# SCIENTIFIC BASES OF HOMOEOPATHY: OPERATIONAL LAWS OF HOMOEOPATHY AS COMPRISING NEW SCIENCE OF ULTRAMICROXENOPATHY

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ABSTRACT: Modern sciences have no explanation for (empirically) established homoeopathic laws including drug actions at homoeopathic dilutions and have invalidated the concept of vital force which is still so basic to homoeopathic theories. This has created a conceptual vacuum in Homoeopathy and necessitated revision in scientific theories. Previous papers developed a molecularbiological theory and rationalized: (a) *Vital force* as CNS-mediated molecular mechanisms prior and basic to profound homoeostatic state whose continuance characterizes health and perturbation a disease. (b) *Principle of drug-proving* as new science of xenobiology proposed to study total biological response, to xenobiotics, in healthy subjects. This paper rationalizes, from the same premises, the law of similars, potentisation, drug action at ultrahigh dilutions, homoeopathic aggravations, recovery from centre to periphery etc., as comprising the new science of ultramicroxenopathy which envisages the use of that xenobiotic, in ultramicro quantities, as medicine, to cure that disease whose signs and symptoms are similar to those of the biological response to the xenobiotic in healthy state. Here CNS emerges to direct endogenous generation of disease-specific 'self' remedies elicited by these 'non-self' homoeopathic drugs via the induction/activation of necessary strategic enzymes. According to the homoeopathic philosophy and traditional practice Allopathy and Homoeopathy cannot go together. But here a very promising system of unified therapeutics is proposed theoretically and supported by observational evidence in which homoeopathic medicines are used concurrently with allopathic drugs, mental yoga, physical yoga, and healthy counselling, as mutually compatible and complementary units. This unified system could be named as *Navāyurveda* and recognised as new Indian system of medicine. There are also other points to interest a serious reader.

## INTRODUCTION

Homoeopathy is now suffering unprecedented conceptual vacuum since its basic concept of vital force has been rendered untenable by recent researches in molecularbiology and none of present-day sciences has any provision to explain its various laws/principles including the drug action at homoeopathic dilutions. The author, over the past more than a decade has, as a hobby, used and consistently found, the homoeopathic drugs to act in accordance with the basic (empirical) laws and at ultra high dilutions never employed in scientific practice before. This corroborates the huge mass of observational evidence, contributed over the past more than a century by a large number of homoeopaths all over the world, strongly supporting the homoeopathic phenomena and 'art' as *established* 'facts'. There is therefore a case for revision in the scientific thought and approach which this series

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of papers has undertaken to propose, in order to call attention and seek co-operation of other scientists as well.

The papers regarded as first[1] and second[2] in the series gave an overview of the proposed hypotheses. The third paper[3] rationalized the homoeopathic concept of vital force as molecular mechanisms, involving CNS- mediations comprising the new science of paraphysiology, prior and basic to profound homoeostatic state. The fourth paper[4] proposed a new science of xenobiology from the molecular-biological theories developed earlier[1-3] to rationalize the principle of drug proving from which the homoeopathic materia medica is built. This paper proposes, from the same premises[1-4], yet another new science of ultramicroxenopathy which covers the various laws and principles of the art of homoeopathic practice. It is, however, much more comprehensive and has wider scope and potentials.

## THE NEW SCIENCE AND HOMOEOPATHIC LAW OF SIMILARS

The newly proposed[2] medical science of ultramicroxenopathy envisages the use of *ultramicro* quantities of *xenobiotics* as medicines. Under it, that xenobiotic, in suitable micro quantity, acts curatively, which produces in healthy subjects a xenobiotic response[4] with signs and symptoms most similar to those of the disease under treatment. This statement is same and consistent with the homoeopathic law of 'similars' namely, *similia similibus curantur*[5,6] (see below).

Under the modern medical sciences, the term 'xenobiotic' is synonymous with the 'drug' used in *macro* quantity to palliate morbid symptoms by neutralizing, suppressing or removing the *products* and *results* of disease according to the Galen's thesis of *'opposites'* namely, *contraria contrariis*. Thus, antacids are prescribed to neutralize the acid excessively secreted in the stomach; digitalis is given, to suppress tachycardia, due to its action of lowering the heart rate; purgatives to remove constipation, and so on.

Here, xenobiotic is a very comprehensive and wide concept but associated with somewhat different meanings[4]. It is a substance foreign to the *milieu interieur* in quality and/or quantity. It may be of any origin (animals, plants, minerals, chemicals) or chemical form (organic, inorganic). Thus, the substances which, in traditional usage of macro quantities, have hithertofore been designated as poisons, venoms, toxics, toxins, allergens, and the like, now under ultramicroxenopathy assume a new role of therapeutic agents—the 'saviours'!

