevant to rationalizing this traditional medical principle.
Today I present for the first time an update of this model.



34 HOMEO-DYNAMICS: THE PHYSIOLOGY OF THE «VITAL ENERGY»
Our work is aimed to build-up a model of the vital energy, of disease dynamics and of the possible action of homeopathy on them. This model is not a mathematical model technically speaking, it is a conceptual model, that is a qualitative sketch of how a process may work.
The concepts and the language are provided by dynamic system theory, by molecular biology and by general pathology.
The concept of *vital force* (or energy) indicates *a dynamic self-regulatory capability which all living creatures are undeniably endowed with* in order to give them a better chance of survival.
A useful concept helping in the description of vital energy is to consider its structure as a *"network"*. Networks are complex structures because the state and the changes of each element depend, directly or indirectly, on the state and the changes of all the other elements. Therefore, the network behaves as a *coherent* system, whose health state is governed and restored thanks to the well-connectedness of internal and external processes.
The healthy condition is represented as a scheme of five nodes where each node is linked with two other nodes by stimulating and inhibiting connections (arrows). Independently of the number of nodes and of connections of the net, here the two main properties of complex systems are represented: connectedness (or connectivity) of individual elements and dynamics, i.e. the possibility of change during time.



35 A typical network: Cytokine & chemokine signalling
Needless to say our scheme of five nodes and their connections is a symbol for every network that can be described, as in this case the network formed by immune cells connected through the messages of cytokines . There are networks in every biological system, from the metabolism of a single cell to the nervous system, even in society and global communications.



36 The pathology of the «vital energy»

When our vital energy is subjected to some stressor, we have the possibility of adaptation and resistance, but if the response is inefficient or sub-optimal, a disease can develop.

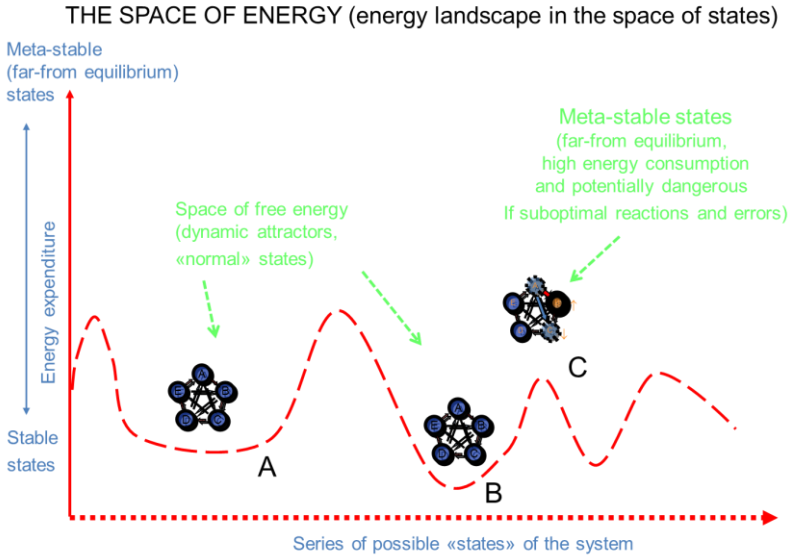
The basic mechanism of disease is the «suboptimal response to stress», that can have three aspects

-Defect (too little, hypo-), - Excess (too much, hyper-), - Disorder of connections

These changes in our body generate signs and symptoms, as stated by Hahnemann

«DISEASES are nothing more than ALTERATIONS IN THE STATE OF HEALTH OF THE HEALTHY INDIVIDUAL which express themselves by morbid signs»

SYMPTOMS ARE EMERGENT PROPERTIES OF THE GLOBAL, INDIVIDUAL, NETWORK



37 THE SPACE OF ENERGY (energy landscape in the space of states)

For this reason we have tried to rationalize and represent the life force (or life energy) in a graphical way according to the most modern concept of dynamic system theory.

The «space or states» is a useful representation of the possible situations of dynamic systems in the so called energy landscape.

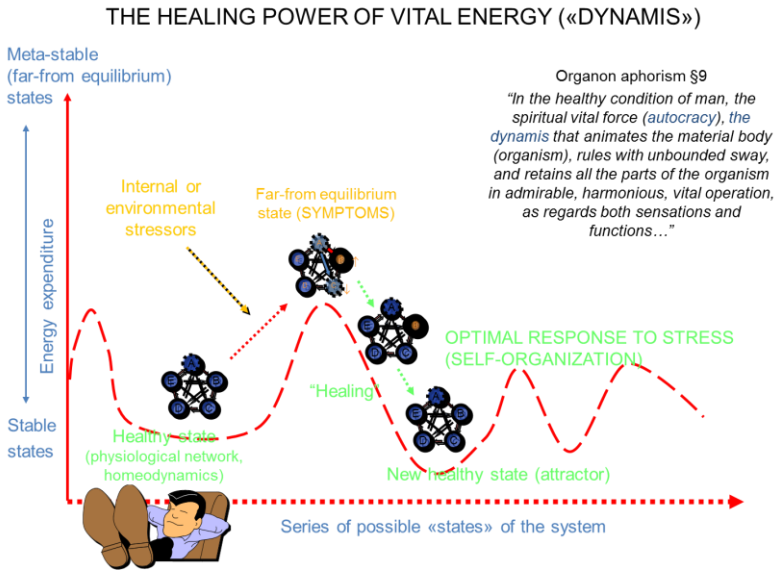
In the vertical axis the energy expenditure is reported, meaning that higher states are unstable and have the tendency to shift towards more stable states, where the energy expenditure is lower.

IN the horizontal axis the dynamic changes of the network are represented

The area is divided in various sub-spaces representing hills and valleys, where the different possible states or configurations of the system can be located.

One of the most interesting and unexpected properties of complex nonlinear networks is their tendency to occupy a limited number of stable states out of the theoretically huge numbers of states available to them. These spaces are called attractors and often have great stability because they are situated in a local minimum in the state-space of energy.

Networks in attractors A and B are considered to be the normal ones since they are positioned at a more stable level, with lower energy expenditure, and can thus be regarded as ‘‘physiological’’ ones. Network C is arbitrarily positioned further from equilibrium, at higher energy expenditure levels.



38 THE HEALING POWER OF VITAL ENERGY («DYNAMIS»)

Simulating the trajectories and attractors of the network system in the energy state-space provides a qualitative illustration of how targeted external perturbations can have pathological effects, leading to permanent, self-sustaining alterations.

