



HOMEOPATHY, A SYSTEMIC MEDICINE POSITION PAPER

PRESENTATION:

This paper, written by Dr. Lucia Gasparini with contributions from Giuseppe Fagone, Roberto Gava, Francesco Marino, Raffaella Pomposelli, Antonella Ronchi, and Andrea Signorini, offers an overview of the current state of homeopathic medicine and highlights its position in the field of science.

Critiques against homeopathy by people who have no real knowledge about it, haven't accurately read up on it and haven't experienced it firsthand often boil down to the same old, vague "placebo effect", neglecting the significant results obtained in the neonatal, veterinary or food farming areas. Other critics tend to see it as an outdated treatment system which has allegedly remained stuck in the era in which Hahnemann systematized it and is completely out of touch with the current state of science. What's more, homeopathy often gets confused with phytotherapy, with Chinese traditional medicine or, in the worst instances, with "unspecified esoteric practices":

Instead, the domain of science may provide what it takes to perform an accurate critical evaluation of homeopathic medicine, both from a methodological and from a clinical point of view. In fact, by carrying out an in-depth epistemological analysis and a multi-disciplinary biomedical update, we can prove that current scientific knowledge is in line with the theoretical foundation of homeopathy.



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Introduction

Homeopathic Experimental Research and Homeopathic Clinical Practice

Science is, by definition, any knowledge that includes, in any way or degree, some guarantee of its own validity, and it is characterized by its research tools and its subject matter.

Scientific research is always aimed at solving problems, and scientific knowledge grows and operates based on continuous dissent and on the search for the winning theory.

The scientific method, through the path opened by hypotheses and counterarguments and therefore by the factual falsifiability of theories, is the foundation on which new knowledge lies.

The progress of research in every field, particularly in biomedicine, has shown that the boundaries of the subject matters of individual disciplines tend to get blurry. In the domain of medicine, we are increasingly required to draw connections among the various fields of knowledge, that is, to embrace a *multidisciplinary and systemic* vision.

Experimental medicine investigates disease as its subject matter, and aims at finding laws connecting each phenomenon to the conditions in which it manifests itself.

In homeopathy, *pure experimental research investigates the artificial disease caused by diluted and dynamized substances in subjects that appear to be in good health*, and this, as it happens the academic domain with toxicology, may be accepted as its subject matter. The goal of experimental research is to observe and record all symptoms and sensations that the substance is able to cause in the subjects of the study.

Besides, experimental work has enabled researchers to perform observations which, despite being classified as empirical data, cannot be rejected *a priori* on the grounds of the supposed ineffectiveness of the dose or of the fact that the way the medicine works is unknown. Such work is carried out on small groups of healthy subjects who, on a voluntary and not-for-profit basis, accept to take part in a clinical study, which is conducted based on standards that are equivalent to phase 1¹ of conventional experimental research and is subject to well-defined regulations, both at national and European level, established by the relevant Committees, according to considerations related to privacy and safety.

Observed subjects must be healthy, because this makes it more likely that researchers may obtain biologically pure results, that is, results which may be attributed to the given substance excluding any influence by other medicines and/or pre-existing pathological conditions.

The homeopathic experimental research procedure, which requires to observe the artificial disease as a dynamic entity, follows the experimental research method and is based on an initial observation, an initial hypothesis, a number of control observations and a final hypothesis.

¹ <https://www.aifa.gov.it/sperimentazione-clinica-dei-farmaci>: Clinical Experimental Research – Phase 1: The phase 1 study marks the start of the experimental research on the active substance on human subjects, aimed at enabling an initial assessment on the safety and tolerability of the medicine. Such studies are conducted in a few selected research centers on a limited number of healthy volunteers with proven absence of any disease and predisposition to it. The main goal is to assess the potential unwanted effects which may be expected based on the results of previous experimental studies on animals, and to evaluate the way the medicine acts on and spreads within the organism. Volunteers are divided into multiple groups, each of which is given a different dose of the medicine, so as to assess the possible unwanted effects of the substance in relation to the given amount. If its object is a serious disease, the study may be directly conducted on patients suffering from it, for whom the medicine has been designed. If the medicine proves to have an acceptable degree of toxicity in relation to its expected benefit (the so-called benefit/risk profile), it may go on to the following phases of experimental research.