Under the separately proposed science of xenobiology[4], non-toxic quantities of these toxic xenobiotics are intentionally administered to healthy subjects to induce artificial short-lasting diseases and to record the elicited morbid signs and symptoms. This is the homoeopathic principle of drug proving which forms the basis of the development and compilation of the homoeopathic, and here ultramicroxenopathic, materia medica.

Even a natural component of the *milieu interieur* may behave xenobiotically and elicit a biological response if and when its concentration quantity becomes higher or lower than the tolerable normal range for the particular subject at any time. For instance, both higher and lower than normal concentrations of the thyroid hormone induce definite though distinct diseases with characteristic signs and symptoms[4]. And, *this is important*, both hyper- and hypo-thyroidisms can be treated by one and the same homoeopathic sarcode 'thyroidinum' prepared from thyroid extract.

For building up molecular bases of the law of similars and other operational principles of Homoeopathy we would now recapitulate the CNS-mediated molecular mechanisms postulated separately[1-3] as underlying the states of health and natural cures.

CNS-MEDIATED BASIC MOLECULAR MECHANISMS

The state of health is characterized[1-3] by the homoeostatic state which has two components: (a) existence of the general profound homoeostasis, (b) patency and fullness of the capacity to restore homoeostasis after perturbations. This profound general homoeostasis is maintained by the coordination of innumerable metabolic reactions catalyzed by enzymes. The synthesis and activity of enzymes is governed by extra- and intra-cellular signals. These signals are regulated/controlled by the CNS-master regulator. The enzyme-populated-and-operated system, and the CNS-master regulator are inter-connected through multi-way biofeed back/forward mechanisms and thereby interwoven into a single whole[3]. All cells, tissues and organs, through their attempts to maintain their own intrinsic local homoeostasis, help maintain that of others throughout the whole body. The homoeostatic state underlying continued health is a state of dynamic equilibrium/balance accomplished through the coordinated processes, of detection, localization, positive recognition and correction of perturbations, carried on continuously and ceaselessly via the CNS-mediated system of surveillance and control[3-4]. Every perturbation of the homoeostatic state is a disease-state and its restoration a cure. Behind the continued state of health, therefore, lies an endless and continuous series of alternations of transient diseases and cures—a condition to which we are accustomed since birth as *normal health*. These spontaneous natural cures are brought about by endogenously generated disease-specific 'self' remedies comprising regulations of the pupulation size, functions and activities of the necessary and sufficient set of enzymes and of the metabolic processes catalyzed by them. Likewise, a 'longer-than-transient' spontaneous perturbation in the homoeostatic state constitutes a natural disease which is also rectified by a 'natural cure' through endogenous 'self' remedies. The natural remissions in a remitting disease also occur through the same molecular mechanisms.

So, the continuance of health and the occurrences of natural cures and remissions, demonstrate, and are brought about by, the basic processes of

endogenous generation of disease-specific 'self' remedies as part-function of the self-correcting general homoeostatic machinery involving mediations of the CNS, the extra- and intra-cellular signals, and of the synthesis and/or activations of the strategic enzymes.

MOLECULAR BASES OF THE LAW OF SIMILARS

The presence of a xenobiotic in the *milieu interieur* is manifested as a xenobiotic-response with signs and symptoms of an artificial disease. At the same time, detection, localization and positive recognition of the xenobiotic take place which set into action the CNS-directed general homoeostatic system to generate endogenous signals and enzymes to modify and eliminate the xenobiotic from the *milieu interieur* and thereby its perturbation of the homoeostatic state. This has been discussed separately[4] under the newly proposed science of xenobiology.

A perturbation of the homoeostatic state signifies a disease-state, and its signs and symptoms characterize the disease. If the totality of signs and symptoms, subjective as well as objective, elicited in an artificially created xenobiotic disease are similar to those of a natural disease, the enzyme-system suppressed or deficient in the two cases would be the same. Therefore that particular xenobiotic, *in appropriate quantity*, (see below), can be used to induce or activate the necessary enzymes to cure that natural disease.