We can envisage an ideal network in a resting state, at the bottom of the main attractor, this represents the healthy state

A possible internal or environmental stressor modifies some nodes of the network. The modifications spreads in most of the network, and this is shifted to meta-stable state, far from equilibrium.

This dynamic state is followed by further changes, that are the deterministic consequence of the <u>self-organizing capacity</u> of the dynamic network.

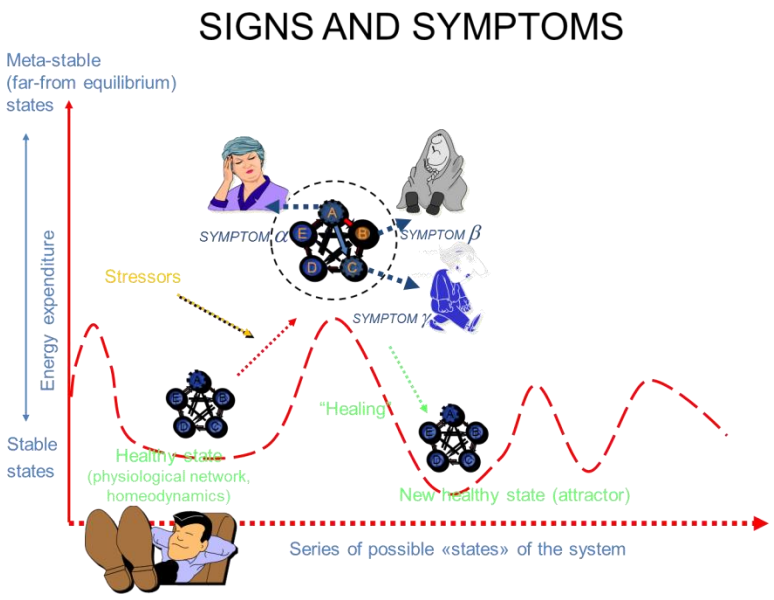
In fact, the reaction eventually terminates when the damage is repaired, the reactions is turned down, and the equilibrium is restored. I repeat, this is a spontaneous capacity of the vital energy, it is not the disease.

In healthy subjects, all the perturbations are followed by return to normality, except when a disease occurs (we will see this occurrence later). But the normality is the homeodynamic, the conservation of life and the inherent healing capacity.

This scheme tries to represent in a graphical form the «autocracy» and the «dynamis» that according to Hahnemann animates the material body (organism), rules with unbounded sway, and retains all the parts of the organism in admirable, harmonious, vital operation, as regards both sensations and functions

Autocracy can be translated in modern terms as "self organization"

Dynamis can be translated as "the dynamic changes of energy and organization of the system"



39 SIGNS AND SYMPTOMS

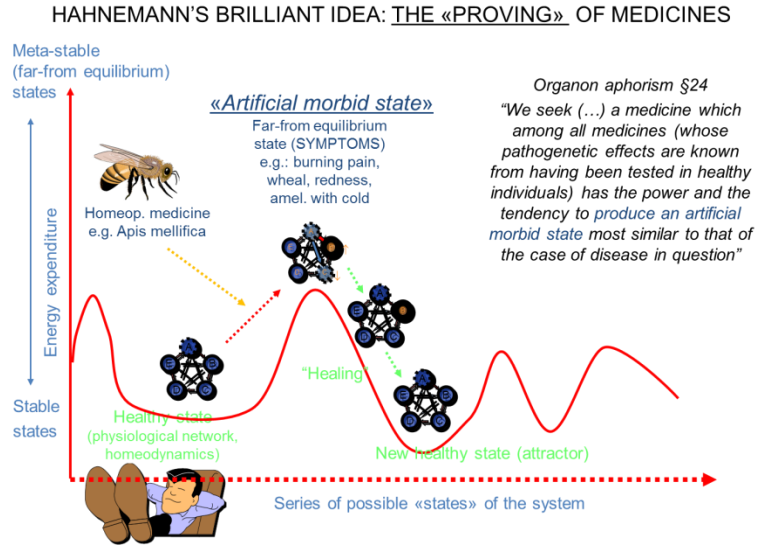
At this point, it is important to consider the symptoms as emergent properties of the global, individual, network.

Symptoms appear:

- As emergent properties of stressed physiological networks

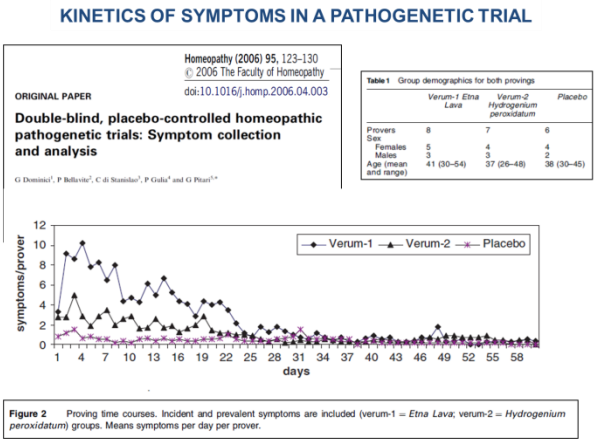
- During normal response to stress
- During natural diseases (strong in acute diseases, subtle in chronic ones)
- During the challenge of healthy persons with medicines (proving)

The external symptoms represent an unitary phenomenon, which is due to the unitary modifications of the internal homeodynamic network.
In other words, symptoms are not only the expression of “disease” dynamics, but also of the “way” by which the whole individual interact with stressors and disease-related modifications.
Needless to say, this is of paramount importance for the classic homeopathic method, which is essentially based on the careful observation and interpretation of symptomatology.



