

A Revolution in Water Science?

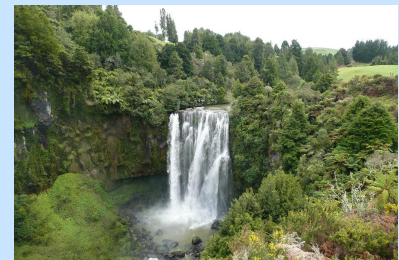
structure memory consciousness

Review of revolutionary themes at the *Physics, Chemistry and Biology of Water Conference 2017, Bulgaria*

Andrew Holster

Director, ATASA Research

Aotearoa New Zealand.



Te Kuiti Talks

30 Jan 2018

Part 1. Introduction.

The aim of this presentation:

- Describe a revolutionary movement in water science in progress.
- Relate this to the *Water Conference**, as the leading forum for an international research community advancing this movement.
- Discuss how this represents a genuine *scientific revolution*.
- (**The annual Physics, Chemistry and Biology of Water Conference, 2005-17, held in Bulgaria, founded by Professor Gerald Pollack*)

Part 1. Introduction.

‘Scientific revolutions’ do not happen every day – or every decade. They are major transitions in our understanding of the nature of the world. Distinguish between:

- ***Significant discoveries*** – *may change a field of research – but without changing basic concepts. (‘Normal science’).*
- ***Theoretical paradigm changes*** – *replace fundamental concepts in a field – but may not have wide impact outside.*
- ***‘Scientific revolutions’*** *are more profound – they impact sciences around them – and impact popular consciousness → change our metaphysical views of our place in nature.*

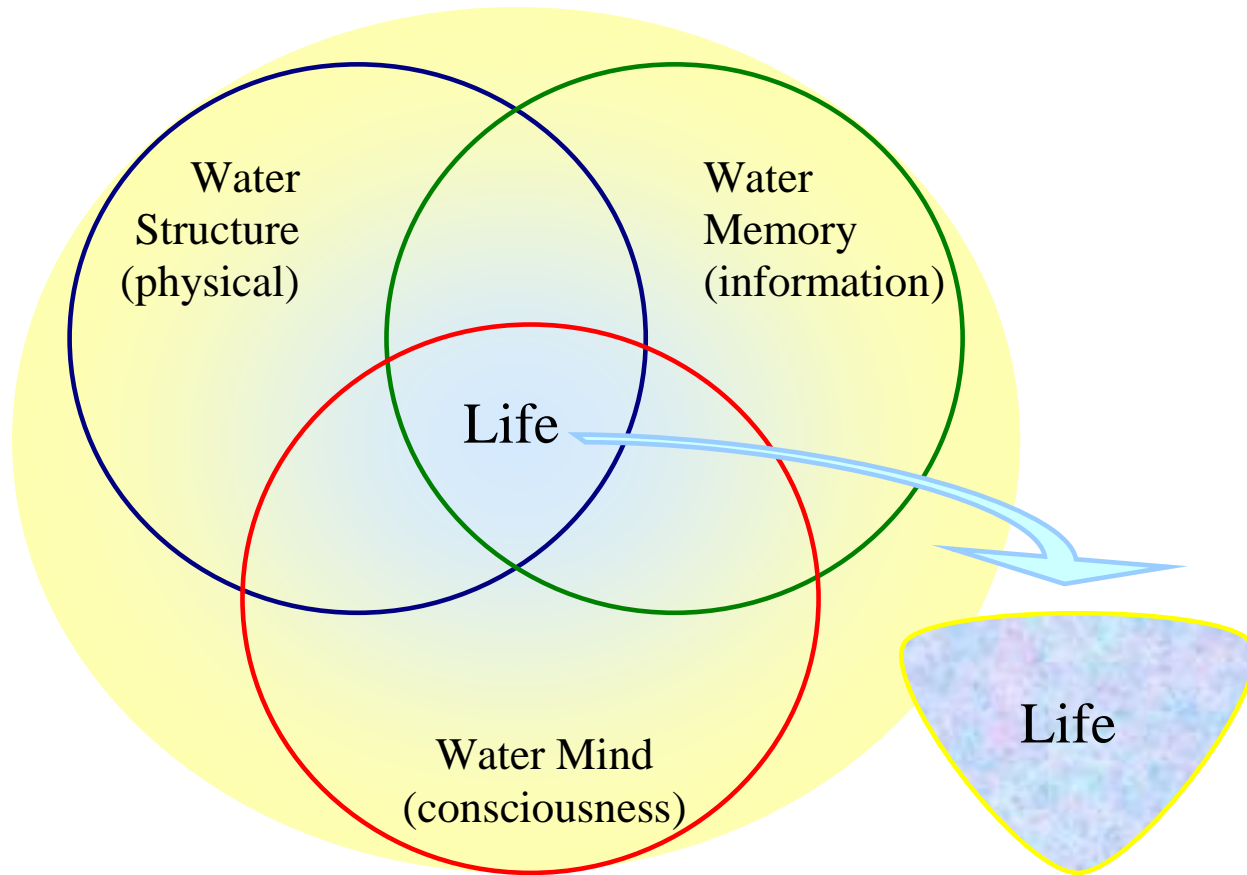
Is there a real scientific revolution happening in water science?

Identify three new *scientific paradigms* being advanced:

- **“Water structure”**: *liquid water supports organised structures, these confer properties essential to numerous physical, chemical and biological processes; unrecognised in conventional ‘bulk water’ scientific paradigm. [Gerald Pollack’s EZ theory is the leading example].*
- **“Water memory”**: *liquid water retains information of substances it has been exposed to – information imprinted in water structures is biologically active [Homeopathy – IC medicines: Benveniste, Montagnier, DST Fund - IC Medicines group].*
- **“Water consciousness”**: *(1) water can be affected by conscious intentions (PK effects) – (2) water has a key role in dynamics of consciousness. [Emoto – Psi experiments – conscious fields in water – quantum relativity – metaphysics of mind].*

Three core paradigm shifts

→ herald a larger revolutionary synthesis



*Scientific paradigm changes in
three key areas (analyse)*



*Metaphysical paradigm
change (synthesis)*

Recent focus on water in other areas also:

- **Water and environment:** water quality, pollution, aquifers, river ecosystems, ocean ecosystems, climate, sea levels, ...
 - **Water economics and politics:** water shortages, water as a commodity, commercialisation of household and irrigation water, water ownership, impact of droughts and floods, ...
 - These are important developments – but they refer to conventional understanding of the nature of water.
-

- Here we focus on the **fundamental nature of water** and how understanding of this is being challenged in a **revolutionary way – involving physics, chemistry, biology, mind.**

To evaluate the water science revolution:

- **Revolutionary claims:** what claims, theories and discoveries are being made?
 - **Revolutionary movement:** how is this revolution being advanced? Who is involved?
 - **Revolutionary progress:** how robust are the new theories and discoveries? Will they progress from ‘heretical science’ to established science?
-
- Turn first to the major international forum hosting this revolution: *The Water Conference*. Successful scientific movements need a community, networks, outlets, etc.

The Physics, Chemistry and Biology of Water Conference. (2005-2017).

