

EDUCATION AND DEBATE

Models for explaining the homeopathic healing process: *a historical and critical account of principles central to homeopathy*

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The success of Homeopathy in curing many diseases has been a serious challenge to science. Nineteenth century explanations for the healing process of Homeopathy cannot withstand the scrutiny of modern science and need to be abandoned or modified. The surviving propositions are discussed. A biocybernetic model with multilevels of electromagnetic feedback loops offers a hope of explaining the healing process. This model, its explanation of the healing process and experimental support are elaborated. Homeopathy (2005) 94, 44–48.

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Introduction

During Hahnemann's creative lifetime (1796–1843), homeopathy evolved on the basis of two experimental findings: pathogenetic trials on healthy subjects and their subsequent application on the basis of similitude to disease. Homeopathy became used worldwide rather rapidly thanks to its success in three great epidemics: typhus, cholera and scarlet fever. Even as homeopathy grew over the next 150 years because of its successful treatment of other diseases, it did so without firm theoretical foundations. To face the dilemma, homeopaths chose between metaphysical speculation or, for those identified with natural science, abstaining from a definite opinion, waiting until material experimental conditions and instruments were available.

However, some evidence accumulated during the 19th century, covered homeopathy's conceptual spectrum: (1) minimum dose; (2) vital force; (3) law of

similars; (4) nature as the true healing force during homeopathic treatment; (5) proving in healthy subjects; (6) individuality of morbid processes; (7) individuality in prescribing; (8) miasms (Table 1).

The first concept to change radically was minimum, infinitesimal or micro-dose. This happened with the advent of the Avogadro–Loschmidt constant in the mid 19th century,^{1,2} it established that molecules cannot be divided infinitely. Hence the notion of the infinitesimal dose underwent a decisive transformation. It became evident that the solute (i.e. the initial tincture) could not be diluted infinitely, eventually disappearing during the dilution-agitation process. Increasing evidence of the physical chemistry of agitated dilutions entered scientific writings since 1988 with the controversial findings of French immunologist Jacques Benveniste.³ As the limited notion of low dose (or high dilution) pharmacology could not adequately describe a homeopathic preparation, we speak now of dynamized dilutions meaning serially diluted and succussed dilutions.

As the notion of 'ether' disappeared in Physics, the concept of one vital force responsible for life also became irrelevant to biology.

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Table 1 Changes in the theoretical foundations of homeopathy

Hahnemann I	Hahnemann II	Current
Microdose, low dose, high dilution, infinitesimal dose.	Dynamization, dynamized dilution, agitated dilutions, homeopathic dilutions physics of electricity and magnetism	Physical chemistry of polar solvents
Immaterial effluvia liberated by dilution Immaterial vital force, supernatural vitalism The law of similars	Organic and instinctive dynamism The law of similars	Quantum electro-dynamics Biophysics, Biochemistry, molecular biodynamics The similia principle, similia rule, or similitude generalization Biocybernetics, central healing system
Natura morborum medicatrix, vis medicatrix naturae Pure experiments in healthy subjects Morbid individuality Medicinal individuality	Curative vital reaction Provings	Controlled methodic pathogenetic trials Individuality through genetics, major histo-compatibility complex Poligenic diseases, clinical genetics
Immaterial miasms	Hereditary theory of miasms	

The original similia concept as a law could not sustain scientific scrutiny. But this concept can be described as a *descriptive generalization*. The relation of similitude persisted as the similia principle.

Another initial homeopathic principle considers nature the true healing agent: This corresponds to the *ponos* and *physis* of the Hippocratic tradition and can be visualized today as a reaction that triggers a biocybernetic process directed towards homeostasis.

The notion of pure drug experiments on healthy organisms or drug provings evolved into homeopathic pathogenetic trials (HPT) with strict methodological design.

The traditional concepts of individuality are now supported in a comprehensible fashion with the description of the human leukocyte antigen (HLA), the major histocompatibility complex. Immune responsiveness is affected, even controlled, by gene products of the major histocompatibility system and a growing number of diseases are now associated with human leukocyte antigens (HLA).^{4,5}

Similarly, the concept of hereditary miasms was clarified, even overturned when clinical genetics advanced the description of multiplicity in polygenic disease, also known as multifactorial genetic diseases.