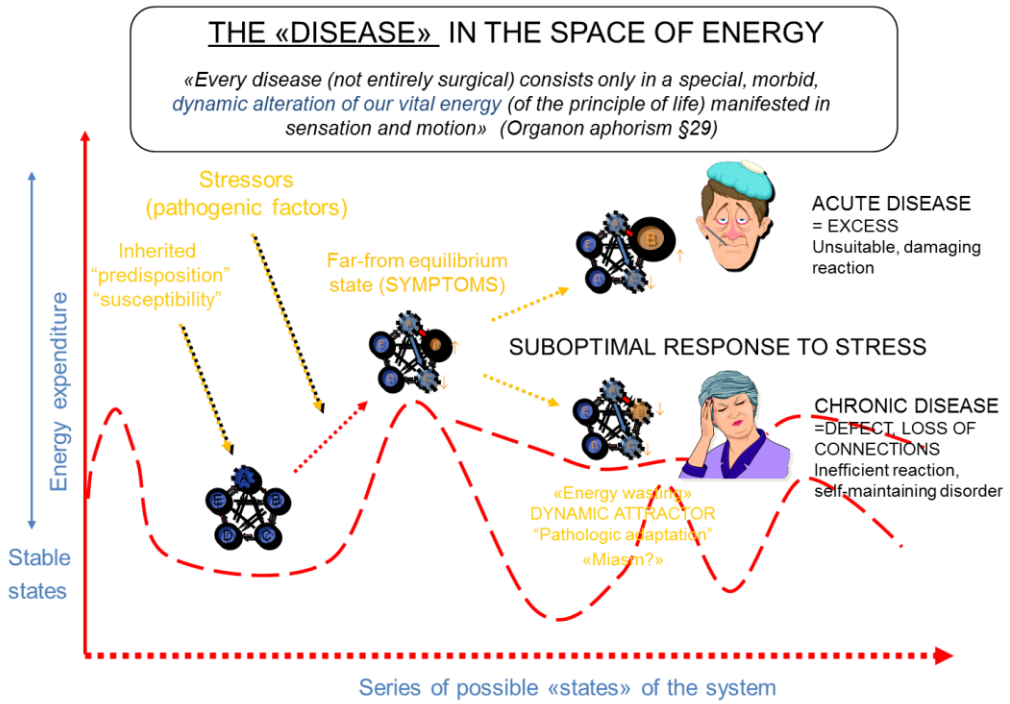
40 HAHNEMANN'S BRILLIANT IDEA: THE «PROVING» OF MEDICINES

The central pillar of the idea of the simile supports the test of medicines with adequate experiments. Each medicine, given to a healthy person, represents a small or large biological stress. As a result, the biological systems affected (here represented by the network in the energy space) are modified and pushed away from equilibrium, generating symptoms.
This situation is called "artificial disease" by Hahnemann.
We read (§24) : “We seek (…) a medicine which among all medicines (whose pathogenetic effects are known from having been tested in healthy individuals) has the power and the tendency to produce an artificial morbid state most similar to that of the case of disease in question”
However, we should not believe that this "artificial disease" corresponds to our conventional diseases (diabetes, heart attack, Alzheimer’s, cancer). The Hahnemannian so called “artificial morbid state” is a set of modifications of the vital energy, pushed away from the equilibrium, which manifest themselves with characteristic symptoms.
NOTE Thanks to the self-organization of complex systems this dynamic state has inherent capacity to return to healthy state (attractor) (provided the dose and time of expositions are not destroying the system).
In other words, in HEALTHY INDIVIDUALS, a «pathogenic medicine» produces some specific symptoms, but they SPONTANEOUSLY DISAPPEAR after some time, thanks to the self-organization of the targeted system(s) («HEALING»).



41 Kinetics of symptoms in a pathogenetic trial

This figure from a publication of dr. Dominici and others including myself show that the symptoms induced by proving a medicine decrease spontaneously in the time: The "Artificial disease" in a healthy person heals spontaneously thanks to the physiological homeodynamics (vital energy).



42 THE «DISEASE» IN THE SPACE OF ENERGY

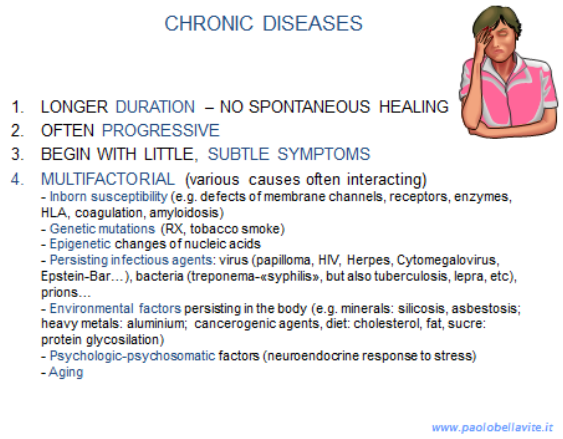
Then we have to illustrate the concept of disease in the space of energy.
As stated by Hahnemann, «Every disease (not entirely surgical) consists only in a special, morbid, dynamic alteration of our vital energy (of the principle of life) manifested in sensation and motion» (Organon aphorism §29)

We can envisage that sometimes the reactions are not proportionate to the damage and we have therefore some further damages caused not by the first environmental trigger, but by a problem of the reaction itself. We call this condition "acute disease"; the main cause of which is not a "bad" external or internal factor, but the disproportionate reaction, that may cause further damage. ACUTE DISEASE is here represented by EXCESS of reaction (e.g. in the node "B"), that means unsuitable, damaging reaction. A disproportionate reaction, compared to the needs of an optimal and coordinated reaction. In this figure, we have depicted also schematically a symptoms of acute diseases (that are essentially an excess of reaction, with many manifestations of active phenomena like inflammation, fever and pain).

In particular cases, especially when the acute disease hits a system that is already affected by serious inherited predispositions, by other chronic conditions or the use of toxic substances (alcohol, drugs), the local damage may be so serious to threaten the life of the subject.
Acute illness hurts but in theory it can heal spontaneously, at the price of pain and risks to life integrity if it is very serious.

On the other hand, the non-optimal response may turn into a CHRONIC disease. This occurs when the system altered by stress changes in such a way as to find an adaptation with the mechanism of the attractor. The re-organization of the stressed systems takes place in a minimum of energy that does not completely resolve the disorders of homeodynamics, that is, we cannot speak of healing. Some imbalances remain and energy consumption for adaptation remains high, creating further problems over time. This situation cannot heal spontaneously.

The distinction between acute and chronic diseases was done also by Hahnemann in paragraph 72 of the Organon. His view is perfectly compatible with this modern model derived from dynamic system theory with only one exception: at the end of paragraph 72 Hahnemann stated that chronic diseases "are caused by dynamic infection with a chronic miasm."