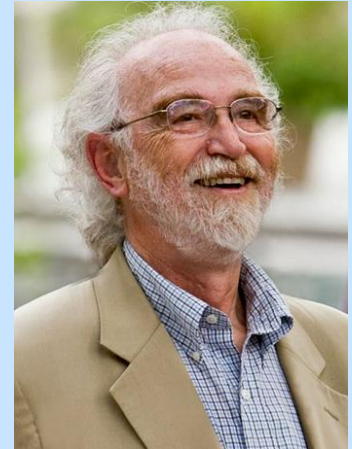
- The *Physics, Chemistry and Biology of Water Conference* was founded in 2005 by Professor Gerald Pollack as a forum for an independent water science community. **It specifically supports research into heterodox theories.**
- Had its 12th annual conference in 2017 in Sophia, Bulgaria. Estimated 500 primary water scientists; around 40,000 social media followers.
- Novel ideas in water science have a long history, ‘alternative theories’ appeared throughout the 20th century – but generally rejected by mainstream science paradigm.
- **Has become the leading forum for alternative fundamental research - including legendary and controversial figures.**

Water Conference: sponser message.

“The Physics, Chemistry and Biology of Water conference is held annually for 12 years now, as Bulgaria was the hosting country of the last four editions of the event. The conference is founded by Professor Gerald Pollack, a leading figure in the field of physics of water, a professor at University of Washington, a globally recognized scientist, director of the Institute for Venture Science.”

DST Fund, Evengy Germanov, Bulgaria-Russia

“Organizer of the event in Bulgaria is DST Fund - Bulgaria, an international non-profit association. Co-organizer from Bulgarian side is Global IC Technology Ltd. - a commercial organization. More about the conference can be found at: <http://www/waterconf.org>. For more information and interview requests, please contact M3 Communications Group, Inc., press@m3bg.com and tel. 02/818 70 10.”



Professor Gerald Pollack – Visionary scientist and founder of the Water Conference and the *Water Journal* and the *Institute for Venture Science*.

Character of the Water Conference

The Water Conference is a unique forum in science.

Independent conference outside the control and censorship of the academic science establishment.

Supported by some prominent scientists – senior figures at the 2017 conference were Gerald Pollack, Luc Montagnier (Nobel laureate, 2007) and Vladimir Voeikov, and other prominent researchers from universities and research institutes.

Explicitly emphasises a *revolution in water science*.

Supports a research community in alternative water research – a diverse group overall, but focussed on a number of core themes.

This conference represents a core community of ‘alternative water researchers’, and gives the best insight into the scientific revolution that is unfolding.

Character of the Water Conference

- Developed to provide an international forum for an independent water research community.
- In 2017 there were 31 research presentations (representing about 60 researcher authors); 50 poster presentations (technology); 200 participants.
- Mix of senior professors, younger academics, independent researchers, many medical and health specialists, entrepreneurs, and wider public community.
- Unique in encouraging open participation in scientific research – researchers from within and outside academia.
- A strong sense of solidarity and building an independent research community – participants return year after year, growing in number.

Range of presentations and topics:

- Presentations covered a wide range: measurement technology, applied technology, role of water in biological and chemical processes, computer modeling, quantum theory and nuclear physics, health and medicine, energy technology.
- This represents a concerted effort to advance *technology and experimental techniques, theories and concepts, and do experimental studies* – three key frontiers in advancing a scientific revolution.

2017 Conference Presentations (1):

- “A role of water in natural flight?” Gerald Pollack. University of Washington.
- "The role of water in DNA detection by PCR" by Luc Montagnier, MD, Claude Lavallée, PhD and Giuseppe Vitiello PhD. Fondation Luc Montagnier and Salerno University.
- “The water energy spectrum – biography of water” A. Antonov (Prof. Emeritus of South-West University, Blagoevgrad), A. Trifonov, M. Tabakov, A. Andonova (Risimanski Foundation), V. Penev (Risimanski Foundation).
- “Nonlocal quantum phenomena in macroscopic systems: 1k replication experiments with Electrochemical Impedance Spectroscopy in water” Serge Kernbach (Cybertronica Research, Germany), Boris Surinov (A. Tsyb Medical Radiological Research Centre, Russia), Anton Fedorenko (Moscow Institute of Physics and Technology, Russia), Marina Logvinenko (The Health Center “Harmony”, Bulgaria), Vlad Zhigalov (National Research University of Electronic Technology, Russia), Jeremy Pfeiffer (DST Foundation, USA), Gao Peng (ENNOVA Health Research Institute, China), and Evgeny Germanov (DST Foundation, Bulgaria, Russia)
- “Solvent Induced effects in Protein Folding and Protein Association” Arieh Ben-Naim, Hebrew University, Jerusalem, Israel.
- “Microwave and optical bioelectrodynamics at the nanoscale and molecular level” Michal Cifra, Institute of Photonics and Electronics, Czech Academy of Sciences.
- “ANOMALOUS ‘LIVING’ SPECTROGRAPHIC CHANGES IN WATER STRUCTURE” James DeMeo, Director, Orgone Biophysical Research Lab, Ashland, Oregon, USA.

Conference Presentations (2):

- “Iterative procedures to highlight the formation of molecular aggregates of water molecules in pure perturbed water” Vitorio Elia, Dept. of Chemical Sciences, University "Federico II" of Naples, Italy.
- “Investigating Water Functionality” Everine van de Kraats. Presented work was performed at ViaLight Research, Amersfoort, The Netherlands.
- “Hydrophilic and hydrophobic interactions: from materials to living cells” Francesco Zerbetto. Dipartimento di Chimica, Università di Bologna, V. F. Selmi, Bologna, Italy.
- “Water on an inorganic surface” Thomas Greber, Physik-Institut, University of Zürich, Switzerland.
- “Sulfur, water, and light: the golden threads that weave our health together” Greg Nigh. Immersion Health, Portland, Oregon.
- “INTERFACIAL AND DANGLING WATER AS A ‘HYDRATION FINGERPRINT’ IN NORMAL AND CANCEROUS HUMAN TISSUE” Abramczyk H., Brozek-Pluska B., Kopec M. Lodz University of Technology, Faculty of Chemistry, Laboratory of Laser Molecular Spectroscopy, Wroblewskiego, Poland.
- “Changing Water Properties With Lasers, Magnets, Crystals, Geometry and Conscious Intention” Robert M. Haralick. Graduate Center, City University of New York.
- “EM treatment effects on water transport in a plant: explanatory challenges” Andrew Holster, ATASA Research, NZ.
- “The quest for biofield” Igor Jerman, Bion Institute, Ljubljana, Slovenia.

Conference Presentations (3):

“Analysis of Structural Properties of Water with Electrophotonic Imaging Technology”
Konstantin G. Korotkov, Dr., Professor, St. Petersburg University ITMO, St
Petersburg Research Institute of Physical Culture.

“Protein structural dynamics and interactions modulated by infrared light.” Magdalena
Kowacz, Piotr Warszyński, Jerzy Haber. Institute of Catalysis and Surface
Chemistry, Polish Academy of Sciences, Krakow

“Water in Western and Chinese Culture - A Comparative Survey” Dr. Manfred Kubny
(Germany) Horst-Görtz-Stiftung, 61267 Neu-Anspach, Germany. St. Leonards
Akademie gGmbH, 10623 Berlin.

