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# The Controversy Over the “Memory of Water”

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For a very long time, the idea of the “memory of water” tantalized not only the homeopathic community, but also serious scientists and researchers like Luc Antoine Montagnier, a recipient of the Nobel Prize. This misconception originated from an experiment conducted by the famous allergologist, Dr. Jacques Benveniste. He claimed to have shown in an *in vitro* experiment that highly dilute potencies of bee poison (*apis mellifica*), even beyond the Avogadro number, are capable of producing **structural** changes in living organisms in the same way that the real poison from the bee can bring these changes about, being the actual degranulation of basophils. His paper was published in *Nature* under an obligation to prove his findings in front of a scientific committee in his own laboratory. Benveniste could not reproduce the results that his team was claiming. When a similar experiment was repeated by a different group of scientists and filmed by the BBC, it also failed. While it was obvious that the experiment was proved to be false, the scientific community concluded, by an extension of logic, that since the experiment was false, therefore homeopathy must also be a false system of therapy. Despite the fact that the experiment was repeatedly invalidated, some scientists, especially in the homeopathic community, continued to believe that Benveniste’s findings were true. In this way, the scientific community remains in confusion as to whether: a) water has memory, or b) homeopathy is or is not a valid system of therapy. Since I have been an eye-witness of these events from their very beginnings, I am giving an account of the real story for both the homeopathic community and the sceptics.

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## The Controversy Over the “Memory of Water”

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A long time has elapsed, over 20 years in fact, since the time of the Benveniste’s experiment, but still, this peculiar story of the “memory of water” tantalizes the scientific and homeopathic community.

The now deceased Dr Jacques Benveniste [1], a famous French professor of immunology, claimed to have shown in an experiment that highly dilute potencies of homeopathic remedies, even beyond the Avogadro number, are capable of producing **structural** changes in living organisms (cell cultures, in this case [2]).

In other words, he claimed to have definitively shown through his experiment the effectiveness of the homeopathic high potencies [3].

The Benveniste experiment was proved to be false.

Despite the fact that the experiment was invalidated, some in the homeopathic community continue, even today, to believe that his findings were true.

The idea of the “memory of water” tantalizes even serious scientists like Luc Antoine Montagnier [4], a French virologist and recipient of the Nobel Prize [5].

The Benveniste experiment which, shortly after the release of its findings, were proved false by a scientific committee sent by the international scientific journal *Nature* to his laboratory, damaged the reputation of homeopathy more than any other event in homeopathy’s long history. The reason being that many of the most vicious subsequent attacks on homeopathy have been based on this false experiment, which has been perpetuated and ridiculed by journalists and sceptics based on the idea that water has memory [6–22].

Therefore, we encountered a strange situation whereby a true and effective healing methodology was invalidated by the sceptics because of a false experiment!

I believe that, as I was an eye-witness of these events, I should give an account of the real story for both the homeopathic community and the sceptics.

### Here are the facts

In 1988, Temple University of Philadelphia organized a meeting of scientists on the Bermuda Islands to conduct an open discussion on issues that pertained to the “borders” of science. All the delegates were highly reputed professors; some

were also Nobel Prize laureates. Benveniste was invited to the meeting, as well as myself.

The theme of that meeting was “Frontiers of Science”. Some delegates presented new ideas from their research. Benveniste spoke on his “incredible” findings in relation to micro-dilutions, meaning the high potencies of homeopathy, beyond the Avogadro number. I was the only delegate who could understand what he was talking about, so I was the only one amongst all the delegates who could criticize his findings.

What he claimed in effect was that when you are stung by a bee, there are certain defense processes activated, one of which is degranulation of basophils. He then went further to claim that he discovered through his experiments in his laboratory that if the same substance (the bee poison) is diluted beyond Avogadro’s number, where not even one molecule of the poison exists anymore in the dilution, such a dilution can also cause **structural changes in the organism**, similar to the ones caused by the actual poison; namely, the degranulation of basophils!

It was obvious that Benveniste, not being a homeopath, did not understand what a high potency of a remedy can or cannot do. Probably his false concept originated from a misunderstanding of the basic laws of homeopathy. Not only was he not a homeopath, but no-one in his team was a practitioner of homeopathy.

A high potency can never bring about a **structural** change in the organism, like the one Benveniste claimed. In homeopathy, we use hundreds of poisonous substances, much more virulent than the bee sting, and **never** have we observed structural damage in a person. If we had such obvious proof of the action of high potencies, there would be no reason for discussing it today, because the proof of the action of high potencies would be self-evident.

