

The Quantum Leap

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Whenever I mention homeopathy to medical doctors, many ask for 'scientific' research or background to it. It is interesting that this question does not seem to be an issue amongst the homeopaths who are working with homeopathy itself. Is it because they are not interested to know, or even that they may have an invested interest not to know? I don't think so.

In my experience in the homeopathic community, many homeopaths became interested and eventually studied the subject after they experienced it first hand as patients. After seeing the effects on themselves, there was no question for them as to whether it actually works. One must however, note that one condition was initially present in all these situations—an open mind. These people must have had an open mind to have tried it in the first place. And this is what I kindly request of you while you read this article.

For those who are particularly skeptical about homeopathy, may I give an analogy which may help to put the rest of the article in perspective:

Homeopathy is to Medicine
as
Quantum physics is to Molecular physics

WHY HOMEOPATHS DO NOT NEED TO KNOW HOW IT WORKS - TO WORK WITH HOMEOPATHY:

The homeopath basis his prescribing on actual observation of the effects of his medicines on healthy human beings. Such observations provide all the information needed to define the range of the action of the medicine, and to help select the proper remedy for a given patient. Therefore, the homeopath is not concerned with theoretical explanations of drug action.

Moreover, homeopathy is based on a set of principles derived from observation (refer to Inductive method next para.), including the Law of Similars, and Hering's law, which guide the homeopath in the application of homeopathic medicines in the treatment of illness. These principles have remained stable over 200 years of homeopathic practice. The structure of the homeopathic principles is such that new information can continually be incorporated into the existing body of knowledge. As new homeopathic medicines are proved and added to the materia medica, they can be applied according to the same principles that guided homeopathic prescribing since Hahnemann's time.

WHY HOMEOPATHY WORKS - EVEN IF HOMEOPATHS DO NOT KNOW WHY:

Another reason why homeopathy works and is not an issue for homeopaths, may be explained by the different models of scientific enquiry underlying conventional medicine and homeopathy.

Homeopathy is based on the *Inductive* experimental method. This procedure for discovering natural laws, traces its origins in the writings of the empiricist Francis Bacon (1562-1626), and has since evolved into a model for proper scientific inquiry in many fields of study.

The Inductive method involves three steps: observation, hypothesis, and experimentation. The scientist first observes the world around him and notes phenomena which seem to proceed in an orderly manner. On the basis of such observation, he formulates a hypothesis about how such phenomena will act under certain conditions, and he then subjects his hypothesis to an experiment to see whether the predicted phenomena actually occur. The inductive method is based on *experience* because it proceeds from an empirical fact.

Conventional medicine has been largely based on the *Deductive* model, initially employed by Aristotle, and then used by Galen in his teachings. This model proceeds from abstract established principles, through rigid mathematical steps, to conclusions about empirical phenomena. Because it proceeded from abstract theory, conventional medicine may be resistant to the evidence of experience. This is evident even today, in practice, when doctors rely more on the theory they have studied, than on the patients' account of their own symptoms. Sometimes doctors ignore or, worse still laugh at their patients, if they describe strange symptoms which do not conform to the theory.

For Hahnemann and his followers, it was not necessary to understand why the drugs acted the way they did. They were testing whether drugs did act on the principle of similarity, and they were guided in their practice by the continually accumulating body of evidence in support of this hypothesis.

Confirmation of the efficacy of homeopathic medicines and the basis for their prescription- the Law of Similars, continues even today in homeopathic practice. The fact that **not one of the potentised homeopathic medicines has been withdrawn during the 200 years since the inception of Homeopathy** is evidence in itself to the efficacy and safety of homeopathic medicines.

RESEARCH AND THEORIES ON THE MECHANISM UNDERLYING HOMEOPATHIC MEDICINES:

Much of the skepticism about homeopathy revolves around the issue of how homeopathic potencies can produce an effect on the human organism. Homeopathic medicines are made by serial dilution of the substance, with succussion at each step of dilution. The more dilute the remedy, the more potent it is. According to Avogadro's law, beyond the 12th centesimal or the 24th decimal potency it is highly unlikely that a single molecule of the original substance will be present in any dose administered to the patient. Yet homeopaths report significant effects from potencies as high as millions!

Modern attempts to account for the activity of such high potencies have taken their cue from such branches of contemporary science as quantum chemistry.