The above considerations are based on the two-fold degeneracy of enzyme function and induction. One, the same substance can serve as substrate for and be metabolized, though at different rates, by more than one enzyme—the isozymes. Two, the same enzyme can metabolize more than one substance, though at different rates. Therefore more than one xenobiotic can overload and induce/activate the same or similar enzymes though to different extents. Moreover, the inducers, in general, serve as substrates for the enzymes (including permeases, if any) they induce, compounds structurally similar to the substrate may also act as inducers but not substrates. These are called *gratuitous inducers*[1]. Conversely, a compound may be a substrate but not an inducer. Although frequently, the inducer for an enzyme is a substrate but the product[3] of catabolism may also induce the enzyme. The genes comprising an operon specify for the enzymes required in a cascade for metabolizing a substance through a series of enzyme-catalyzed steps, the product of one step serving as substrate for the following step. In such a situation, all these enzymes are induced by a single inducer. This phenomenon is called *coordinate induction*. Conversely, a single substance can suppress/overload or repress all the enzymes, specified by the operon, together. A xenobiotic/homoeopathic drug may belong to any one of the above classes of enzyme-inducer.

A xenobiotic which by its presence is causing a disease cannot act curatively but instead would further overload the corresponding enzymes and aggravate the disease. A 'similar' xenobiotic or the same xenobiotic in a

'modified' (similar) form could however act curatively by inducing 'similar' isozymes. However, when the causative xenobiotic has been eliminated but the disease continues in a chronic form, the same or a similar xenobiotic could be used as a medicine. This is consistent with the use of homoeopathic 'nosodes' in treating disease or in removing 'blocks' in homocopathic treatments.

The form of sodium in the homoeopathic drug *Natrum mur. prepared* from sodium chloride through dilutions in alcohol is 'similar' but not identical to, nor very different from, that of the hydrated sodium ion existing in the *milieu interieur*. This is probably why Natrum mur. acts curatively in some disorders of sodium metabolism, including the craving for salt. This perhaps explains the use of other chemicals (like potassium chloride, calcium carbonate), normally occurring as natural components of the plasma/tissues, under homoeopathic system, as medicines. For example, Ferrum phos. is used in iron-deficiency anaemia, Calcarea carb. in bone-diseases, and so on. The fact that homocopathic Calcarea carb. acts curatively in obesity and tissue overgrowths suggests a role of calcium-metabolism in these conditions and needs to be investigated scientifically. This author[1] once dissolved with Calcarea carb. a solitary benign thyroid nodule in a patient and avoided otherwise indicated surgery.

The use of vaccines, toxoids and homoeopathic nosodes for prophylactic purposes could also be understood from the law of similars.

However, the above molecular and enzymatic bases of the law of similars under Homoeopathy or ultramicroxenopathy could be contrasted with the explanation given by Hahnemann[5] from the now-invalidated concept of vital force: During the action of the drug the vital force is freed from the influence of the natural disease and is governed by the stronger, artificial drug-disease of the same kind. This artificial disease soon passes off leaving the patient cured. According to Hahnemann, this is the most 'probable' process of homoeopathic drug action. He attaches no importance to other attempts to explain it scientifically because that knowledge is not necessary to cure a patient[5-3].

MOLECULAR BASES OF DRUG ACTION AT ULTRAHIGH DILUTIONS AND OF POTENTIZATION PRINCIPLE

The quantity of the homoeopathic/ultramicroxenopathic drugs is too small to suggest involvements in direct chemical reactions or physical engagements. They perhaps act by 'triggering' the induction and/or activation of the requisite enzymes via CNS-mediation[1-4].

The homoeopathic drugs in ultramicro quantities are administered by sniffing, putting on tongue or by sprinkling/rubbing on the skin. Those drugs which after absorption into vascular circulation could cross the blood-brain-barrier would act on the CNS directly. Those which could not cross this barrier could affect the CNS via the endocrine-pituitary-hypothalamus axis.

Action on the local chemiceptors or polymodal nerve endings could also affect the CNS through interconnecting neuronal routes [4,5]. As the first step of drug action, the interior of the target cell gets the xenobiotic information either through its actual entry into the cell or via release of second messengers (like cAMP, cGMP) preceded by binding to the membrane receptors[4]. This probably leads, somehow, to the release of neuropeptides or other inter-neuron chemical/electrical signals and to the final induction or activation of requisite enzymes.

The enzyme induction is known[5] to follow the law of mass action. The amount of enzyme induced is proportional to the quantity of the 'inducer' at low concentrations. This stage is followed by a saturation plateau signifying inhibiting levels. The minimum quantity for threshold of enzyme induction would be much lower. The CNS-mediation (see above) introduces one or multi-step biological amplification. The optimum minimum amount of the xenobiotic drug as the primary inducer would therefore be very very small indeed—hardly a few molecules, particularly for the 'toxic' substances or 'gratuitous inducers' (see above and references 1, 2).

According to the above scheme the self-surveillant, self-maintaining and self-correcting CNS-mediated homoeostatic machinery sets out to generate endogenous 'self' remedies in the form of induced signals and enzymes required to eliminate homoeostatic perturbations and thereby restore health. The homoeopathic 'non-self' drugs act to trigger or initiate this process of induction or activation of requisite enzymes.