43 Chronic disease

Here we see a synthesis of the modern view of general pathology perspective

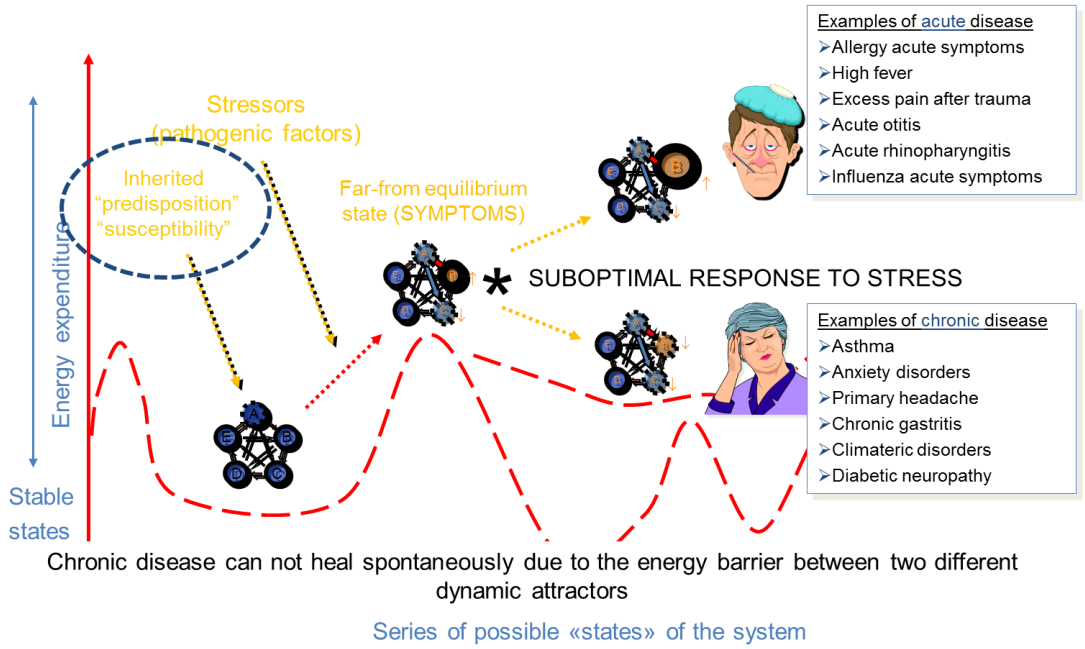
1. LONGER DURATION – NO SPONTANEOUS HEALING
2. OFTEN PROGRESSIVE
3. BEGIN WITH LITTLE, SUBTLE SYMPTOMS
4. MULTIFACTORIAL (various causes often interacting)
   - inborn susceptibility (e.g. defects of membrane channels, receptors, enzymes, HLA, coagulation, amyloidosis)
   - genetic mutations (RX, tobacco smoke)
   - persisting infectious agents: virus (papilloma-«sycosis», but also HIV, Herpes, Cytomegalovirus, Epstein-Bar…), bacteria (Treponema-«syphilis», but also tuberculosis, lepra, etc.), prions…
   - environmental factors persisting in the body (e.g. minerals: silicosis, asbestosis; heavy metals: aluminium; diet: cholesterol, fat, sugar: protein glycosylation)
   - psychologic-psychosomatic factors (neuroendocrine response to stress)

Note (for possible discussion): MIASMS From the perspective of a pathologist

In my opinion, Hahnemann was right when discovered the way to exploit the similia principle through pathogenetic sperimentation of medicines but **his theory of chronic diseases (where he tried to describe the "cause" of diseases in §78-80 of Organon) was wrong**, at least where he maintained that the "cause" of 90% of diseases is infectious (theory of psora).

In any case, even without the (outdated) theory of Psora, the "Simile" is scientifically correct as described in the «New principle» (Hufeland's Journal 1976) and first 70 aphorisms of the Organon. The "simile" as the method for finding individualized medicines capable of regulating the dynamics of healing remains theoretically correct and experimentally proved.
Hahnemann was a good pharmacologist but a "bad pathologist" and the reason is simple: at his time pharmacology could be developed through experimentation, while pathology (the study of the cause of diseases) was almost completely obscure due to the lack of methods of investigation of the true causes and mechanisms of diseases like bacteria, virus, chemical toxins, genetic variants, neurobiological factors, immunologic defects, and so on.
Even if the theory of Psora of Hahnemann as «the» cause of disease was wrong, the «miasmatic» approaches to classification of medicines, individualization and remedy prescription can be useful from a practical point of view. Sometimes even wrong theories can be used in the daily life, see for example the common "belief" that the Sun revolves around the Earth.

THE «DISEASE» IN THE SPACE OF ENERGY - EXAMPLES



44 THE «DISEASE» IN THE SPACE OF ENERGY – EXAMPLES

Examples of acute disease Allergy acute symptoms, High fever, Excess pain after trauma, Acute otitis Acute rhinopharyngitis, Influenza acute symptoms

Inflammatory acute diseases are clear examples of the double-edged sword represented by inflammatory mechanisms. One of the more challenging clinical decisions is, in fact, whether an inflammatory process is the expression of normal homeodynamic reactions or is truly "pathological" and this decision will determine whether the reaction should be pharmacologically regulated or left having its natural course. In most cases, this acute disease may not cause irreversible damages and eventually we observe spontaneous (or medically assisted) healing.

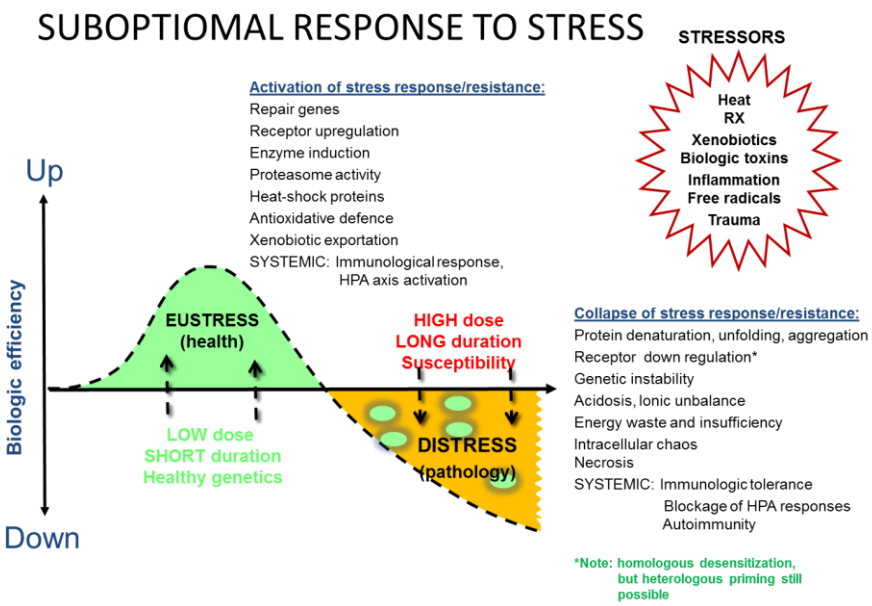
Examples of chronic disease Asthma Anxiety disorders Primary headache Chronic gastritis Climateric disorders Diabetic neuropathy

These conditions are here reported from an inquiry done with doctors of Verona medical school who have indicated the most frequently encountered disease in their daily practice. Moreover, I have here reported also diabetic neuropathy since in this disease we have shown positive outcomes in patients cured with homeopathy integrated with conventional medical care.