The artificial disease may be evaluated by:

- 1) detecting the emergence of symptoms, described in both quantitative and qualitative terms — which allows to confirm the possibility that diluted and dynamized substances are active and the possibility to assess results from a statistical standpoint;
- 2) comparing the symptoms caused by each substance with the ones caused by other substances — which allows to confirm the specificity and the unique medical profile of diluted and dynamized substances and to predict which symptoms will emerge in the subjects of the study;
- 3) giving both groups a placebo — which allows to take the theory that diluted and dynamized substances are able to cause an artificial disease characterized by specific symptoms, make it falsifiable and possibly disprove it.

This procedure isn't subject to other conceptual hindrances, except for the fact that observations must be performed objectively, in environments which ensure the validity and adequacy of factual records, and that data must be assessable in statistic terms.

The clinical methodology investigates the patient as its subject matter, and aims at detecting morbid patterns through the observation and evaluation of each patient's individual story, getting to know each patient and identifying the most suitable treatment.

The homeopathic clinical methodology also investigates the patient as its subject matter and aims at getting to know each patient, differentiating them and identifying the remedy that is most similar to the symptom profile of such patient.

The homeopathic diagnostic clinical procedure includes several steps:

- an accurate anamnesis (biopathographic history, symptoms and general, local and mental sensations, with a description of the relevant modalities, objective examination, results of lab and medical equipment tests)
- a diagnostic hypothesis (based not only on the selection of symptoms that indicate one or more diseases, but also on the most peculiar, unusual, strange ones, considering all symptoms on the whole),
- a differential analysis of the symptoms that represent the homeopathic diagnostic-therapeutic hypothesis and the symptom profile of one or

more homeopathic remedies that caused similar symptom profiles in experimental settings,

- the final homeopathic diagnosis,
- the subsequent individualized treatment, which consists in prescribing a homeopathic remedy, chosen on the grounds of its high similarity to the patient, and administering it in an individualized dose and frequency.

The homeopathic procedure tends to consider the constitution and character of each patient and to individualize their personality, that is, the dynamic organization of the physiological, morphologic, intellectual, affective-impulsive and volitional aspects of their personality. The symptoms thus recorded are interpreted as results of processes of interaction among genetic factors — which make a unique individual of the patient and make them predisposed to certain imbalances and certain diseases — and environmental factors, which for their intensity and their features prevail on the individual distinctive adaptation abilities and the natural defense mechanisms.

The homeopathic explanation of the clinical case is grounded on the general laws of physiology and pathology, but especially on the current scientific knowledge achieved both by systemic medicine in general and specifically by several biomedical sciences, such as immunology, neurosciences, psychoendocrinology and psycho-neuroendocrinology, chronobiology, ethology, genetics, biophysics and synergetics.

In particular, the existence of a neuroendocrine modulation of immune responses and of a modulation of neuroendocrine responses by the immune system shows a two-way influence pattern that has led to consider the immune system and the neuroendocrine system as a morphological and functional whole, which is able to identify cognitive and non-cognitive stimuli and to trigger integrated responses within the organism.

Homeopathy is in line with the most recent scientific discoveries. It combines the individuality of the genome with the individuality of the chronema (the individuality of biological functions in time). The defensive abilities of the immune system are also individual, in that they depend on subjective and environmental factors of a physical-chemical and emotional nature. Individuality is also a feature of the two-way influence between the neuroendocrine and immune system, which has explained in the field of psycho-neuroimmunology (PNEI) the ability of the organism to maintain homeostasis despite receiving both cognitive (sensory and emotional) and non-cognitive (viruses, bacteria, various antigens and toxic substances)

stimuli. The complexity of the human brain, studied by neurosciences, is also individual, since it stems both from genetic/epigenetic and from environmental influencing factors, which affect the neuronal activity. Emotions are also individual, with their adaptive and physiological meaning and their ability to represent the true motivating factors and to play the most influential role in bringing about specific diseases.