From his unbelievable statement, there was huge amazement within the audience! His findings appeared to be really beyond the frontiers of science. As soon as he completed his presentation, I objected by saying that “your findings cannot be true according to the principles of homeopathy...”. As soon as I voiced my objection, Benveniste reacted with tremendous anger and indignation. I did not continue the argument, as he appeared to be deeply hurt.

The problem was that at the end of his talk, Benveniste pleaded with all the influential scientists present to exercise their influence so as to ensure that his paper would be accepted by *Nature*.

In the outer circle of observers, there was a professor of medicine and an expert in allergology, Zvi Bentwitch, from Hebrew

University, whom I knew from previous discussions on homeopathy. During the break, Prof. Bentwitch approached me and asked me to explain why I had objected to Benveniste's experiment. He also told me that he himself was involved in this experiment, having been asked to independently confirm Benveniste's findings through his own laboratory.

I explained to Prof. Bentwitch that if what Benveniste was saying was true, then all the remedies derived from poisons that we were using in homeopathy in high potencies could have a damaging effect causing structural changes in organisms in the same way all poisons do. He saw immediately the logic of the argument and confessed to me that he had tried to reproduce the results in his laboratory but could not see what Benveniste claimed to have seen under the microscope in his own laboratory. Prof. Zvi Bentwitch had invited Benveniste's technician to come to Israel and show them, under the microscope, the basophilic degranulation, but still they could not see the claimed effect. After our subsequent talk, which confirmed his findings, he withdrew from the experiment.

Shortly after this presentation, an article appeared in the press and on its front page was the news from the Congress in Bermuda saying that according to Benveniste's experiment, "water had memory"! The naming "memory of water" was actually the conclusion of the journalist, not of Benveniste, and this nonsense was destined to become later an object for ridiculing homeopathy.

In his original paper, Benveniste never mentioned the idea of the memory of water. In the meantime, those scientists present at the Bermuda Congress did finally influence the journal *Nature* to publish Benveniste's paper. *Nature* agreed to publish it on the condition that Benveniste would agree to show afterwards to a group of experts the results of his experiment under the microscope in his laboratory in Paris.

The expert team consisted of John Maddox, editor of *Nature*; Walter Stewart, an expert on science; and James Randi, a professional magician and an expert on fraud.

In his laboratory, Benveniste and his team repeated the experiment. When this committee looked under the microscope in Paris, they couldn't see any degranulation of basophils as Benveniste was claiming [23]. The fiasco was publicized aggressively by the media the next day [24]. The British Broadcasting Company (BBC) Television devoted a three-hour discussion to this unfortunate affair.

As was expected, this event resulted in a huge scandal amongst the scientific community of the time. Benveniste lost his position in the University, lost his laboratory, and, needless to say, lost his prestige, his financial support, and his reputation.

Despite these facts, many homeopaths and lay people, for some reason, continued to believe in the "memory of water". **The issue in the media since then became not one of whether high potencies had a curative effect on the sick, but whether water has or has not memory. Furthermore, if water did not have memory, then homeopathy was a false healing methodology!**

## The Continuation of The Ridicule

As a result of such ongoing beliefs and discussions, a second team of scientists, after a few years, astonishingly claimed that Benveniste might have been right after all. They claimed that they repeated the experiment and, surprisingly, it worked. Professor Madeleine Ennis [25] of Queen's University, Belfast, was one of the writers. This time the matter was taken up directly by the BBC, which, together with another team of scientists, along with Randi, took up the challenge and agreed to film what these scientists were claiming and again make it public in a BBC program.

This was a second disaster for homeopathy, as the investigating committee could not see any degranulation of basophils and, unfortunately, even greater damage occurred because the BBC made the results of the investigation known to the world for a second time in an infamous production of *Horizon* [26]. The conclusion of this program was that homeopathy is next to nonsense and that we should forget about homeopathy.

I immediately wrote a letter to the Chief Editor of the program explaining the situation as I knew it.