The biocybernetic model

Evidence suggests that homeopathic medication activates an indirect healing response in the organism. This concept is supported by three arguments:

Pathogenetic trials. If a remedy directly produces symptoms in healthy organisms, it cannot then be capable of directly curing them in sick patients. So an indirect response must be responsible. Immunization is a classical example, it is not the attenuated virus that directly creates immunity, but it is the immune system that creates the cellular and humoral defence structure.

The use of toxic medicines such as *Apis*, *Lachesis*, *Crotalus horridus*, *Mercurius cyanatus*, *Arsenicum album*, *Conium*, *Sulfuric acid* and other corrosive and

toxic substances. If they acted directly, little would they cure!

In the pathogenetic trial, the homeopathic drug can elicit symptoms or signs anywhere in the body, which gave way to using the same remedy in diseases affecting various organs and systems. These wide ranging effects of the so-called constitutional homeopathic remedies suggest that a regulating principle—maybe a *central curative station*—is activated.

If the bodily reaction against the remedy (as in immunization) defines a general homeopathic healing process, which cell group, organ, apparatus or system would be the candidate for this central curative station?

To propose such a site, it helps to consider the diseases that homeopathy can cure. Logically, if homeopathy only treated neurological problems, we would suppose that it activated the central nervous system (CNS). If it only cures hormone problems, we would propose that it acts in the endocrine system and so on.

Because of the wide influence of homeopathic medicines on the organism, the candidates for a central curative station could be classified into five groups:

1. reticuloendothelial system,
2. central nervous system—autonomic nervous system axis (CNS—ANS),
3. genetic code (DNA—RNA; gene suppression or activation),
4. bioelectromagnetic sensitivity mediated by DC electricity, biophoton or water signaling transmission,
5. endocrine-adaptation reaction to stress (general adaptation syndrome).

The notion that such systems could determine a biocybernetical healing response, has been described by Jacques Monod⁶ in *Chance and Necessity*. He describes 'microscopical cybernetics' and how a regulatory mechanism functions to maintain health and homeostasis by using enzymes that interact with the genetic code.

The biocybernetic model is often invoked to explain how homeopathy is successful in treating diseases of

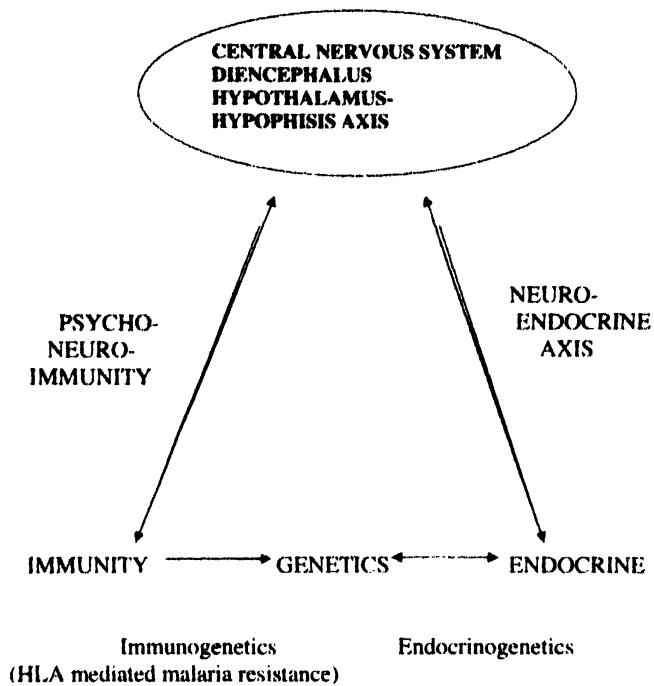


Figure 1. Feedback loops and circuit pathways.

different origins such as allergies,⁷ headache,⁸ difficult labor,⁹ fibromyomas,¹⁰ rheumatism,¹¹ ovarian cysts,¹² diarrhea,¹³ arterial hypertension¹⁴ and hyperactivity disorder.¹⁵

Growing clinical evidence of homeopathy's effectiveness in such a wide range of diseases, suggests that the best candidate would intervene in many immune, neural, endocrine and metabolic functions. It would be a central healing system that would hover above and control all other apparatus and systems.