“Regulation of glycolytic oscillations by the dynamics of intracellular water” Henrik S.
Thoke^{1,2}, Sigmundur Thorsteinsson² Roberto P. Stock¹, Luis A. Bagatolli^{1,3}, and
Lars F. Olsen^{1,2} ¹ Center for Biomembrane Physics (MEMPHYS) and ² Institute
for Biochemistry and Molecular Biology, University of Southern Denmark. ³
Yachay EP and Yachay Tech, Yachay City of Knowledge, Ecuador.

“WATER COHERENCE DOMAINS REVISITED” Mark Henry, Université de
Strasbourg, Strasbourg.

“An Introduction to Primary Water” Mark Burr, CEO, Primary Water Technologies LLC.

“A new look at memory and morphic resonance” Oschman, J.L. Nature’s Own Research
Association, USA.

Conference Presentations (4):

- “UV + WATER, A DESIGN FOR A NEW CLEAN ENERGY FRONTIER” Pedro Flecha, Illatec Study Group*, Lima, Peru.
- “Effect of magnetic rotator on the exclusion zone of water” Quansheng Ren, School of EECS, Peking University.
- “Aquaphotomics as New Technology for Water Measurement and Understanding” Roumiana Tsenkova. Kobe University, Japan.
- “WATER AND THE MYSTERIES OF HUMAN METABOLISM” by Frank Suarez, Obesity and Metabolism Specialist.
- “ELECTROCHEMICAL DETERMINATION OF DIFFUSION COEFFICIENTS: OBSERVATIONS AT TISSUE MATRIX BARRIERS AND MAJOR ANOMOLIES IN CONSTRAINED CHANNELS.” Adatia K, Raja M.A.A, Vadgama P. School of Engineering and Materials Science, Queen Mary University of London, UK.
- SHOULD THE NEW EVOLUTIONARY SYNTHESIS ACKNOWLEDGE “MEMORY OF WATER” AND THE TENDENCY TO SELF-ORGANIZATION OF AQUEOUS SYSTEMS? Voeikov, V.L., Bouravleva E.V. Lomonosov Moscow State University, Faculty of Biology, Moscow, Russia.
- ACCELERATED DEACTIVATION OF WATER SOLUTIONS OF REACTOR RADIONUCLIDES BY TRANSMUTATION TO STABLE ISOTOPES IN GROWING MICROCULTURES (PREHISTORY, EXPERIMENTS, THEORY, PERSPECTIVES) Vysotskii V.I.1, Kornilova A.A.2 1Kiev National Shevchenko University, Kiev, Ukraine. 2 Lomonosov Moscow State University, Moscow, Russia.
- “Water memory leads to science of new paradigm beyond materialism” Won H. Kim. Department of Biochemistry Yonsei University Wonju College of Medicine, Wonju, 16 Kangwondo, Korea.

Revolutionary theme of the water conference is its striking feature.

- The idea that a scientific revolution is in progress is openly emphasised and discussed, with some conference talks specifically on this theme. E.g. Kim and Voeikov.
- Presentation by Vladimir Voeikov, illustrated next, discussed connection between a revolution under way in *evolutionary science* with the revolution now under way in *water science*. Voeikov sees the synthesis in a larger revolution in ‘life sciences’.



Vladimir Voeikov
Russian Academy of Science, St. Petersburg. Visionary synthesis of biology, chemistry, physics, mind → Life.

Connected Revolutions in Evolutionary Theory and Water Theory

Voeikov, V.L., Bouravleva E.V.

Lomonosov Moscow State University, Faculty of Biology, Moscow, Russia;

“SHOULD THE NEW EVOLUTIONARY SYNTHESIS
ACKNOWLEDGE ‘MEMORY OF WATER’ AND THE TENDENCY
TO SELF-ORGANIZATION OF AQUEOUS SYSTEMS?”

“There are many indications that with the advent of the XXIst century two long awaited revolutions in life sciences are coming. One of them is the cardinal revision of the mechanisms of biological evolution. Another revolution comprises comprehension of the fact that living matter represents aqueous systems, and that all its properties are defined by the peculiar properties of water no less than they are defined by the properties of other chemical substances (Albert Szent-Gyorgyi: “Life is water dancing to the tune of solids”).”

Revolutionary water science:

- Voeikov's talk emphasizes that water science has a deep connections with other fields (evolution, biology, medicine, ...) and a broader revolutionary synthesis in 'life science' in progress on multiple fronts.
- But here I focus on distinct scientific claims being made about the nature of water itself.
- I break it down in 3 main strands:
 - Water structure
 - Water memory
 - Water consciousness

Part 2. The three paradigm shifts

We now review three
'revolutionary paradigm shifts'
being advanced.

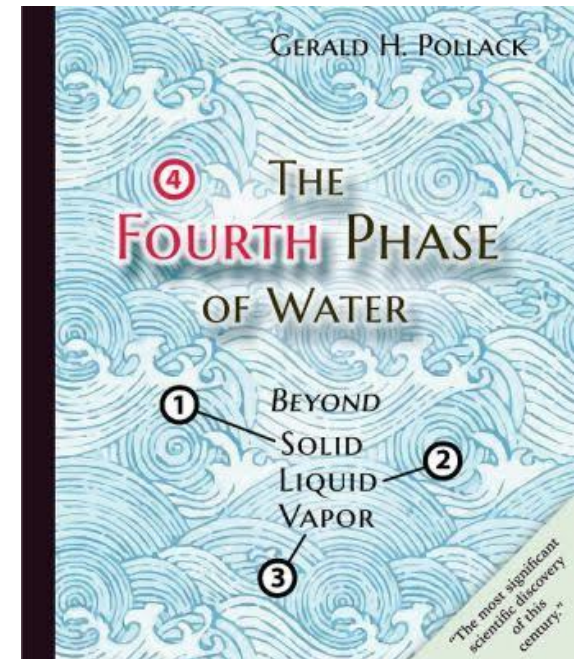
Three revolutionary strands:

- 1. *Water Structure:*** liquid water forms organised and self-organising structures on micro-scales to macro-scales; very different properties to bulk water; critical to common biological and physical processes. (Szent-Gyorgyi 1950's → Polywater, Derjaguin 1960's → EZ water, Pollack 2013).
- 2. *Water Memory:*** water retains information of substances it is exposed to; this can be read and transmitted as EM signatures; can be biologically active. (Benveniste → Montagnier, homeopathy → IC Medicines, “Informational Copies of Biologically Active Substances.”)
- 3. *Water Consciousness:*** conscious intentions have effects on water; consciousness is hosted in water. (Emoto – Yoga traditions – frequency interactions – psi – micro-PK effects – quantum reality – biofields – metaphysics of consciousness).

Revolution 1. Water Structure.

Iconic expression in EZ Theory

- The new paradigm of water structure has its iconic expression in EZ theory, presented in *The Fourth Phase of Water*, 2013, by Gerald Pollack – this consolidates a host of research.
- The revolutionary nature of this underpins the *Water Conference*, *Water Journal*, and *Institute for Venture Science* – initiatives by Pollack all fostering the idea that revolutionary science is still possible.
- This is Pollack's visionary contribution, and the reason he is held in such high esteem as a leader of the water science community.