For 200 years, through its search for the entirety of the most characteristic symptoms, homeopathy has enabled to accurately grasp the genetic, immune, endocrine, chronobiological, emotional, biophysical-receptive and behavioral situation of every individual, without being subject to the limitations associated with generic syndrome complexes.

Symptoms Depend on the Contingent Profile of the Signal Paths of Each Patient

From a biological standpoint, symptoms and diseases, with their pathognomonic and individual symptoms, are directly correlated to changes in cell activity, which are coordinated by “signal paths” that connect biochemical cell events located in distant cellular compartments, among themselves and with what is outside (from receptors to enzymes to genes and the other way around). By modulating such signals, medicines cause variations in the physiological functions which give rise to healing actions and/or adverse reactions. Every individual has a unique contingent enzyme, receptor and gene profile, which manifests itself through specific symptoms and causes an individual response to the action of the medicine.

In its accurate anamnesis, homeopathic clinical practice doesn't just record the pathognomonic symptoms of disease, but includes the study of the entirety of individual symptoms (both mental, general and local, that is, pertaining to the various body compartments and systems). Such procedure is the only tool that allows to detect for each subject, within the complex web of biological interactions that take place in their organism, an ostensibly coherent dysfunction which may suggest the use of a medicine (remedy) with an action that is similar, on the whole, to the profile found in the patient.

Features of systemic thinking

The first feature of systemic thinking is *the shift from individual parts to the whole.*

Living systems are integrated wholes with properties that may not be traced back to those of the parts they are made up of.

The systemic properties originate from the organizing relationships between the parts, that is, from a configuration of ordered relationships which is typical of that specific class of organisms or systems. These properties are destroyed when a system is split into standalone elements.

Another feature of systemic thinking is *the ability to shift attention among the various levels of a system*.

Living systems contain systems located within other systems; at each level, observed phenomena display properties that do not exist at lower levels.

In general, the properties of the parts aren't intrinsic, but may already be understood within a wider context.

Another concept of systemic thinking is the web of relationships. *Objects themselves are webs of relationships located within wider webs.*

Concept of “Web”

The organizing pattern of a living system is always a web-shaped one. According to Humberto Maturana and Francisco Varela, the key feature of a living web is its continuous self-production. The two authors introduced the concept of *autopoiesis* (self-production) and speculated that autopoiesis were a general organizing pattern, shared by all living systems regardless from the nature of their components. In this web pattern, each component is tasked with taking part in the production or transformation of other components of the web. Consequently, the web is produced by its components and produces them in turn.

Since every component of an autopoietic web is produced by other components, the whole system is organizationally closed, albeit being open to the matter and energy flow.

Living systems are organizationally closed systems, since order and behavior within them aren't imposed by the environment, but are established by the system itself. All of this implies that living systems are autonomous and able to self-organize, that is, to establish mutual control relationships between their components. However, they aren't truly closed; instead, they are open to their environment in that they exchange matter, energy and information. Interaction with the environment enables to maintain the various vital functions, but doesn't determine the organization of the system.

Maturana and Varela, describing the pattern of life as an autopoietic web, especially emphasize the organizational closure of the pattern. Ilya Prigogine,

describing the structure of a living system, stresses the openness of such structure to the energy and matter flow. A *living system is therefore organizationally closed, but structurally open*.

Dissipative Structures

Living systems are, as described previously, dissipative structures. Their internal stability depends from the flow of energy and information that passes through them and gets partially dissipated.

The key to understand dissipative structures lies in the fact that they maintain themselves in a far-from-balance state, which is the state of life.

Near balance, we are within the domain of classic thermodynamics. This domain hosts a number of flow processes, named fluctuations, but their intensity is weak. The system evolves towards a stable state which features the least possible generation of entropy or disorder. Within this domain, flow processes may be described by linear equations.

Far from balance, fluctuations are more intense, the generation of entropy increases and the system no longer tends towards balance. Flow processes within the system are interconnected through multiple feedback loops, and the corresponding mathematical equations are non-linear.