The CNS is a likely candidate as it can control neurovegetative, neuroimmunity and endocrine functions via the diencephalon and its hypophyseal-hypothalamic axis (Figure 1). Another central mechanism that acts on many body functions is the DNA-RNA axis of the genetic code. But it would not be subordinated to the demands of the internal milieu mediated by neurovegetative mechanisms of control. In other words, while the DNA-RNA axis maintains the functions in health and during the genetic disease, it is unlikely to control healing or restoration of lost homeostasis.

Medical biophysics and the electromagnetic factor

Applied research has found a new parallel system of general regulation based on electromagnetic feedback information and circuitry nets. The Nobel Prize winner, Albert Szent Gyorgy and Robert O Becker founded medical biophysics. Becker is the central pioneer in the field of regeneration and its relationship to electrical currents in living things.

Becker explored if living organisms have forms of defence and restoration other than the classical humoral and cellular response. He designed a series of experiments focusing on the patterns of electrical polarity in sick animals under controlled conditions. Initially he chose the salamander; an animal with great capacity for regeneration and tissue restoration. Becker continued his studies in rabbits, rats, and finally in humans with fractured bones in which he was able to accelerate fracture healing with small doses of electricity applied externally.¹⁶ Becker's findings are important to the extended validation of homeopathy in terms of electronics and electromagnetism.^{17 25} If homeopathic remedies are reorganized polar solvents generating an electromagnetic field, then research on the diseased body should extend to medical biophysics and the more advanced studies that relate bioelectricity with pathology.

Becker also states that by influencing the rate of messenger-flow action potentials, the DC system acts as a data-transmitting control system. In addition it appears to transmit certain types of data such as pain and injury, by variations in its own state: an analog type of data transmission. It also seems to exert controls over certain peripheral as well as central or cranial functions. The reaction times of this system are low but the versatility high; therefore it is thought that this was the original functioning system in the first primitive nerve nets.²⁶

Experimental evidence from studies of salamander innervation show that the neurone's myelin sheath serves as a channel for electronic conduction and establishes the communication network needed during the healing process. This suggested an association of a direct current bioelectric field with elements in the CNS due to longitudinal flux of the charge in neural systems. The detected voltage disappears on severing the innervations and its magnitude is relative to the anesthesia level. This could be a primitive mechanism of information transmission supported by body innervation.²⁷ Becker considered his findings opposed the belief that in a direct current field generated by the totality of the electric activity of all the cells of the organism, there was no more of a specific organization than a simple cephalocaudal polarity.²⁸

Preliminary evidence of electromagnetic properties and activity of homeopathic medicines²⁹ might correspond to the discovery of this electronic system in the organism which might, in turn, be activated by dynamized homeopathic dilutions, reinforcing the interchange of information with the CNS (Figure 2). This would represent the underlying foundation for healing of any disease. While immunization activates the immune cybernetics at a circumscribed level (only for infectious or allergic purposes), in this model homeopathic medicines could amplify their sphere of action as they contact the neural analogical system which then interacts with the CNS. This hypothesis proposes a dual central control station of healing.

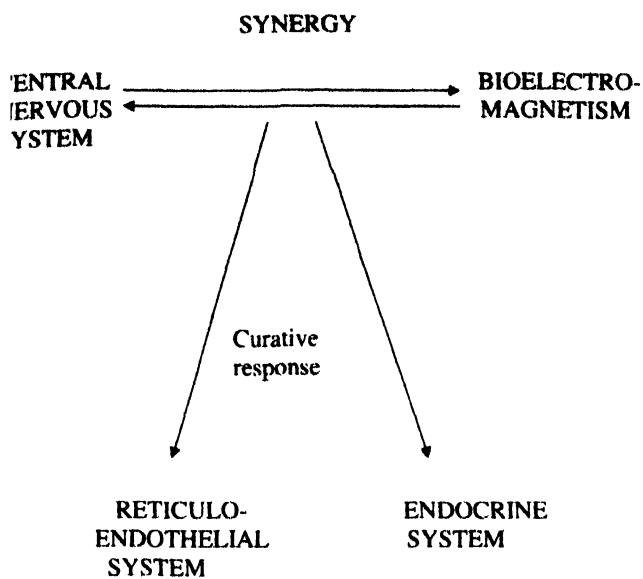


Figure 2. A model for a curative biocybernetics in homeopathy.