Water Structure: Paradigm Shift

Bulk Water (orthodox): → ***Structured Water (new):***

Conventional theory for 100 years holds liquid water supports no stable structures – is in random thermodynamic chaos – osmosis, capillarity are explained by diffusion and inter-molecular forces – water is a passive solvent in bio-processes not an active energetic driver.

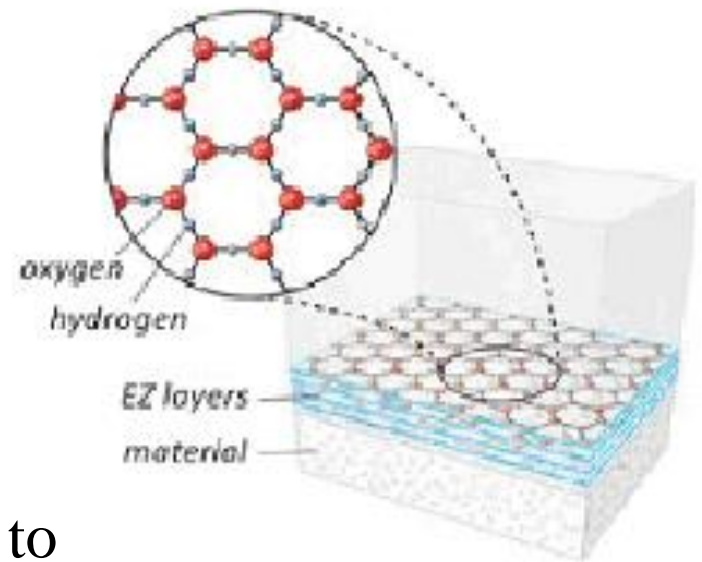
- Recognises H-bonded water networks, but only as weak transitory fluid structures.
- Many physical properties of water remain mysterious in conventional science – water is a highly ‘anomalous’ substance.

New Proposition: liquid water forms structures – at micro-scale to macro-scales – EZ theory proposes crystalline lattices with electrical bonds. Theory given in terms of known physical forces and entities. Claims:

- EZ structures drive numerous physical water processes, like osmosis, capillarity, freezing and melting, formation of bubbles to clouds;
- EZ structures are active in biochemical or metabolic processes - in living cells, blood circulation, water transport, protein interactions, muscles, etc.
- EZ structures are both self-organising, and store and provide energy.

Revolution 1. Structured Water (cont.)

- Pollack's EZ theory is the most successful synthesis of *water structure* concepts so far.
- Its first strength is that it gives a convincing *theoretical model* for a water micro-structure.
- It proposes liquid water forms into hexagonal latticed sheets – related to ice, but with a weaker bonding structure between sheets.
- This 'quasi-crystalline' structure sustains electric charge separation, and stores and releases energy – notable from radiation (IR light).



Pollack: EZ water structure

EZ structure: gives a natural explanations of diverse unexplained phenomenon.

Revolution 1. Structured Water (Cont)

- Its second major strength is empirical – it now has multiple lines of direct and indirect evidence, with numerous published research papers.
- It particularly focusses attention on processes in water adjacent to material surfaces (where EZ zones typically form) – and the active role of water in chemical and biological processes.
- And also focusses attention on the role of EM radiation (light and heat), storage of electrical energy in water, and energy exchange between water and the environment.
- It has huge implications in physical chemistry and biophysics and biochemistry and biology – it is opening new frontiers in these subjects – a forment of new work in these areas is seen at the water conference.

Revolution 1. Water Structure Summary:

Structured water represents a major scientific paradigm shift – and EZ theory has strong scientific credentials.

- It has strong empirical evidence and far-reaching implications.
- There are multiple experiments verifying EZ structures.
- It relates to numerous water properties and processes – including physical, metabolic and biochemical.
- Experiments and technology related to structured water was the most common theme of conference papers.
- I know of no serious evidence against it (as sceptics refuse to acknowledge it they present no serious criticism of it).
- **Implies failure of multiple conventional scientific explanations.**

Revolution 2. Water has a Memory.

2017 Water Conference was dedicated to memory of Jacques Benveniste (1935-2004).

- Leading French immunologist – in 1988 first his published experiments showing water retains ‘memory’ of substances it has been exposed to.
- Inquisition led by Sir John Maddox, editor of *Nature* and arch sceptic.
- Benveniste was excluded by the science Establishment, but continued work independantly.
- In 1997 founded *DigiBio* to "develop and commercialise applications of Digital Biology."



Jaques Benveniste

Benveniste: lost career for experiments supporting the concept of ‘homeopathy’.

Revolution 2. Water Memory (Cont).

“Benveniste was at the centre of a major international controversy in 1988, when he published a paper in the prestigious scientific journal Nature describing the action of very high dilutions of anti-IgE antibody on the degranulation of human basophils, findings which seemed to support the concept of homeopathy.

Biologists were puzzled by Benveniste's results, as only molecules of water, and no molecules of the original antibody, remained in these high dilutions.

Benveniste concluded that the configuration of molecules in water was biologically active; a journalist coined the term “water memory” for this hypothesis.

Much later, in the nineties, Benveniste also asserted that this “memory” could be digitized, transmitted, and reinserted into another sample of water, which would then contain the same active qualities as the first sample.”

Wikipedia, 2017.

Revolution 2. Water Memory (Cont).

Benveniste published further studies in 1997, 1999, 2000 claiming that *homeopathic solutions retain an electromagnetic signature that can be captured, digitalised, sent over phone lines or Internet, and transmitted to containers of water.*

‘Homeopathic solutions’ here means dilutions leaving no molecules of the original substance in the water – *not dilutions of homeopathic remedies*. His results offer a possible mechanism for homeopathy, but do not make claims specifically for *homeopathic treatments*.

He obtained US patents on systems:

Benveniste *et al.* *Method, system and device for producing signals from a substance biological and/or chemical activity*. United States Patent # US 6, 541, 978 B1, 2003.

Revolution 2. Water Memory (Cont).

Montagnier and colleagues took up this topic – improved Benveniste’s technology, and did new experiments, including *reconstituting DNA structures from homeopathic solutions*.

Montagnier L., Aissa J., Ferris S., Montagnier J.-L., Lavallee C. Electromagnetic signals are produced by aqueous nanostructures derived from bacterial DNA sequences. *Interdiscip. Sci.*, 1(2):81–90, 2009.

Montagnier L., Aissa J., Del Giudice E., Lavallee C., Tedeschi, A., Vitiello G. DNA waves and water. *J. Phys.: Conf. Ser.* 306, 2011.

Montagnier (Nobel laureate) was also attacked by the science establishment – now works partly in China.