### **Here is the correspondence:**

To The Chief Editor of the Horizon Program  
Mr Matthew Barrett  
Room 4523  
BBC, White City  
201 Wood Lane  
London W12 7TS  
UK  
Alonissos, Greece, 27-9-2003

Subject: Horizon –Homeopathy- Randi

*Dear Mr. Barrett,*

*As one who has devoted his life to the teaching of Homeopathy, I watched with great interest the Horizon program on Homeopathy.*

*In 1988, I had the honour to participate in an international assembly of some of the leading conventional scientists, talking on "the frontiers of" science, which took place in Bermuda, organized by Temple University of Philadelphia. One of the participants of this meeting was Dr. Benveniste who presented his*

research. On this occasion, I did not hesitate to object strongly to his findings, on the ground that they contradicted the basic principles of homeopathy. According to these principles, a highly diluted and potentized substance will have an action **opposite** to its action in its undiluted state. Therefore, to use Benveniste's model, the highly diluted antigen, would be expected rather to **suppress** basophil degranulation, than **cause such a degranulation** (refer correspondence below: Re: Horizon on Homeopathy, George Vithoulkas – 2<sup>nd</sup> posting – 9 Oct 2003, 12: 06).

To give a simpler example, if a substance is taken in big enough quantity, it is able to create a set of symptoms, but in its high potency counteracts **these very symptoms**. So, the symptoms of a sting by a bee (an allergic reaction that causes degranulation) will be expected **to be reduced** by a high potency of the homeopathic remedy Apis Mellifica (coming from a crushed and potentized bee) but **could never produce such allergic condition of degranulation of basophils** as Benveniste claimed.

Unfortunately, Benveniste's research was published in the prestigious scientific magazine Nature, and therefore is still perpetuated by some scientists, causing more and more confusion to this important therapeutic modality.

The regrettable thing in this – excellent in execution – film, was that all the arguments against homeopathy were based **on a wrong assumption by Benveniste** and on dubious research, while it gave the impression of having been conducted in an objective and scientifically sound way when in fact it was based on a wrong assumption and with an inappropriate methodology.

But I could not see how the conclusion was drawn at the end of the film that 'homeopathy does not work' just because one experiment - based on a wrong assumption - failed!

To insist in not accepting a therapeutic system because of lack of understanding in its underlying theory, instead of appreciating its therapeutic results, seems to me quite hypocritical on the part of conventional medicine. Until a few years ago, we did not even know how aspirin worked, yet it was the most frequently prescribed drug in conventional medicine.

To give another example I could say that if the scientists who discovered electricity wanted **first** to know how this phenomenon was produced **before** they could use electricity, then most probably we would still be in darkness. It took hundreds of years to coin a theory: that it is movement of electrons, and even today we do not know the nature of any type of energy, let alone electricity.

Homeopathy uses a type of energy unravelled through the process of potentization (not through simple dilution as was hinted in the film). **The fact is that at this moment we do not have conclusive evidence of what is the nature of this energy.** Full

stop! But we define energy only as 'that which has the ability to produce some effect'.

**Homeopathy therefore must be accepted or rejected on its therapeutic effects alone.**

I do not know who suggested using the Benveniste experiment as something that would validate or disprove homeopathy. If it was Mr. Randi himself, I am afraid that he has done a disservice to humanity.

By your film, you have created a perception of homeopathy that will cause people to not consider a therapeutic method that otherwise would have been found to be very beneficial.

Yours sincerely  
Prof. George Vithoulkas  
Alternative Nobel Prize 1996  
Cc The Chief Editor of Nature

**My letter was given to the producer of the Horizon to answer and here is his response:**

Dear Prof. George Vithoulkas,

Thank you for your letter concerning the Horizon program on Homeopathy. Matthew Barrett asked me to reply as I was the producer of that program. I'd like to answer a few of the points you raise in your letter.

The key point we were making about homeopathy is not just that we don't know how it works, but that if it works it means that scientific understanding is fundamentally wrong in some important respects. For a high-potency homeopathic medicine to have a pharmacological effect our basic understanding of matter would have to be rewritten. Therefore, for homeopathy to work it is a necessary (but not sufficient) requirement that sub-molecular dilutions have some effect on biological systems. You are quite correct that this would not in itself prove homeopathy and that certain ultra-dilution effects might provide better evidence for homeopathy than others. However, we decided to give homeopathy the 'benefit of the doubt' and allow that any demonstration of an effect from a sub-molecular dilution would show that this scientific principle was wrong and so provide support for homeopathy (whether directly or indirectly).

We therefore sought advice (in particular from homeopaths) and were told that the Ennis experiments provided the most convincing such evidence. Therefore, it was this system that we used – and sadly were unable to replicate. We were not asking that anyone explain the mechanism by which sub-molecular dilutions have an effect, merely that they demonstrate that sub-molecular dilutions do have an effect.