Non-linear equations usually have multiple solutions, and in the non-linear domain, the initial conditions no longer get “forgotten”. In other words, the behaviour of the system, at the moment when it takes one direction out of the many possible ones, depends from its previous history, and the dissipative structures that are far from balance no longer follow any universal law, but only the laws of that specific system. The choice the system makes depends from its history and from various external conditions, and it cannot be predicted. At every fork in the road, there's an element of randomness that cannot be avoided.

According to I. Prigogine, dissipative structures are islands of order in a sea of disorder. They maintain their order, or even increase it, at the expense of a higher disorder of their environment.

The concepts of autopoiesis and allostasis

According to Fritjof Capra, autopoiesis implies the ability of organisms to self-produce, repair and regenerate themselves, facing continuous structural changes while maintaining their own organizational patterns. The coexistence of stability and change is the subject to continuous fluctuation. The more

flexibility exists, the higher will be the ability to adapt to any changes in the environment. This concept is paired with the one of *allostasis*.

Allostasis is the ability to maintain stability through change, that is, the adaptive response of the organism aimed at maintaining homeostasis in response to stressors.

The mediators produced by the immune system, the autonomous nervous system, the hypothalamus-hypophysis axis and the brain through neurotransmitters generate allostasis. When the organism is repeatedly challenged, or when the allostatic system remains chronically activated, the mediators of allostasis cause wear and tear both at the somatic level and at the brain level, and are subject to "allostatic load".

Hormones associated with stress, and allostatic load itself, protect the organism in the short term and allow for adaptation, but in the long term, allostatic load creates an instability that doesn't allow a new order to emerge. This causes alterations in neuronal plasticity, in cell repair and in the regeneration of the immune system, which is normally regulated by the melatonin peak during the hours of night sleep.

Systemic and Complexity Paradigm

The systemic paradigm allows to overcome the fragmented and mechanistic interpretation of reality in favor of a unifying and "holistic", and consequently individualizing, vision of living systems. The necessary condition for a system to establish and maintain itself is that its elements constantly interact through a continuous exchange of energy (mechanic, electronic, biological systems) and information (biological and social systems). When those elements cease to interact, due to an external interference or to the lack of energy, the system tends to degenerate to a state of independence of its individual components, with a gradual loss of the complexity of the structure and of functions.

Systemic medicine considers the human being as a complex whole made up of functionally interconnected cells, which are integrated and organized in multiple levels of hierarchy and complexity. These complex cellular systems collaborate and communicate, and their goal is survival. The human being may be represented as an autopoietic system (self-production) which is able to continually redefine itself and its boundaries, to keep itself stable and to renew itself at the same time.

Understanding of the living structure is always associated with the understanding of the metabolic and developmental processes; therefore, systemic thinking includes a shift of perspective from structures to processes.

For systemic medicine, life and health are a result of a dynamic stability made possible by the ability to adapt to the various stimuli and to maintain stability through change (allostasis).

According to W.E. Boyd, "Disease is a shift away from a condition in which the organism is in complete harmony with its environment; it is an entity with a known cause, with morphologic changes and clinical manifestations."

According to I.E. Perry and R. Gibson Miller, "A disease is any change in the structure and the function of the organism."

Homeopathy doesn't accept the ontological model of disease (based on which it is an entity which is autonomous and exogenous in relation to the organism); instead, it embraces the functional or relational model, which also allows for a real cooperation between doctor and patient.

Homeopathy sees chronic illness as a bundle of chronic pathological evolutionary processes in which the alteration of the self-conservation function changes the organizational pattern of the system, and processes follow mandatory routes that have an evolutionary nature and are bound to undermine in a more or less serious way the metabolism, the development and the structure of the system itself. The most characteristic traits of chronic illness are the loss of freedom in the system, the loss of synchronicity among the various processes and the inevitable increase of energy consumption.

Health, Disease and Recovery

According to the WHO, the concept of health is defined as a state of complete physical, psychological and social wellbeing and not as the mere absence of disease.