Water Memory: Paradigm Shift

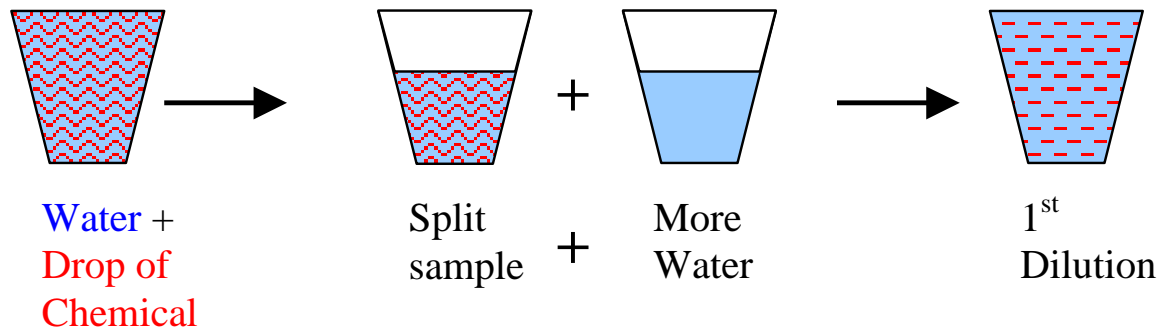
Inert Water (orthodox): → *Active Water (new):*

- Water is passive and chaotic – has no ‘memory’ or structure, carries no information.
- Chemical or biochemical effects are always produced by reactions with chemical substances.
- Homeopathic preparations contain no chemicals so cannot have effects.

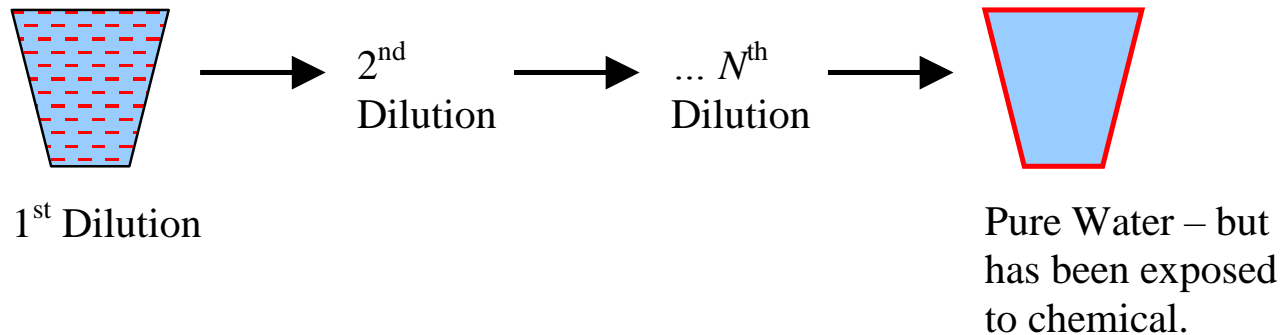
- Water is an active substance – has ‘memory’ and carries information.
- Chemical or biochemical effects can be produced by ‘virtual representations’ of chemical structures in water.
- Homeopathic preparations have physical effects – mediated by information.
- EM signatures of substances can be extracted from and transmitted to water.

Water Memory: Concepts (1)

Homeopathic solutions: repeated dilution process – of any substance, not homeopathic remedies.



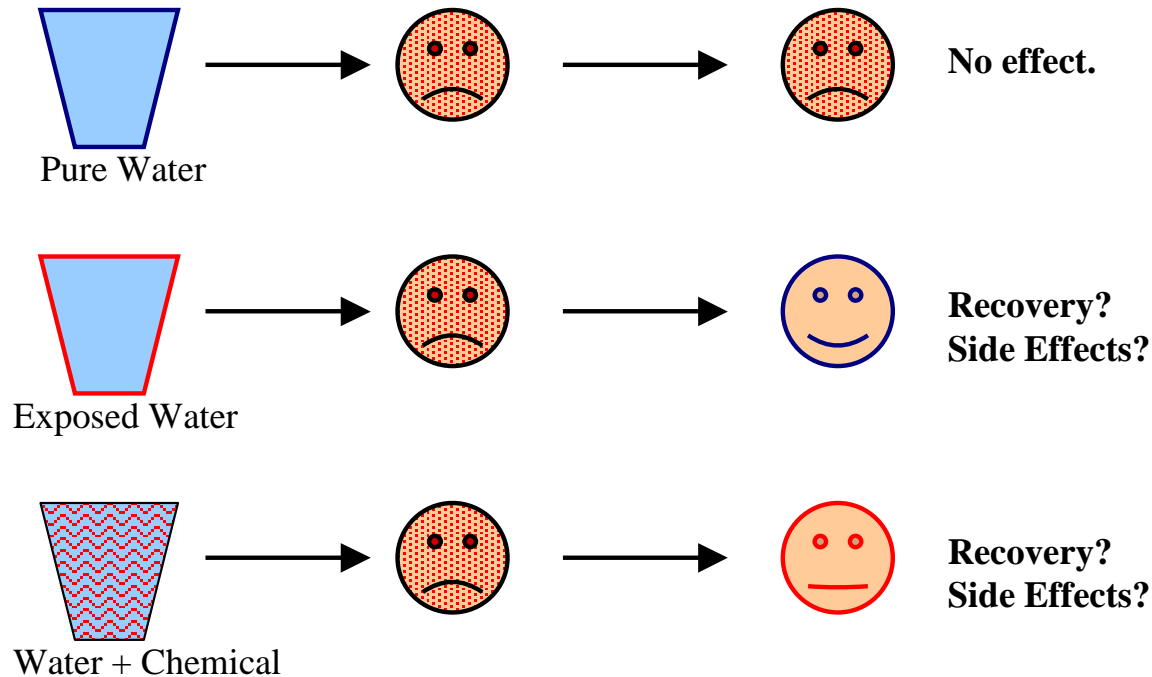
Repeat dilution multiple times → Until final ‘solution’ has no molecules of chemical.



Water Memory: Concepts (2)

Homeopathic solutions: measuring properties.