Barnard and Stephenson in a 1967 article "Microdose Paradox: A new Biophysical Concept", propose that, through the process of dilution and succession, the active substance acts as a template, communicating a field effect to the solvent through the formation of polymer chains (giant molecular aggregates) in the solvent. The three-dimensional structure of such polymers would be specific to each individual solute. Once the structural information content of the solute has been transmitted to the solvent through the formation of polymer chains, the solute need no longer be present for the solvent to communicate that information to the human organism. How this quantum leap occurs is still to be explained.

In a 1977 article, Matthew Hubbard pointed out that when Avogadro formulated his law, matter was not believed to be divisible beyond the level of the atom. Now we have identified subatomic particles, and one contemporary model defines atoms as *ordered waves of energy*. Thus, when we study the phenomena associated with apparently material substance, we are no longer restricted to the realm of matter.

Matter and energy, according to the first law of thermodynamics, are interchangeable and are constantly being transformed from one form to the other. As electrons jump from one orbit to another around the nucleus of the atom, radiation is released, which can be measured on a spectroscope. Each chemical element has its own spectroscopic "fingerprint", which is produced by this characteristic pattern of radiation. Hubbard proposes that the energy released from such molecules of matter must permeate an entire solution. Thus, even if there is not a single atom of the original substance present in a highly diluted solution, the energy associated with this subatomic activity should be present in the solvent.

The above approaches have some implications that can be tested in a laboratory. If there is a patterning of the energy within the ultramolecular dilutions, these solutions should have physical and biological properties that differ from those of the solvent alone. In a series of experiments in the 1950's, A. Gay and J. Boiron demonstrated measurable differences between the capacitances (dielectric constants) of distilled water, and of sodium chloride dissolved in distilled water and carried through stages of dilution up to 10^{-60} . This study and the ones that follow are summarized in James Stephenson, MD., "A review of Investigations into the Action of Substances in Dilutions Greater than 1×10^{-24} (Microdilutions)" *Journal of the American Institute of Homeopathy* 48, no. 11 (Nov 1955): pp327-35, and quoted in *Homeopathy, Science or Myth?* (Bill Gray)

Highly diluted solutions (potencies) similarly have been shown to have effects in the biological sphere. In 1931, Paterson and Boyd showed that the Schick test can be altered through the administration of high potencies of either alum precipitated toxoid (APT) – used in conventional medicine in material doses to induce immunity- or by Diphtherinum, a homeopathic medicine prepared from a diphtheritic membrane. Of the subjects who originally showed absence of immunity (Schick positive), a significant number showed immunity (Schick negative) after administration of one of the potentized substances.

During the 1930's, W. Persson demonstrated that the rate of fermentation of starch by the enzyme ptyalin could be influenced by high potencies of mercuric chloride, and the lysis of fibrin by the enzymes pepsin and trypsin could be influenced by high potencies of a number of different substances. In 1954, W. Boyd, after fifteen years of retesting Persson's findings, reported that the presence of dilutions of mercuric chloride up to 10^{-61} had a highly significant influence on the rate of hydrolysis of starch by the enzyme diastase, with the potentized mercuric chloride stimulating the process.

Similarly, other investigators have shown that highly diluted solutions can have an effect on the rate of growth of the mycelium of fungi, the rate of germination of barley and wheat germ, the transmission of nerve impulses in the human being, the physiological processes in animal organs, and the inheritance of genetically determined tumors in the fruit fly.

More recently, much research is being carried out on the properties of water as the main medium used in the preparation of highly dilute homeopathic medicines. Jacques Benveniste, at the University of Paris, stated that water has a 'dipole' (magnetized) molecular structure and this water molecule, either in the form of a water-alcohol mixture or saline solution, is capable of storing the electromagnetic information of a substance.

Paul Callinan, of the Antarctic Engineering Department, Melbourne University (Australia) stated in a research paper (1984) that in the process of dilution and succussion of a medicinal substance, the curative information inherent in the drug molecule is transferred to the molecules of the solvent – the water. These water molecules have been through the potentisation process and

have become more stable and able to accurately reproduce the data received from the medicinal substance.

In other research the structure of water has been found to alter dramatically in high-potency homeopathic remedies. Nuclear magnetic resonance methods suggest that the vehicle (water) changes in its physical characteristics. German researchers suggest that photons (light particles) are involved in causing these changes.

The enigma of how homeopathic medicines work is far from being resolved. I firmly believe that the main reason for this, is the fact that the 'tools' currently available are not appropriate. To put it simply, just as one cannot measure light by using weighing scales, current methods may not be appropriate to study and assess homeopathy.