Therefore, health is a multidimensional phenomenon and disease originates from patterns of disorder which can manifest themselves at various levels in the organism, that is at the biological, psychological, structural or processual level. Such disorder causes an increase of energy consumption and an inability to rely on the self-healing mechanisms that are intrinsic to any living system.

The cell membrane and matrix play a key role in the organism web system, and when the inability to adapt causes any receptorial changes, these manifests themselves through specific symptoms which depend on the altered receptorial condition of the patient.

Homeopathy, by acting on the whole organism, enables the patient to achieve not only a feeling of psychophysical wellbeing, but also full recovery, accompanied by a higher awareness. The recovery isn't merely referred to the

individual disease that manifested itself, but regards the whole system, in which the complex web of biological interactions is no longer blocked.

At the current state of research, it is believed that the diluted and dynamized homeopathic remedy is able to provide, on a biophysical basis, the missing information that is most similar to the system.

Systemic Principles in Homeopathy

According to F. Capra, homeopathy is essentially a systemic approach to health and the healing process. The observation of the entirety of the most bizarre, peculiar and characteristic symptoms of the patient allows to identify the proper response to the imbalance of their organism and to individualize the patient. Considering these premises, it is possible to identify a remedy that, based on the symptoms that have been recorded during experiments on healthy subjects, mirrors the individual psychophysical characteristics of the patient and enables the individualization of treatment and the recovery based on the law of similars.

Using the language of systemic thinking, we could say that homeopathic treatment consists in matching the pattern of symptoms which characterize the patient with a similar pattern which characterizes the remedy.

Based on the theory of autopoiesis, when something unsettles a living web, the web will respond in particular to the alterations that correspond to its own structure. That is, a resonance arises between the pattern of the symptoms of the patient and the one of the homeopathic remedy.

Homeopathy is an Increasingly Relevant Response to the Crisis of Evidence-Based Medicine and the Need to Individualize Patient and Treatment

The emergence of a Personalized Medicine and a Precision Medicine has become a need that is felt worldwide, and it has been proposed for years in a growing number of papers on major international scientific journals, conferences and workshops. Research is being conducted on the so-called *endotypes* within specific diseases, which share specific biological features that would allow to prescribe the best treatment, overcoming the concept of disease treatment protocol (EBM: Evidence-Based Medicine). *For 200 years, homeopathy has been at the forefront of this research through the individual study of biotypes and of symptoms and the prescription of the most similar individualized therapy*, generating a constant flow of scientific papers that

explicitly describe the method and procedure followed to process clinical data and to perform the individualized prescription of medicines².

Treatment Results Achieved by Similar Medicines and Current Scientific Pharmacology

The use of similars for treatment purposes is not an esoteric phenomenon, like some people are inclined to think and claim, but it has a scientific and physiopathologic plausibility of its own, which stems from the observation of the primary and secondary action of medicines, that were first discovered by Hahnemann and have been reproposed in the last few decades through the modern concept of tolerance to drugs, the rebound effect, the paradox effect and the side effects of drugs. The action-reaction principle we have mentioned is one of the pillars of physiology and biochemistry. It isn't hard to make a connection with the current scientific pharmacology, in the light of the knowledge that has been amassed on the toxicological properties of medicines and/or active substances, the dynamics of cell and intra-tissue homeostatic responses, and the discovery of adaptation and regulation receptorial dynamics.

Just to give a few examples, it is well-known that drugs used to treat arterial hypertension may cause arterial hypertension as a side effect; that bronchodilators which would appear to be the most suited drugs to treat asthma cannot be used for a long time because they cause bronchoconstriction; that anti-arrhythmic drugs may cause arrhythmia; that antineoplastic drugs may cause neoplasia, and so on. Conversely, certain drugs that weaken the cardiac muscle in healthy patients have become a treatment staple for cardiac decompensation, irritating substances are used to desensitize patients from neuropathic pain and drugs with diabetogenic side effects are able to revert experimental diabetes in animals.

*Scientific rationality doesn't just not run counter to
the law of similars, a cornerstone of homeopathy,
but establishes it as one of the frontiers of modern pharmacology.*

²

See FIAMO's web page on this topic: <https://database.fiamo.org/>

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