(A) Clinical trials on live subjects - people or animals

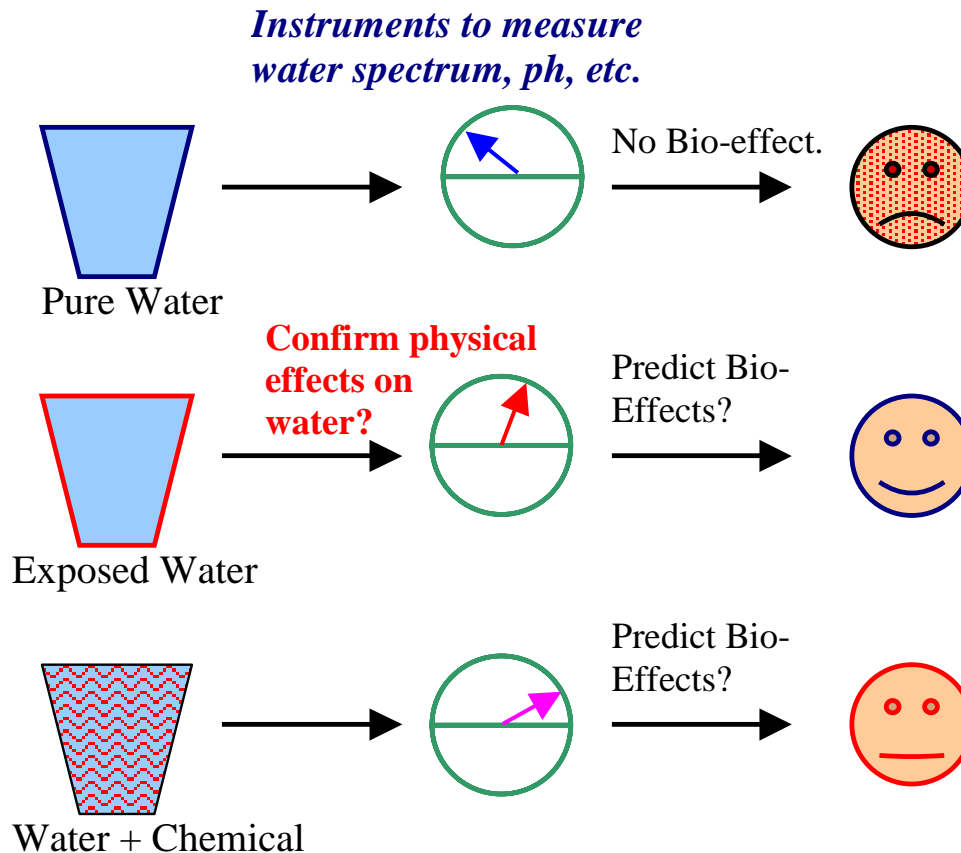


Clinical trials are difficult – and do not reveal water properties directly. What is happening to the *water*?

Water Memory: Concepts (3)

Homeopathic solutions: measuring water properties.

(B) Measuring water properties directly.



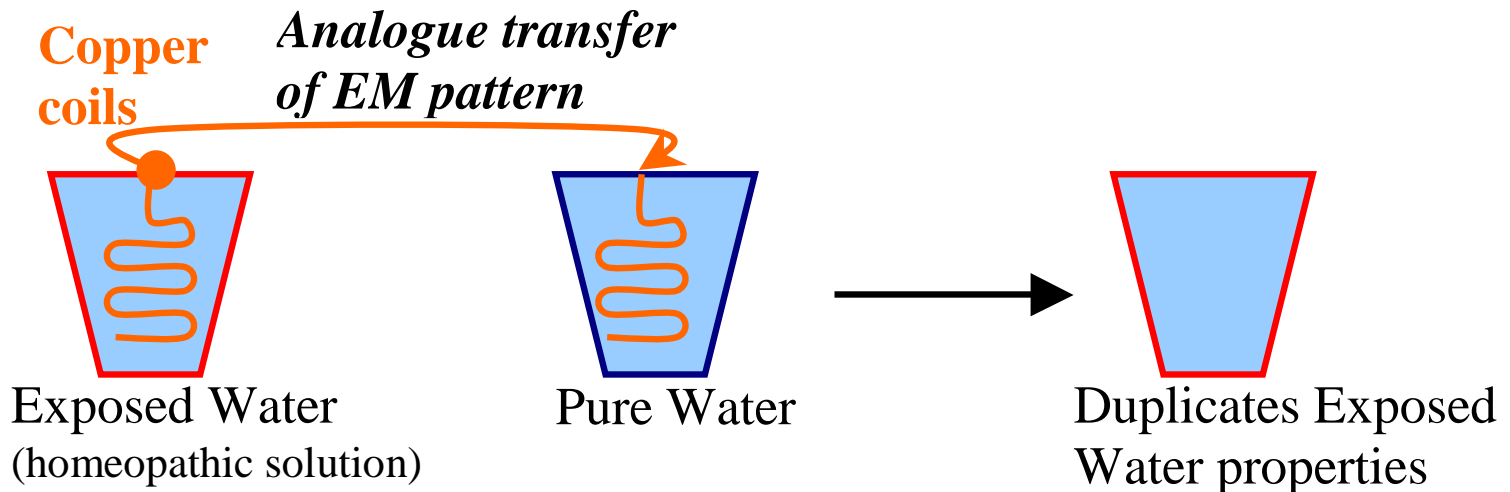
Instruments sensitive enough to measure effects are a recent development.

Some of these were described and showcased at the Water Conference.

Water Memory: Concepts (4)

Direct transfer: Informational copies of BAS

(C) Transferring information properties directly.

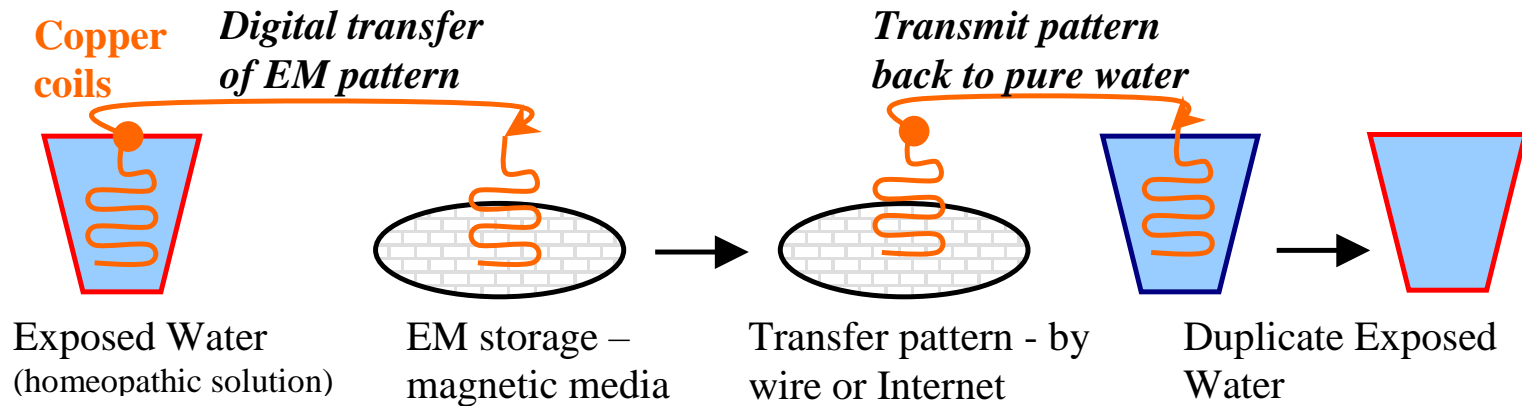


Benveniste found ways to transfer properties directly – implies an electromagnetic pattern, imprinted on water structure by chemical structure, is responsible for properties.

Water Memory: Concepts (5)

Direct transfer: Informational copies of BAS

(D) Transferring information properties directly.