I repeat: Chronic disease can't heal spontaneously due to the energy barrier between two different dynamic attractors. This is the major challenge for pharmacology, of course

An important aspect related to this model is the fact that diseases do not affect everyone equally but there are more or less susceptible people. This is a well accepted fact in the contemporary pathology that Hahnemann had observed at the time and described in the Organon.

«The inimical forces, partly psychical, partly physical, to which our terrestrial existence is exposed, which are termed morbific noxious agents, do not possess the power of morbidly deranging the health of man unconditionally; but we are made ill by them only when our organism is sufficiently disposed and susceptible to the attack of the morbific cause that may be present, (…) hence they do not produce disease in every one nor at all times.» Organon aphorism §31



45 SUBOPTIMAL

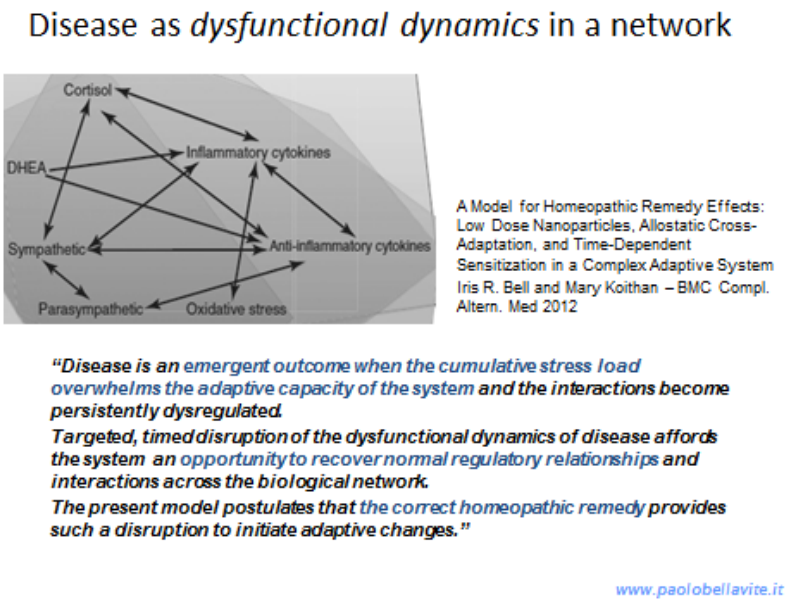
In this figure I return to the concept of "suboptimal stress response". It is well known that any living organism is capable of responding to stress with a series of defence and adaptation mechanisms, to such an extent that a little stress can be seen as useful. These biological mechanisms are for example

Repair genes, Receptor upregulation, Enzyme induction, Immunological response, Hypothalamus-Pituitary-adrenal axis activation, etc.

However, if the stress is too strong or too long or the person is particularly susceptible, physiological or biochemical response systems at the cellular level can collapse and a non-adaptive response follows, which we can call "distress".

We can observe Protein denaturation, unfolding, aggregation, Receptor down regulation, Acidosis, Ionic unbalance, etc.

In these conditions, the disease can't heal spontaneously, becomes chronic and even progressive



46 Nonlinear network in response to stress

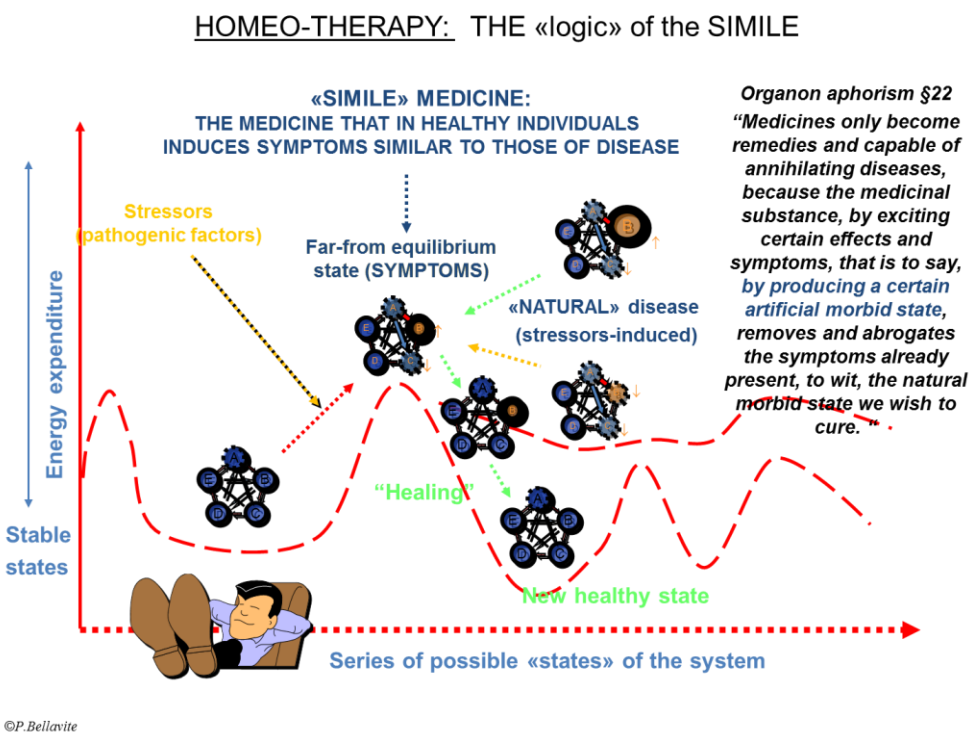
This schematic produced and published by the group of Iris Bell, professor at the University of Arizona, shows some of the physiological components involved in the organism's response to stress and the complex, nonlinear interrelationships as a network within which they regulate one another.

Pathways in the central nervous system, including amygdala, prefrontal cortex, and hippocampus, involved in stress responsivity and reward, learning and memory, somatosensory function, emotional function, and motor activity regulate and interact with all of the above components.