It is now apparent from above that the process of effecting ultra-high dilutions converts an ordinarily-toxic substanee into a therapeutic agent. This may be contrasted with the homoeopathic belief[5-6] that 'potentization' brings out tbe 'spirit like' medicinal properties of the 'crude' (toxic) substances by raising them to 'spiritual planes.' (see also below)

The cause of homoeopathic drug action is certainly not to be found in the solvent alcohol as has unsuccessfully been sought by some workers[9]. These medicines do act when absorbed and dried on sugar globules where there is no trace of alcohol left[1].

MOLECULAR BASES OF HOMOEOPATHIC AGGRAVATIONS

(i) If the quantity of the xenobiotic drug selected on the law of similars is just sufficient to induce the requisite enzymes and thereby get itself eliminated quickly the amelioration of symptoms and the cure would follow soon after the dose[1].

(ii) If the 'similar' drug persists either because the enzyme-induction is slow or the quantity administered is more than necessary, the drug will overload and accentuate the need for the same enzymes as needed under the natural disease. The aggravation of disease symptoms will last till the requisite enzymes get synthesized and tbe extra drug eliminated. This will be followed hy amelioration of symptoms and cure[1].

(iii) If the homoeostatic machinery[1-3] is incapable of inducing requisite enzymes the 'similar' drug will elicit aggravation of disease symptoms which will last long and not followed by amelioration and cure. This represents an incurable disease[5-6].

Other types of homoeopathic aggravations as discussed by Hahnemann[5] and Kent[6] can be understood on similar lines. But the above exposition can be contrasted with their explanation in terms of the reaction of the vital force.

The reader is referred to other papers[1-4] for the explanation of other principles like last symptoms to disappear first in homoeopathic treatment, general symptoms more important than particulars, individualization and so on. The principle of recovery from centre to periphery is explained in the next section.

THE SYSTEM OF UNIFIED THERAPEUTICS

According to *these hypotheses the self-surveillant*, self-maintaining and self-correcting homoeostatic machinery has a number of physiological planes to operate from, namely, (a) the CNS-master regulator, (b) the signal-operated system, (c) the enzyme-operated system, (d) the immune system, and (e) the cells and tissues. These are also the planes for the disease-cause to situate on. In fact, all these homoeostatic units are intimately interconnected through multiway biofeed back/forward mechanisms to constitute a 'whole'. The state of health is characterized by (i) the existence of general homoeostasis and (ii) the capacity to maintain homoeostasis under perturbations.

The state of continued 'normal' health involves frequent occurrences and spontaneous quick removals of small, transient perturbations of the homoeostatic state (i.e. diseases) via the mediation of the self-correcting homoeostatic machinery. Natural cures and remissions also occur through the same processes of spontaneous endogenous generation of the disease specific 'self' remedies consisting of the optimization/regulation of the population size, functional nature and activity of the strategic enzymes. The thought, suggestion and belief affect the states of health, disease and cure, adversely or favourably, through the cerebral cortex which in its turn affects the CNS-master regulator and thence the entire homoeostatic machinery. The mental yoga (*prityāhār, dhārnā, dhyān, samādhi*) act curatively/recuperatively via the same route. The curative and recuperative actions of the physical yoga (*āsan, prānāyām*) are effected on the CNS-master regulator through peripheral neuronal pathways leading to the local circuit neurons (LCNs) and local neuronal circuits (LNCs) of the CNS [1,2]. Here, subthreshold electrotonic controls are used instead of the spike potentials surging during the dynamic excercises. The homoeopathic/ultramicroxenopathic 'non-self' drugs help the self-correcting homoeostatic system to endogenously generate disease-specific 'self' remedies by way of inducing/activating strategic enzymes.

In all the above curative processes both (i) homoeostasis and (ii) homoeostatic capacity are restored. Therefore the cure is complete and permanent. Here, the 'natural' processes and mediation of the self-correcting homoeostatic machinery itself are commissioned and used, and the recovery proceeds from *centre to periphery* along the five (a to e) physiological planes of homoeostatic system listed above. This is consistent with and supported by the homoeopathic principle and time-honoured observations of recovery from within outwards or from centre to periphery[3-6]. The central point that homoeopathic drugs act below and prior to the immune system is illustrated by the possibility[1] of treating psoriasis which is now known to be associated with immunological disturbances[10]. It is also possible to treat[1] homoeopathically the cases of Indian childhood cirrhosis which is now known[11] to involve defects in tryptophan metabolism obviously due to the lack of corresponding enzymes. This supports the hypothesis of two-fold degeneracy in enzyme function and induction enunciated above as the basis of ultramicroxenopathy.