The possibility of activating cybernetic feedback circuits during homeopathic healing was proposed in 1988 by Bayr.³⁰ The Swiss pharmacologist, Stephan Bernbek, restated this proposition³¹ 'Homeopathic therapeutics constitutes a special form of directing regulated systems. We can suppose in fact, that all or almost all biological systems are regulated systems in the cybernetical sense. Developing intellectual models of homeopathic therapy from the concept of regulation circuitry to explain homeopathic therapy is consequently logical'.

Experimental evidence in healthy animals has shown that homeopathic medicines diluted above Avogadro's number (12c or 24X) can induce changes in the production of the cerebral neurohormones, dopamine and catecholamines. This confirms the capacity of such drugs to affect functions at the diencephalon level.^{32,33} Physiological experiments by Sukul, involving implantation of microelectrodes in the hind brains of rats have shown comparable results.^{34,35}

The possible central connecting role of the CNS in healing was stated by Becker³⁶ as follows: 'The possibility has never been seriously considered that the perineural-cell system, extending throughout the whole body exactly as the nerves do, functions as a primitive communications system'.

Theoretically, biological control systems should be similar to such inorganic systems as a computerized home heating system. In general, a biological system could be presumed to have a mechanism for sensing an event (for example, an injury), and then transmitting this information to the central processing unit (in this case, the brain). In the brain, an automatic 'decision' would be made to initiate repair of the wound, and a stimulating or 'correcting' signal would then be transmitted from the brain to the site of injury. As repair took place, the injury signal would be diminished, causing the stimulating signal also to diminish.

System activity would cease when the repair was completed. This is a simple negative-feedback control-system loop. I postulated that such systems in living organisms would very likely be electrical in nature.

Aided by the technical evolution of science made possible by using instruments of great sensitivity and sophistication, we have described electronic control systems in the organism that regulate functions like growth and healing. These interdependent systems could also serve as the foundation of our control and communication systems. What has emerged is the basic schema of a dual nervous system: first a primitive analog component that appeared early in evolution and then the second, of more recent origin, being a more sophisticated digital component using nerve impulses.

Conclusion

The model presented here is a tentative explanation of homeopathy's mode of action, it is one of the three hypothetical models referred to in the homeopathic literature:

1. hormesis,
2. symptoms as a curative process (disease imitation)
3. the central reaction model.

These competing hypotheses generate the theoretical and experimental foundation for a future explanation of the homeopathic healing mechanism. They do not contravene the fundamental principles of homeopathy: the pathogenetic trial and the similia generalization.

References

- 1 Rodriguez R, Rosas Landa V. Estudio temático sobre el numero de Avogadro y el medicamento homeopático. *La Hom México* 1991; **547**: 12-15.
- 2 Rodriguez R, Rosas Landa V. El medicamento homeopático y el numero de Avogadro. *La Hom México* 1991; **554**: 24-26.
- 3 Benveniste J. Human basophil degranulation triggered by very dilute antiserum against IgE. *Nature* 1988; **333**: 816-818.
- 4 McDevitt HO, Bodmer WF. Histocompatibility antigens, immune responsiveness and susceptibility to disease. *Am J Med* 1972; **52**: 1-8.
- 5 Stastny P, Ball EJ, Dry PJ, Nunez G. The human immune response region (HLA-D) and disease susceptibility. *Immunol Rev* 1983; **70**: 111-154.
- 6 Monod J. *El Azar y la necesidad*. Barcelona: Orbis, 1979.
- 7 Reilly S, et al. Is evidence for homeopathy reproducible?. *The Lancet* 1994; **344**: 1601-1606.
- 8 Muscari Tomaioli G, Allegri F, Miali F, Pomposelli R, Tubia P, Targhetta A, Castellini M, Bellavite P. Observational study in quality of life in patients with headache, receiving homeopathic treatment. *Br Hom J* 2001; **90**: 189-197.
- 9 Ventoskovsky Bm, Popov AV. Homeopathy as a practical alternative to traditional obstetric methods. *Br Hom J* 1990; **79**: 201-205.
- 10 Popov A. Homeopathy in the treatment of patients with fibromyoma of the uterus. *Br Hom J* 1992; **81**: 164-167.