*You say that homeopathy must be accepted or rejected on its therapeutic effects alone – and we showed in the programme claims of therapeutic effect of both clinical and anecdotal.*

*However, it is the opinion of the most scientists and many homeopaths that given the conflicting results of controlled trials that there will never be enough purely therapeutic evidence to convince science that homeopathy works. Therefore, it is vital that homeopaths are able to show in a reproducible experimental system that sub-molecular dilutions can have a biological effect. It appears that no such system yet exists.*

*Yours sincerely*  
Nathan Williams, BBC Horizon

### **Here is my answer to him**

Alonissos-Greece, 5-10-2003  
Mr Nathan Williams  
Producer of the Horizon Program  
Room 4523  
BBC, White City  
201 Wood Lane  
London, W12 7TS  
UK

Dear Mr Nathan Williams,

*Thank you for your reply.*

*It is a basic principle in homeopathy that in order to have an effect with a highly diluted and potentized remedy such a remedy **must fit the totality** of the symptoms of the patient. **It is a highly individualized therapy.***

*(What) were the 'symptoms of the cells' in the Benveniste experiment in order that the remedy would have shown some effect?*

*Since this aspect of Homeopathy was not respected in these experiments we cannot say that homeopathy was tested. **An "idea" was tested but not homeopathy.***

*This was the point I was making in my previous letter.*

*There is no meaning in this communication to go deeper in to the fallacies and complications of the Benveniste experiment. Suffice to say that if the blood cells were coming from an allergic – to the bees – patient, so you would have already in existence a 'sensitivity' between the remedy *Apis Mellifica* (coming from a crushed bee) and the diseased cells - then you might have observed some kind of reaction on the cellular level, but only in this condition and in no other and surely not of the kind of reaction described by Benveniste.*

*One has to take into account that homeopathy is the most difficult -in its application- therapeutic modality existing today. Its demand is universal, but the practitioners are not educated properly (since it is not taught in medical schools) and because of such demand a lot of charlatanism is injected into this therapeutic modality. So, anybody's reservations are justified to a certain extent.*

*I want to conclude this letter by saying that everyone is aware of the integrity of the BBC – and I am sure you will do something to balance the damage done so far to homeopathy with this film...*

*Sincerely yours*  
George Vithoulkas

After this reply, the matter went to the BBC scientific posting and was followed by various comments from a range of scientists.

### **Conclusions**

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The fact is that Benveniste's false experiment caused homeopathy to be attacked viciously by its enemies [27].

The misunderstanding was caused because of a superficial idea of the reporting journalist to say that water had memory.

Whether water has memory or not is not the issue, what is important to understand is why a **highly potentized remedy** has a biological effect on a sick organism.

It is well known in homeopathy that if you **simply dilute** a substance in water to such a degree as to have left no molecule in the solution, then this solution **will have no effect** whatever **on the human organism** - whether water has or has not memory. The effectiveness of the remedies comes **ONLY** if the solution is potentized (succussed) in serial potentiations. It is **ONLY** the potentization of the water that transforms the constituency of the water so as to attain the **biological effect** that the remedy has upon living organisms.

For all those knowledgeable in homeopathic principles, it would suffice to say that **only if** a high potency of a remedy fits the totality of the symptoms of a patient, then in such a case the remedy will eliminate those symptoms.

That is why in the proving of remedies, material doses were/are used to cause the toxic effects. High potencies will cause some subtle **functional symptoms and these only in some sensitive people**, but never structural changes like the degranulation of basophils.

What I was trying to say in the debates with the *BBC* and to the interested scientists is that you cannot condemn a healing method which is 200 years old that has an impressive record of cure just because someone had conceived and conducted a false experiment.

## Epilogue – The New Experiment

After these events, Mr. Randi, the magician, put up on his website an announcement saying in effect that if anybody could prove the action of homeopathic high dilutions, they will receive a prize of one million dollars that was standing in a dedicated bank account.

A team of ten Greek medical doctors and I took up this challenge and agreed on an experiment to prove that high potencies of homeopathic remedies were able to have a “biological effect” upon the human body.

In 2004, we signed a contract with Mr Randi and started to work on a protocol devised by a group of internationally reputed experts. After working for four years to arrange everything for such an experiment, including the cooperation of a Greek public hospital where the experiment would have taken place, when finally everything was in place and the experiment was to begin, Mr Randi suddenly **WITHDREW** from the agreement in a totally unacceptable manner. For those who are interested in reading the details of this story, please go to the following link: <http://www.vithoukas.com/clinical-trial-randi>.

If it is necessary to formulate a concept for the active principle in relation to potentized water, a much more meaningful and useful concept is this:

after a process of serial dilutions and potentiations, the water becomes **“biologically active”**, and this is the most important issue.

Whether the water has memory or not is totally irrelevant for homeopathy.

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