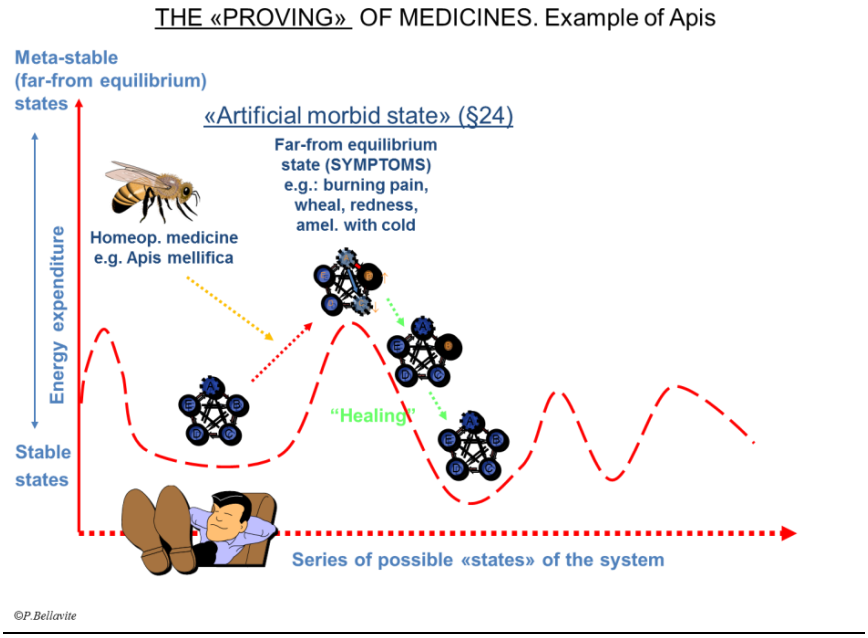
The same authors suggested that this point of view on the disease dynamics may open the way to the use of homeopathic remedies.

"Disease is an emergent outcome when the cumulative stress load overwhelms the adaptive capacity of the system and the interactions become persistently dysregulated.

Targeted, timed disruption of the dysfunctional dynamics of disease affords the system an opportunity to recover normal regulatory relationships and interactions across the biological network.
The present model postulates that the correct homeopathic remedy provides such a disruption to initiate adaptive changes."

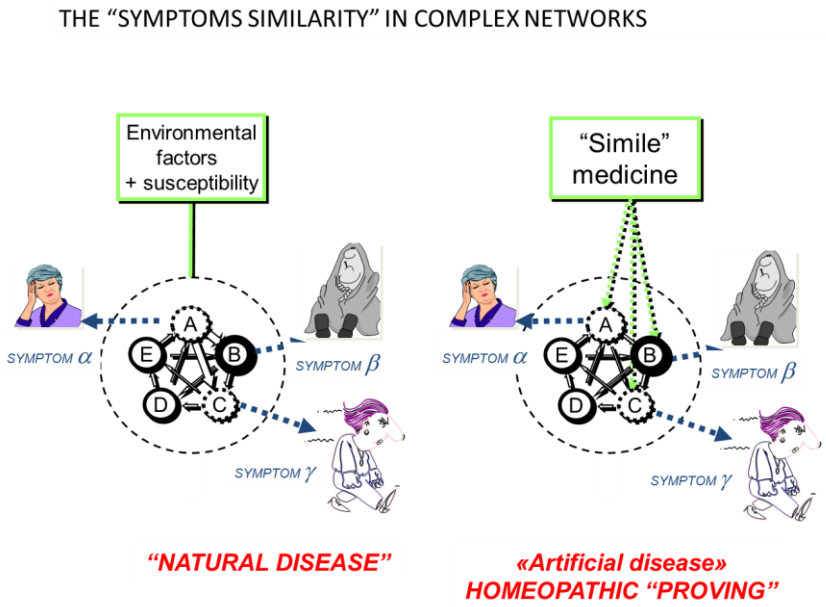


47. <u>HOMEO-THERAPY:</u> THE «logic» of the SIMILE
Coming back to our conceptual scheme, we eventually see the role of the simile medicine:
«SIMILE» MEDICINE is THE MEDICINE THAT IN HEALTHY INDIVIDUALS INDUCES SYMPTOMS SIMILAR TO THOSE OF DISEASE
In fact, Hahnemann states "***Organon aphorism §22***
"Medicines only become remedies and capable of annihilating diseases, because the medicinal substance, by exciting certain effects and symptoms, that is to say, by producing a certain <u>artificial morbid state</u>, removes and abrogates the symptoms already present, to wit, the natural morbid state we wish to cure. "

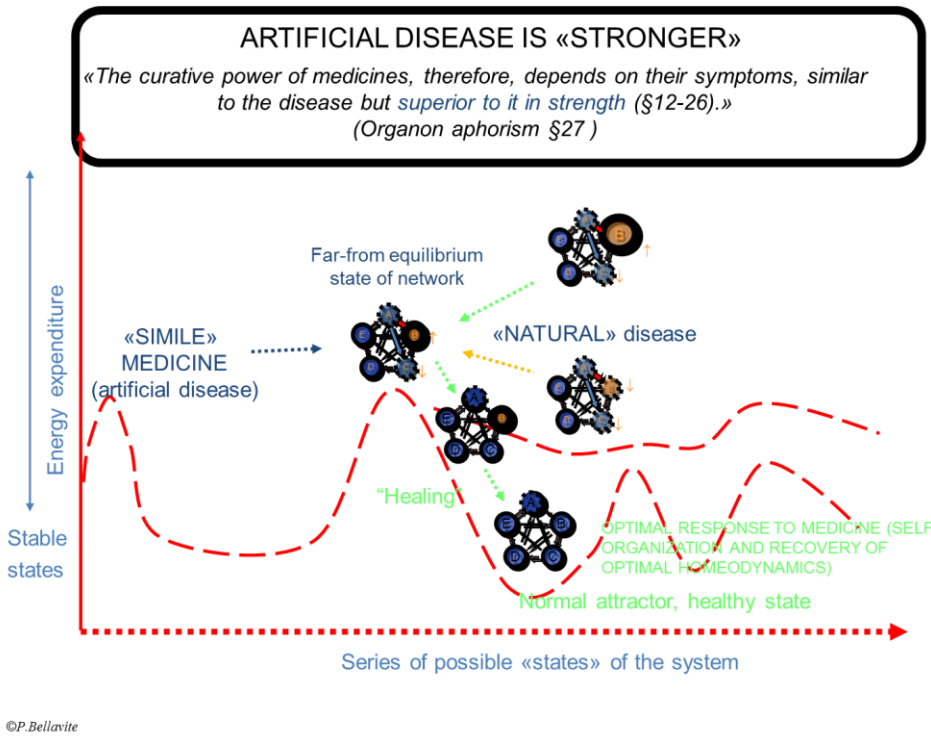


<u>48 THE «PROVING»</u> OF MEDICINES
The "artificial morbid state" is obtained by administering the medicine that has been knows through pathogenetic trials on healthy individuals.. In the Organon we read: ***"Therefore (…) we seek, for the totality of the symptoms of the case of disease, a medicine***

which among all medicines (whose pathogenetic effects are known from having been tested in healthy individuals) has the power and the tendency to produce an artificial morbid state most similar to that of the case of disease in question"
This is sentence very clear and plausible, if we accept that the power of medicines can be known through accurate testing of the symptoms that medicines are capable of causing in healthy people.