CLINICAL STUDIES ON THE EFFECTIVENESS OF HOMEOPATHY- DIFFICULTIES AND DEBATES

The main method currently in use in clinical research is the **Double-blind Controlled Clinical study**. This method, considered to be the 'gold' standard for clinical research, attempts to control bias which might lead to false results. However it poses two primary limitations when used to study homeopathy.

The first is that homeopathy does not use one single homeopathic medicine to treat a disease. The entire principle of homeopathy is to use different medicines individualized to the patient, not the disease. The choice of treatment depends only on the similarity of the diseased state to a medicine that will produce the same symptoms in healthy persons.

This objection can be overcome by comparing methods. The method of homeopathy (rather than specific homeopathic medicines) can be compared to placebo or other treatments. A drawback of this tactic, however, is that it often requires a larger number of patients to prove the thesis.

A second and more difficult problem arises because of the different methods used by medical doctors and homeopaths in determining their patient's progress. Whereas the medical doctor uses diagnostic tests, which are largely objective quantified findings at the physical and functional levels of the patient, the effectiveness of the homeopathic medicine must be measured by the effects on the **whole** person – the mental and emotional aspects of which are harder to quantify. For example, in a study in which the homeopathic method is being tested against placebo in arthritis, some patients will have significant mental/emotional pathology which will need to be cured before the arthritis is to improve.

Homeopaths monitor the progress of a patient by looking at the general feeling of health and then at changes in symptoms according to a hierarchical model of the organism based on Hering's Law. According to the homeopathic model of the human organism, the most vital, innermost part of man is reflected precisely by this general feeling of health. Just as one may feel a generalized, vague malaise before one succumbs to an acute disease - what is sometimes referred to as 'subclinical infection', it is at this level that homeopathic remedies act first.

Constantine Hering (1880-1879), a German medical doctor and homeopath, observed that, as the imbalance in the vital force, (which is responsible for the general sense of well being) is resolved at the deepest level, the disease moves outward, manifesting itself in temporary disturbances in the physical sphere and moving from more important to less important organs – the Direction of Cure. Hering's law gives the homeopath a criterion for monitoring the progress of a case, for it evaluates the patient as a whole, and assigns laboratory values, mental state, physical pathology, and functional symptoms their relative importance. Laboratory values may be normal, but the patient may still be symptomatic; or, laboratory values may remain slightly beyond the normal range, and the patient may be cured.

We come back to a difficulty already mentioned before. In this case I will borrow words by D.Mastrangelo and C. Lore' – Are we trying to investigate galaxies with microscopes (or cells with telescopes)?

Homeopathy requires a study design in which the clinical outcome measure reflects the whole person approach to healthcare that typifies homeopathy. Until then, to apply the present research methods in use for homeopathy one requires pretty uncomplicated diagnoses, large samples of patients, and lengthy observations. As might be expected, funding for such studies can be hard to acquire in a climate of bias against medicines diluted past the point of any of the original molecule remaining. Nevertheless some very provocative studies have been done and have found their way into peer-reviewed scientific journals.

Recovery in alcoholics and addicts: In a study run by Dr. Susan Garcia-Swain, a homeopathic MD, 703 patients were divided into 3 groups: one receiving a homeopathic medicine prescribed individually by Dr. Garcia-Swain, the second receiving placebo in an identical bottle indistinguishable from the medicines by either patient or doctor, and a third control group receiving no medicine at all. The medicine was prescribed as a single dose within 24 of admission for detox. The rest of the treatment followed standard medication and psychotherapeutic methods given to everyone at the treatment centre.

After discharge at 30 days, the patient population was followed for 18 months of aftercare with an exceptional compliance rate of 96%. At 18 months results showed that the relapse rate in the homeopathic group was 32%, compared to 68% for the placebo group and 72% for the control group, which was highly statistically significant ($p < 0.005$). (Garcia-Swain S, *Thesis for Hahnemann College of Homeopathy* (1997))

An important study demonstrating the effectiveness of homeopathy in **migraine** headaches was carried out by Brigo and coworkers. A randomized double-blind study was carried out using 60 patients. The frequency, intensity and characteristics of the pain symptoms were measured. When results were compared they were found to be 'distinctly and significantly better in the homeopathic group compared to placebo'. (Brigo B. and Serpelloni, *Berlin J. Res. Homeopathy* 1(2):98 (1991)). This study was praised in both homeopathic and non-homeopathic literature as overcoming the

usual difficulties in homeopathic research by the carefully designed experimental protocol.