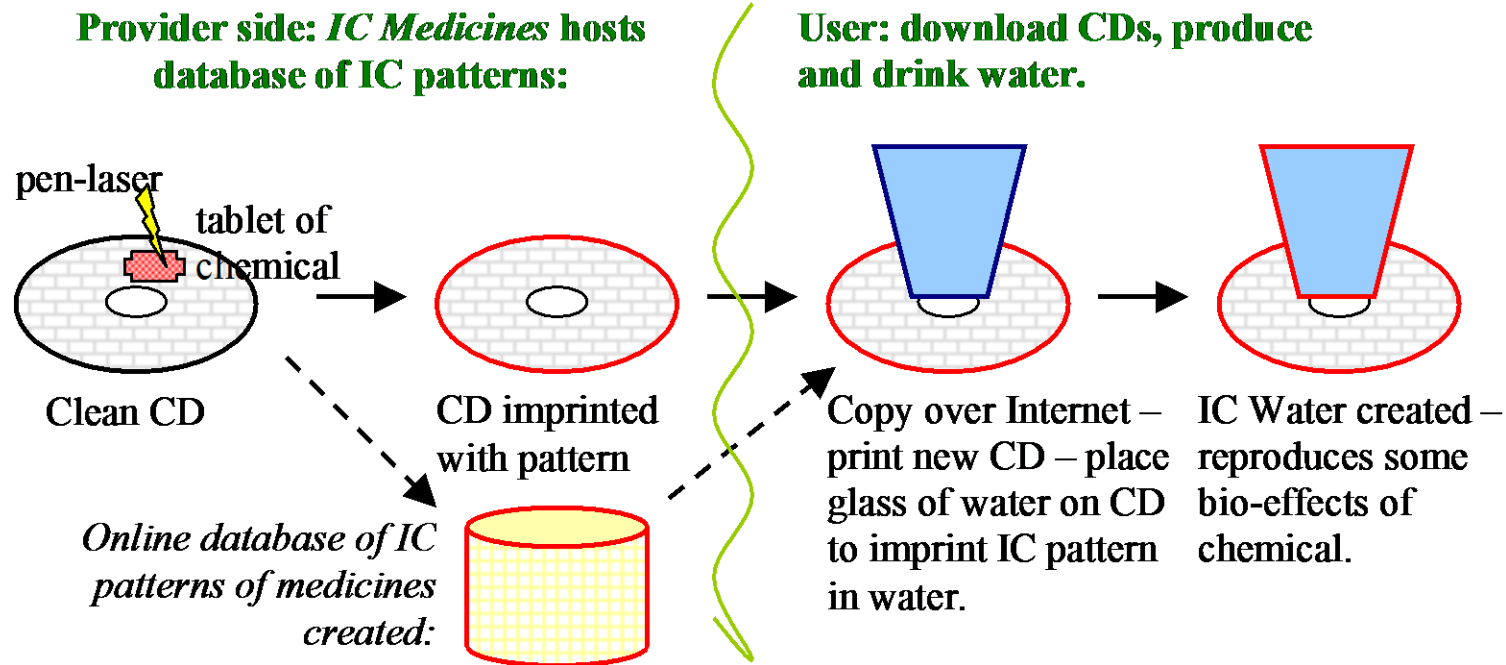


Benveniste showed that the EM structure can be digitalised, stored on a computer media as *information*, then sent over phone lines or Internet, and transmitted back to water.

Water Memory: Concepts (6)

Direct creation and transfer: IC of BAS

(E) Creating and transferring IC patterns directly with CDs.



Montagnier and others (at IC Medicines) developed technology further – can create IC of BAS directly – IC Medicines have created online database that lets users download patterns of pharmaceutical drugs (over 60).

Revolution 2. Water Memory (Hist).

Several groups in the 1990's – 2000's tried to reproduce effects – including US Defence Advanced Research Projects Agency (DARPA).

Some failed but some succeeded, e.g. Madeline Ennis *et alia*, 2004: *"In 3 different types of experiment, it has been shown that high dilutions of histamine may indeed exert an effect on basophil activity. ... We are however unable to explain our findings and are reporting them to encourage others to investigate this phenomenon."* [Belon P, Cumps J, Ennis M, Mannaioni PF, Roberfroid M, Sainte-Laudy J, Wiegant FA (21 April 2004). "Histamine dilutions modulate basophil activation". *Inflammation Research*. Birkhäuser Basel. 53 (5): 181–188.]

Revolution 2. Water Memory (Hist).

Other scientists also found effects on living systems, e.g.

Foletti A., Ledda M., D'Emilia E., Grimaldi S., Lisi A. Experimental Finding on the Electromagnetic Transfer of Specific Molecular Signals Mediated Through the Information Aqueous System on Two Human Cellular Models. *The Journal of Alternative and Complementary Medicine*, 18(3):258–261, 2012.

There is a much longer history of research, mainly from USSR/Russia in 1970s – 90s. E.g. [Kernbach, 2017].

S. Kernbach. 2017. (IJUS Editorial Comments). “Commentary on the work by B.P. Surinov et alia ‘Information Pharmacology - Replication of Information Copies of Drug Substances in Aquatic Vehicles’.” *International Journal of Unconventional Science* Issue E2, pp. 10-11, 2017

Revolution 2. Water Memory (Cont).

*"One of the first mentions includes publications in Biophysics and Molecular Biology journals in 1977 by V.P.Yamskova and her colleagues ... starting from 1976, the publications of G.N.Shangin-Berezovsky and his staff ... In the late 80's - early 90's, the number of works increased in an avalanche manner, the already mentioned publications by J. Benveniste, L. Montagnier, A.I.Konovalov, N.A.Tushmalov, A.M.Cusin and other researchers appeared... However, it is necessary to point out another line of researches that arose in the USSR in the 1970s and 1980s. In 1972, the State Committee for Inventions and Discoveries of the USSR registered the application by V.Kaznacheyev, S.Shurin and L.Mikhailova (Siberian Branch of the USSR Academy of Medical Sciences) on the effect of 'distant intercellular interaction' ... **by the end of the 1990s, the method of remote effects has become quite popular among researchers, so far hundreds of experiments have been conducted in various academic and amateur laboratories.**" [Kernback 2017, p.9-10.]*

Revolution 2. Water Memory (Cont).

In the 2000's improved technology, for measuring water properties, and for making and storing “*Informational Copies (ICs) of Biologically Active Substances (BAS)*” made substantial advances - the *IC Medicines* group, led by Evengy Germanov (DST Foundation) started.

Some recent papers from this group:

Surinov B.P., K.G. Hachumova, E.P. Germanov. Modification of biological activity of water on the basis of energy-information technologies: experiments with immunomodulating agents. *International Research Journal*, 4(11(3)):77–79, 2013.

Hachumova K.G., B.P. Surinov, V.L. Voeikov, E.P. Germanov, A.A. Fedorenko. Technologies that make a challenge to modern thinking: transferring the properties of medications through communication lines. *IJUS (Rus)*, 2(5):108–117, 2014.

Revolution 2. Water Memory (Cont).

Recent work: extracts from: B.P. Surinov, K.G. Hachumova, E.P. Germanov, A.A. Fedorenko. 2017. Information Pharmacology - Replication of Information Copies of Drug Substances in Aquatic Vehicles. *International Journal of Unconventional Science Issue E2*, pp. 3-9, 2017.

- “A group of scientists [Foletti *et alia*, 2012] used J. Benveniste’s method to transfer an information signal from a solution of retinoic acid to a nutrient medium into which malignant tumor cells were then placed. The medium thus prepared, inhibited the growth of cancer cells.”
- “Later, L. Montagnier [2009] improved [Benveniste’s] device and showed that high dilutions of the DNA solution of some bacteria and viruses are sources of emission in the range of several hundred hertz to several kilohertz. It turned out that such signals are capable of having contactless remote effect on solutions of DNA precursors and reproducing copies of the initial nucleotide sequences of DNA [2011]. L. Montagnier used the results of these experiments **to justify the revolutionary hypothesis according to which water, aquatic environments of living organisms can participate in the storage and transfer of genetic information.**”

Revolution 2. Water Memory (Cont).