49 THE "SYMPTOMS SIMILARITY" IN COMPLEX NETWORKS
Here we see how the natural disease and the artificial disease can match in the described network.
This is the effect of a schematic natural disease on the network
This is the effect of the medicine
Matching is done, according to the classical theory, by careful comparing of symptoms, that are emergent properties of the network.
If the symptoms are similar, it means that also the "internal mechanisms" are similar, that is the medicine can touch the same targets that are modified by the disease.



50 ARTIFICIAL DISEASE IS «STRONGER»
Now we are in the position to understand what Hahnemann means when he states that the artificial disease produced by the medicine is stronger than natural disease.

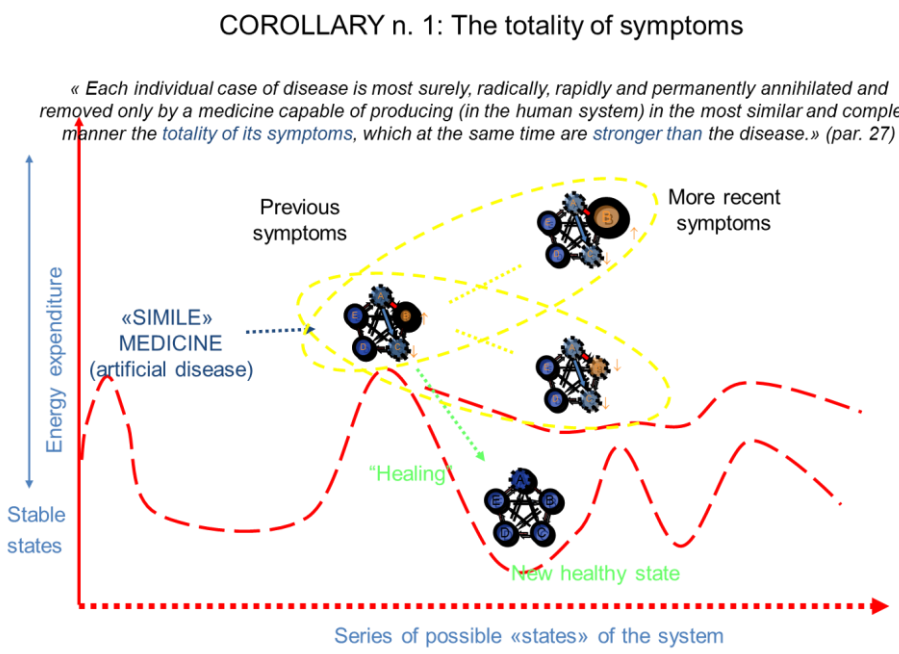
«The curative power of medicines, therefore, depends on their symptoms, similar to the disease but superior to it in strength (§12-26).»
In paragraph 30: "The human body appears to admit of being much more powerfully affected in its health by medicines (partly because we have the regulation of the dose in our own power) than by natural morbid stimuli—for natural diseases are cured and overcome by suitable medicines."

This view would seem totally paradoxical or even foul for the contemporary pharmacology, but we are now in the position to appreciate its profound meaning

Why the artificial disease is stronger?

It certainly does not mean that the disease is more "serious", or that it gives "more symptoms", indeed, from this point of view the artificial disease induced by medicine is much weaker.
The «strength» of the artificial disease lies in the fact that it is capable of healing on its own, it is an efficient, well-coordinated disease, aimed at healing, thanks to the systems of self-organization (autocracy) evaluated and inherent in the organism.
These systems had not been able to function optimally in the case of natural disease, and that is precisely why the natural disease manifested itself.
Now, the patient has lost the ability to coordinate an efficient response to the disease, because some sub-systems do not work (they are faulty for suboptimal response to stress) or lack adequate information to be able to provide a balanced response.
This information is provided by the homeopathic medicine.
But when the system affected by the natural disease "similar" to the artificial one is treated with a substance capable of inducing a state far from equilibrium as in the healthy, here is that the system takes up a conformation capable of responding with a series of changes well-oriented to the healing.
According to the theory of dynamic attractors, we can say that the sick system is "attracted" towards healthy behaviours, or at least closer to the ideal state of health.
The "strength" is given not by the "physical matter"of the medicine, but by the energy of the body, i.e. by the evoked normal attractor, which is the normal outcome of the system moving down from a far-from-equilibrium state.

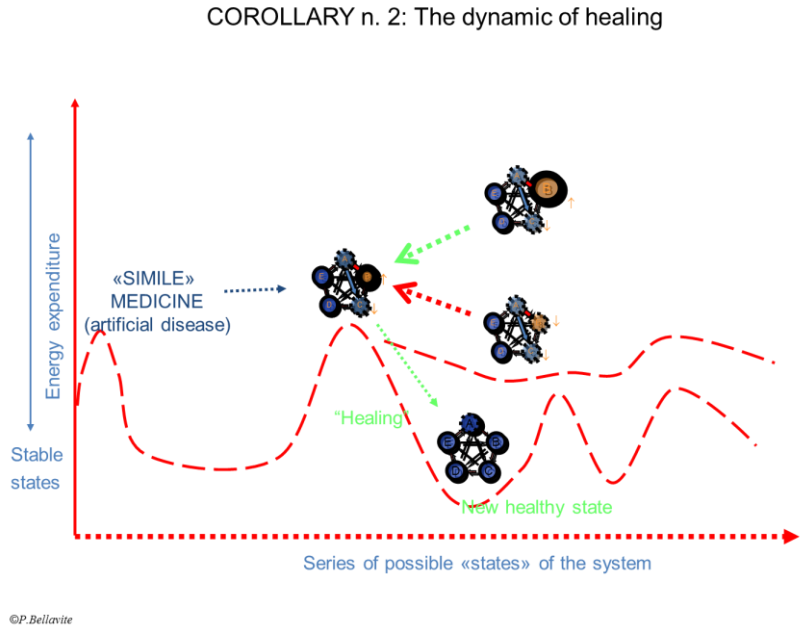
This theory has some important corollaries