A double-blind study evaluated response to **pain in dental extraction** and subsequent neuralgic pain. The remedies Arnica and Hypericum were prescribed alternately at 4 hourly intervals to 30 patients, while another 30 patients were given a placebo. As the response to such a dental procedure is rather uniform it is possible to use these two remedies in all patients. 76% of the patients treated homeopathically experienced pain relief compared to only 40% in the placebo group (Albertini and Goldberg, *Found. Franc. Rech. Homeopath*, Lyon p75(1986)).

In a study by Zell et al, (*Fortschr. Med.*(1988)), an ointment made of 14 different homeopathic medicines (nonclassical approach) was used to treat **sprained ankles**. In 24 of the 33 patients treated (77%) were pain free on day 10, compared to 13 of the 36 on placebo (36%). In 1991 Thiel W. and Bohro B., *Bio. Medizin* 20.506 (1991)) the same combination of remedies was used as an intra-articular injection in patients with traumatic bleeding into joints. A significantly reduced healing time was reported in the treated patients compared to those injected with placebo.

Remedies in childbirth: In a double-blind controlled study done in 1987 (Dorfman et al, *Cah.Biother.*94:77(1987))

‘In Science there is no place for dogmas. The scientific researcher is free to ask any question, question any proposition, search for any proof and to correct any fallacy. Whenever science was used in the past to develop a new dogmatism, such dogmatism in the end proved irreconcilable with the advancement of science; and ultimately the dogma was broken down, or else science and freedom passed away together’

JR Oppenheimer
The Open Mind, 1955

a combination of remedies in 5c potencies were given twice daily throughout the ninth month of gestation. The efficacy of homeopathic treatment was dramatic. The duration of labour was reduced (5.1 vs 8.5 hrs, $p < 0.001$) and so was the percentage of dystocia (11.3% vs 40%, $p < 0.01$).

In another study were Caulophyllum 7c was administered during the active phase of labour in a group of healthy mothers, the duration of labour, defined as the period of cervical dilatation, was significantly reduced in treated women (227mins vs 314mins) as compared to a group of labours retrospectively selected by the

same criteria (Eid P. et al. *Brit. Hom.J.*82:245 (1993)). This result was confirmed a year later in a double-blind trial. (Eid P et al. *Proc. V Congr.OMHL., Paris*, 20-23 (1994))

Statistically significant results were also obtained in various studies on homeopathic medicines used in influenza (Ferly JP et al, *Brit.J.Clin.Pharmac.* 27:329 (1989)), hay fever (Reilly DT, *The Lancet*, p881-885 (1986)), asthma (Reilly DT, *The Lancet*, 334:1601-06 (1994)). These and the above trials are quoted in *Homeopathy, Science or Myth?* (Bill Gray MD. 2000) A multitude of trials also may be accessed through the internet.

Another form of research, used to measure the efficacy of homeopathic medicines, is the **Comparative Clinical study**. One such study was carried out between 1968 and 1970, in English factories and offices, comparing the results of conventional and homeopathic treatment of influenza. The purpose of this survey was to determine the effectiveness of the homeopathic medicine Influenzinum, prepared from the influenza virus current at the time. Patients under the care of conventional medical doctors did not receive the homeopathic medicine, and 19.7% of them contracted the flu. Among the patients who received the homeopathic remedy, only 6.5% came down with flu. Furthermore, the number of working days lost by patients under conventional medical care was 8.5times greater than those lost by homeopathic patients. This seems to indicate that the homeopathic patients who did become sick recovered considerably more rapidly thanks to the partial immunity conferred on them by the Influenzinum homeopathic medicine. (D.H.Livingstone et al., *Homeopathy* (November 1970)).

In London in 1854, during a severe cholera epidemic, the facilities of the London Homeopathic Hospital were turned over completely to the treatment of cholera victims. The death rate in this hospital was only of 16.4% in all true cholera cases, compared with a death rate in other hospitals of 51.8%. (Margery G. Blackie, *The Patient, Not the Cure* pp 109-110 (1976))

In the last 15 years or so, techniques of statistical analysis have been developed to study across multitudes of studies – **Meta-analysis**. The results from such studies applied to homeopathic clinical trials, have come up with controversial reports. The *Lancet* published two papers in 1994 (Reilly et al, *Lancet*, 344) and 1997 (Klaus et al, *Lancet*, 350) reaching the conclusion that homeopathy is more effective than placebo. In 2005 Shang et al (*Lancet*,366), using the same arguments and methods, reached the conclusion that ‘homeopathy was no more effective than placebo’. The discrepancy may be understood if one examines more carefully the inclusion criteria applied in choosing which trials to be used in the meta-analysis. Therefore, although meta-analysis may seem to be a good method to measure the effectiveness of homeopathy, it is open to bias.