The macropathic (e.g. allopathic) drugs restore only the homoeostasis, and not the homoeostatic capacity; that too artificially and temporarily but *quickly*. They act by neutralizing, removing or blocking the products and results of the disease whose cause being situated at deeper physiological planes. During the so created symptom-free state, the self-correcting homoeostatic system generates 'self' remedies, if and when it possibly can. That is why, in chronic diseases, they are not very effective even with long symptomatic treatments. The quick restoration of the homoeostasis and thereby the feeling of relief and well-being is the potent reason and attraction for their so wide and continued acceptance and use despite their well recognized side effects and iatrogenesis.

In appropriate situations a system of *unified therapeutics*[1-2] comprising judicious combination of (a) healthy counselling, (b) metal yoga, (c) physical yoga, (d) homoeopathic medicines, and (e) allopathic drugs, as mutually compatible and complementary units, should prove effective and efficient. The healthy counselling would wean the mind from aiding the disease processes and deploy it to aid the curative actions. Decentration (*pratyāhār*) followed by *'effortless'* concentration (*dhyān*) would help control psychological component of disease. Static excercises of body and breath tone up the neuromuscular system and tranquillize the mind particularly when combined with concentration at important points/parts of the body. Homoeopathic medicines act curatively to eliminate the cause of the disease situated at deeper physiological planes. Allopathic drugs help maintain symptom-free state and control homoeopathic aggravations, and thereby reduce agony and discomfort of the disease and of the homoeopathic treatment. The judicious combinations of Allopathy and Homoeopathy re-assure the patient, provide a sort of psychological cover and also improve acceptance of the homoeopathic treatments.

The above deducto-inductive logical development of the molecular-biological theoretical premises of the system of unified therapeutics is supported and borne out by the encouraging personal experience of this author[1,2] in the case of a number of difficult diseases like asthma, epilepsy, migraine, Indian childhood cirrhosis, trigeminal neuralgia, psoriasis, arthritis, common cold, and so on.

However, in contrast, the homoeopathic philosophy[3] and traditional practice, consider Allopathy and Homoeopathy as two extremes which can never meet. Therefore true Hahnemannians insist on patient's stopping allopathic drugs before and during homoeopathic treatment—a step which many a time leads to avoidable enormous sufferings of the patient and also to the reluctance for undergoing homoeopathic treatment initially. This needs to be rectified and the proposed system of unified therapeutics popularly adopted for the good of the suffering humanity.

In view of the new national medical education policy of the Government of India, the herein proposed unified system could be named as *Navāyurveda*, meaning new Ayurveda in Hindi, and recognised as new Indian system of medicine. This system, as shown above, would definitely improve 'patient management' and help shorten the traditional list of 'incurable' diseases.

## CONCLUSIONS

(i) In view of the huge mass of strong and persuasive observational evidence accumulated over the past more than a century the art and empirical laws of Homoeopathy are to be regarded as established 'facts' of reality for which none of the present-day sciences however, has any explanation. Post-1960 researches in molecular-biology have invalidated the concept of vital force which is still so basic to homoeopathic theories. This has created a state of unprecedented conceptual vacuum in Homoeopathy and also a need of revision in scientific theories. This series of papers has developed a molecular-biological theoretical scheme to explain the homoeopathic phenomena.

(ii) The CNS-mediated molecular mechanisms have been identified which, like vital force, are prior and basic to the profound general homoeostatic state whose continuance characterizes health and perturbation a disease.

(iii) Previous paper proposed the new science of xenobiology to rationalize the homoeopathic principle of drug proving.

(iv) This paper proposes yet another new science of ultramicroxenopathy as comprising the rationalization and explanations of the laws of similars, potentization, and of the drug actions at ultra high dilutions, recovery from centre to periphery and so on.

(v) According to these theories the self-surveillant, self-maintaining and self-correcting CNS-mediated homoeostatic machinery generates the disease-specific 'self' remedies in the form of induced/activated strategic enzymes which are elicited by the 'non-self' homoeopathic drugs.

(vi) Deducto-inductive logical development of the plea for a very promising system of unified therapeutics shows that allopathic drugs, as against the conventional homoeopathic philosophy and practice, can be used concurrently with homoeopathic treatment and with advantage.

(vii) Chronic disease, is characterized by intrinsic inability to self-restore homoeostatic capacity, hence needs 'similar' medicines to *induce* this capacity, and cannot be cured even on long symptomatic treatment with 'opposite' drugs alone.

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