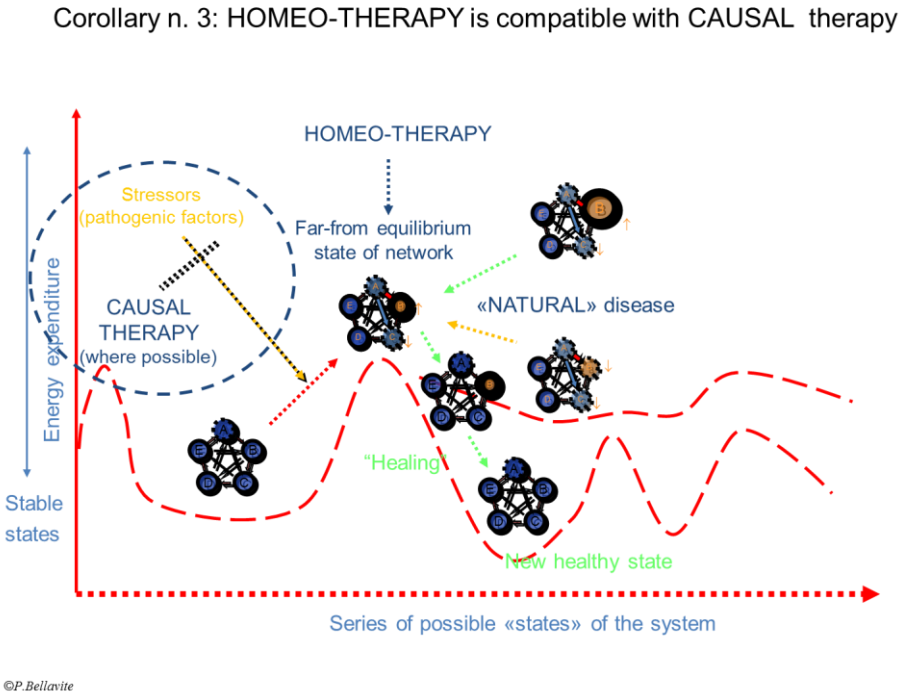
51. COROLLARY n. 1: The totality of symptoms

The «totality» is not related only to the present symptoms of the body in the present state of disease!
The DYNAMIC of disease includes various stages with change of networks (different sequential patterns) and then of symptoms during time
Some symptoms are the expression of normal, useful, changes of network and individual sensitivity, other symptoms are the expression of suboptimal responses to stress («true disease»)
Normally, in the dynamic changes of networks, the previous («old») symptoms are the expression of healthy responses, i.e. the normal responses of healthy people.
Therefore, it is advisable to select the medicine that produces the whole dynamic of symptoms, including the symptoms that were present during previous stages of the disease.

Note: During the course of life, it is quite possible that acute diseases develop “over” chronic diseases, or chronic diseases represent a susceptibility factor for acute episodes. The network is inside an anomalous attractor, that is energetically unfavourable, and from this position it is easier to be put further from equilibrium by stressors.
For this reason, even when the disease is acute, in order to facilitate the healing it is necessary to consider the whole picture of the patient, including “chronic” or constitutional symptoms.



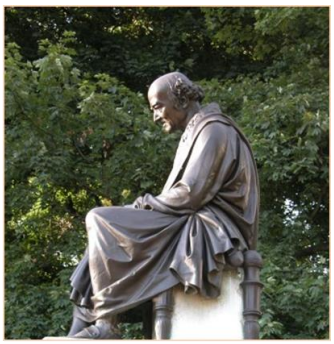
52 COROLLARY n. 2: The dynamic of healing
According to our model, the pattern of networks would change (and the symptoms would disappear) from the most recent disease back in time to previous ones (a reversion of the disease process)
In ACUTE DISEASES the global intensity of symptoms would decrease during treatment
In CHRONIC DISEASES the global intensity of symptoms would increase in the first stages of the treatment
The network has to overcome the energy barrier due to the pathologic attractor



53. Corollary n. 3: HOMEO-THERAPY is compatible with CAUSAL therapy
Causal therapy is the elimination of the cause, that is the hygiene, the healthy living style and nutrition, and the use of antimicrobials when really needed and effective. Of course, antibiotics may have their own problems, that are well known (or should be) also by conventional medicine, but these problems (adverse effects and resistance) do not establish a theoretical

incompatibility with homeopathic approach. Homeopathic approach is much more contrasting with a therapy done with the sole aim to supress the symptoms.

SYNTHESIS OF THE "SIMILE"



1. When a healthy organism is perturbed by every physical, chemical, or biological stressor, it produces characteristic signs and symptoms; when caused by a drug, this is regarded as an "artificial disease" that expresses the specific targets of the medicine in the body.
2. The method of drug provings to describe the characteristic patterns of signs and symptoms, caused in healthy subjects by a number of mineral, vegetable, and animal compounds, has been scientifically validated.
3. Natural diseases have many different causes but are essentially due to a suboptimal response to stress of the regulating networks (excess, defect, disorder)
4. A substance which is capable of evoking certain symptoms in healthy subjects, when administered to subjects showing similar symptoms (due to natural diseases) may evoke a change of the homeodynamic networks (that are already far from equilibrium), shifting the perturbed system towards a dynamic attractor more proximal to the healthy state
5. Medicines should be used at the minimum working dose for two reasons: a) to attenuate the pathogenic power if the substance is toxic, b) to interact only with specifically modified and sensitized targets or receptors
6. Serial dilutions followed by succussion ("dynamization") may allow the permanence of pharmacological power in the medicine matter even at high dilutions (e.g. beyond 20x or 10c). Cellular gene expression seems particularly sensitive to this kind of pharmacologic treatment.
7. Even if the traditional theory of "miasms" should be updated, the homeopathic "simile" is proved in a number of experiments and is justified by dynamic systems theories. Homeopathy is a frontier of medical science.

54. SYNTHESIS OF THE "SIMILE"

In this figure we summarize the main points of the scientific explanation and proof of the Hahnemann's "Simile"

55. THANKS FOR YOUR ATTENTION and… GOOD JOB EVERYONE!