THE PLACEBO EFFECT VS HOMEOPATHIC CURE

Critics of homeopathy have consistently claimed that any observed effects of homeopathic medicines on the patient must be a placebo effect. When confronted with this argument homeopaths refer

to the evidence of successful homeopathic treatment in children and animals. In both cases, the influence of suggestion is highly unlikely. I will quote but three of numerous interesting studies on animals and children.

Otitis media in children: In a prospective study one homeopathic and four conventional (allopathic) ENT practitioners observed 131 children of between 6 months and 11 years of age. The homeopathic group received single remedies, whereas the allopathic group received nose drops, antibiotics, and/or antipyretics. The main outcome measures were duration of pain, duration of fever, and the number of recurrences after one year. Secondary measures were improvement after 3 hours, audiometry, tympanometry, and necessity for additional therapy.

For duration of fever, the median was 4 days in the homeopathic group and 10 days in the allopathic group. Relief from pain itself was 2 days for the homeopathic group, and 3 days for the allopathic group. Recurrences were reported for one year. The homeopathic group showed 70.7% free of recurrences, while 29.3% had a maximum of 3 occurrences. In the allopathic group, 56.5% were free of recurrences, while 43.5% had a maximum of 6 recurrences. No permanent sequelae were noted in either group. (Friesen KH. et al. *Intl. J. of Clin. Pharm. Therapeutics*, 35 (1997))

Clinical experience is uniform in homeopathic practice that otitis media can be treated successfully, without danger of hearing loss.

Childhood Diarrhoea in Nicaragua: Jennifer Jacobs, a homeopathic MD, with a Masters in Public Health, did a landmark study on 81 children, ages 6 months to 5 years, with acute diarrhoea in Leon, Nicaragua (July 1991). Treatment was with standard support of IV fluids and either homeopathic remedies or placebo.

Actual remedies were randomized by the pharmacy into identical bottles. Patients took a dose with every liquid stool until the diarrhoea stopped. The number of stools and length of time were recorded meticulously. At the end of the study, the groups were unblinded and results were compared by standard statistical methods.

Results were as follows: "The treatment group had a statistically significant ($p < 0.05$) decrease in the duration of diarrhoea, defined as the number of days until there were less than three unformed stools daily for 2 consecutive days. There was also a significant difference ($p < 0.05$) in the number of stools per day between the two groups after 72 hours of treatment" (Jacobs J., *Paediatrics*, 93:719-725 (1994)).

Data in this study were striking, well beyond being random chance. The remedies used were properly individualized by homeopathic standards, the methods used to quantify results met allopathic standards, and the acuteness of the condition allowed proper time for evaluation.

Perhaps the strongest argument against placebo effect is the evidence of homeopathy's efficacy in treating animals successfully (Trivieri et al., *Alternitive Medicine: The definitive Guide* (2002)). What follows is only one example.

Mastitis in cows A herd of pedigree Friesian cows was randomly split into two groups of 41. A homeopathic medicine made of *Streptococcus*, *Dysgalactiae*, *Agalactia*, *E. Coli* and

Staphylococcus aureus was given in the 30c potency to the test group, and the other receiving placebo delivered to the water trough in coded bottles. 10 of the cows receiving the placebo developed mastitis while only 1 of the group treated with the homeopathic remedy did. (Day C, *The Brit. Hom. J.* 75:11-14 (1986))

The fact that a placebo may have a curative effect – the placebo effect – is a well known and accepted fact in conventional medicine, even though it is mysterious and unexplainable. Ironically, homeopathy, which has survived 200 years of 'testing' in clinical practice, is discounted on the fact that it is unexplainable.

As Domenico Mastrangelo and Cosimo Lore' succinctly wrote: "Any open-minded physician should reasonably welcome new treatments such as homeopathy, which show effectiveness and lack of toxicity'. The effectiveness and safety of homeopathy is demonstrated beyond any reasonable doubt by the number of patients resorting to it – around 500 million worldwide - and the countless cures reported worldwide for about two hundred years, with no side effects. (Trivieri L et al. *Alternitive Medicine, The Definitive Guide. Berkeley* (2002))"

As for me, the best proof is, in my own experience, through my practice. After all, the proof of the pudding is in the eating.

Anyone for pudding?

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Family Doctor

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