- 11 Fisher P. Effect of homeopathic treatment on fibrositis. *BMJ* 1989; **299**: 365-366.
- 12 Queralt Gimeno ML. Homeopathic treatment of ovarian cyst. *Br Hom J* 1991; **80**: 143-148.
- 13 Jacobs J, et al. Treatment of acute childhood diarrhea with homeopathic medicines. A randomized clinical trial in Nicaragua. *Pediatrics* 1994; **93**: 719-725.
- 14 Ochoa F, Ruiz A, Searcy R. Control de tensión arterial elevada con *Lachesis muta* 200c en el servicio de urgencias del Hospital Nacional Homeopático. *Boletín Mexicano Hom* 1995; **28**(2): 48-53.
- 15 Frei H, Thurneysen A. Treatment for hyperactive children: homeopathy and methylphenidate compared in a family setting. *Br Hom J* 2001; **90**: 183-188.
- 16 Becker RO. The bioelectric field pattern in the salamander and its stimulation by an electronic analogue. *IRE Trans Biomed Electron* 1960; **7**: 202-207.
- 17 Aïssa J, Litime MH, Attias E, Benveniste J. Molecular signaling at high dilution or by means of electronic circuitry. *FASEB J* 1993; **150**: A146.
- 18 Litime MH, Aïssa J, Benveniste J. Antigen signaling at high dilution. *FASEB J* 1993; **7**: A602.
- 19 Sekekowitsch F, Endler PC, Pongratz W, Smith CW. Hormone effects by CD record/replay. *FASEB J* 1995; **9**: A392.
- 20 Benveniste J, Aïssa J, Jurgens P, Pham D. Effect on the isolated heart of water preexposed to a permanent magnetic field. *FASEB J* 1995; **9**: A425.
- 21 Citro M, Endler PC, Pongratz W, Vinattieri C, Smith CW, Schulte J. Hormone effects by electronic transmission. *FASEB J* 1995; **9**: A392.
- 22 Benveniste J, Jurgens P, Aïssa J. Digital recording/transmission of the cholinergic signal. *FASEB J* 1996; **10**: A1479.
- 23 Benveniste J, Aïssa J, Guillonnet D. Digital biology; specificity of the digitized molecular signal. *FASEB J* 1998; **12**: A412.
- 24 Benveniste J, Aïssa J, Guillonnet D. A simple and fast method for *in vivo* demonstration of electromagnetic molecular signaling (EMS) via high dilution or computer recording. *FASEB J* 1999; **13**: A163.
- 25 Benveniste J, Aïssa J, Guillonnet D. The molecular signal is not functional in the absence of 'informed' water. *FASEB J* 1999; **13**: A163.
- 26 Becker RO. The direct current control system. *New York State J Med* 1962; 1173.
- 27 Becker RO. Search of evidence of axial current flows in peripheral nerves of salamander. *Science* 1961; **134**: 101-102.
- 28 Becker RO. Effects of electric currents on bone *in vivo*. *Nature* 1964; **204**: 652-654.
- 29 Endler PC, et al. *Ultra high dilution. Physiology and Physics*. Dordrecht: Kluwer Academic Publishers, 1994.
- 30 Bayr G. *Kybernetic und homoopatische Medizin*. Heidelberg: Haug, Verlag, 1866.
- 31 Bernbek S. *Homeopatía. Una terapia Básica*. México: Propulsora de Homeopatía, 1991 p. 29.
- 32 Resendiz J. *Accion de Bufo rana sobre la dopamina cerebral. Temas de Investigación en Homeopatía, Chapter 8*, México: Propulsora de Homeopatía; 1991.
- 33 Sánchez-Resendiz J. Efecto de *Lachesis trigonocephalus* sobre dopamina cerebral en rata.
- 34 Sukul NC, Paul A, Sinhababu SP. *Hypothalamic neuronal responses of rats to homeopathic drugs. Omeomed 92*. Bologna: Editrice Compositori, 1993 1pp.
- 35 Sukul NC, Abuev AS, Sabanov V, Kourzina NP. Neuronal activity in the lateral hypothalamus of the cat and the medial frontal cortex of the rat in response to homeopathic drugs. *Indian Biol* 1991; **23**(2): 17.
- 36 Becker RO. *Cross Currents*. Los Angeles: Jeremy P Tharcher Inc., 1990.