This quote refers to effects of DNA information transmission through water structure.

This is a revolutionary concept in genetics and evolutionary theory: proposes a fundamental new mode of transmission of genetic information, beyond physical DNA.

Relates to Surinov paper on the connection of new water science with new evolutionary synthesis.

The main line of new work presented at the conference however is on the transmission of effects of drugs/medicines through water.

Revolution 2. Water Memory (Cont).

Experiments testing IC Medicines methods on mice.

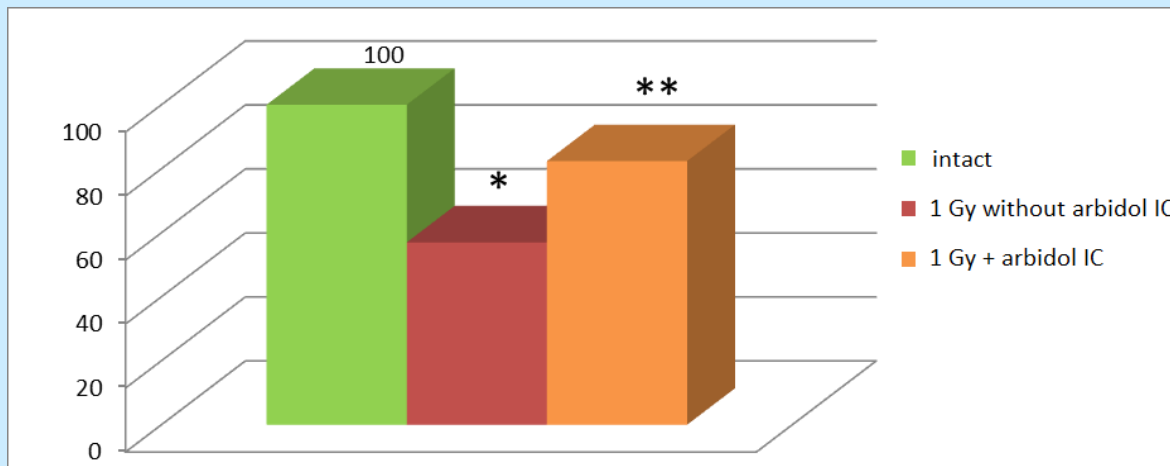


Figure 1. Content of antibody forming cells (AFCs, % to control) in the spleen of intact mice and irradiated (1 Gy) mice not receiving IC of arbidol (EWc and EPSc) or treated with water and physiological solution of IC of arbidol (EWa and EPSa). [Surinov et alia, 2017, p.5].

Revolution 2. Water Memory (Cont).

Experiments testing IC Medicines methods on mice.

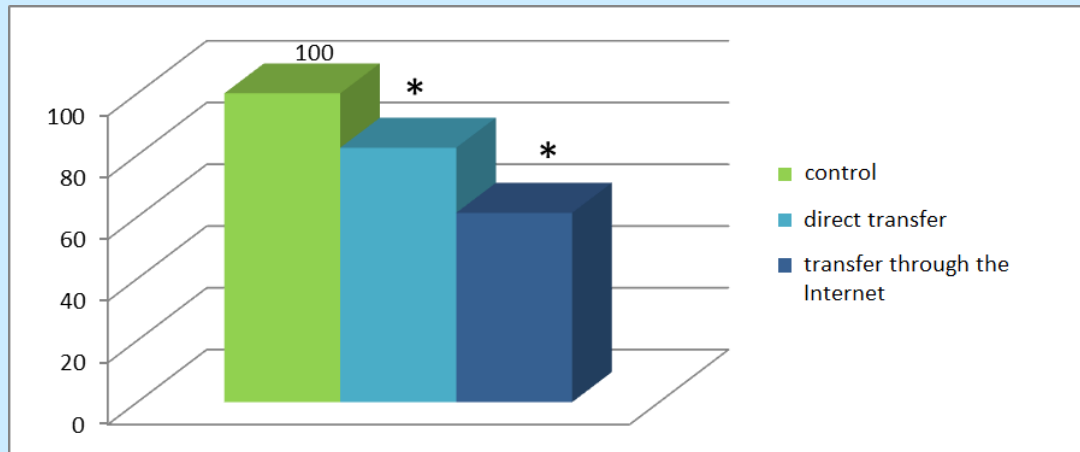


Figure 2. Content of antibody forming cells (AFCs, % to control) in the spleen of mice receiving water without IC of dextran (control), water with direct transfer of IC of dextran, or water with IC of dextran transferred through the Internet. [Surinov et alia, 2017, p.6.]

Revolution 2. Water Memory (Cont).

- Note IC Medicines group, Montagnier, etc are not advocating *homeopathic treatments* –
- IC Medicines advocating *Informational Copies* of standard pharmaceutical drugs transmitted through water, as having therapeutic effects similar to material doses of the drugs – without side effects.
- The DST Foundation, the main Water Conference sponser, is the major developer of this technology – a scientific and commercial development.

Revolution 2. Water Memory (Cont).

*Informational Copies:
Press Release DST Foundation*

“A Global Experiment Reveals Unique Water Properties”

“Scientists from all over the world presented their recent studies at the Annual Conference "Physics, Chemistry and Biology of Water. October 27, 2017, Sofia. A one-month long global experiment demonstrates the ability of water to transfer and store information. The results of the study were presented by the world-known German Professor Serge Kernbach and author of the study. The event was part of the 12th International Conference on the Physics, Chemistry and Biology of Water, which brought together some of the world's most prominent scientists and researchers.”

Revolution 2. Water Memory (Cont).

Informational Copies of BAS:

Press Release DST Foundation (cont)

- “In 2004 Prof. Mark Greenstein and Dr. Michael Schreiber designed and developed the first technical equipment needed for transmitting information copies. Only few years later, in 2012, the first **technical center** of such kind was set up in Prague. In 2016 it was **moved to Bulgaria** and today the center has **60 different informational copies** of biologically active substances installed in it. Those information copies can be automatically transferred via internet connection to anywhere in the world.
- “Since the beginning of the project, **over 5,000 clinical observations** have been conducted on patients who have received information copies of various biologically active substances in order to improve their condition. **A positive effect was observed in 91.2%** of the cases and no side effects were recorded.
- “The main goal of this experiment is to demonstrate the transmission of information copies (IC) of chemical substances from a technical center to any place in the world via communication lines – states Prof. Kernbach – Water has exceptional properties that humanity is yet to learn how to use effectively.”

Revolution 2. Water Memory: Summary

The concept of Water Memory represents a revolutionary paradigm shift – and has strong scientific credentials.

- It has strong empirical evidence and far-reaching implications.
- There are multiple experiments verifying water memory.
- It relates to numerous water properties and processes – including physical, metabolic and biochemical.
- It has revolutionary implications for evolutionary genetics, pharmacology, health, and bio-chemistry.
- Is being advanced by a steady development of measurement technology.
- No definitive explanatory framework yet – in flux – attempts to give QM analysis of ‘coherence domains’.

Revolution 3. Water Consciousness.

First claim is that conscious intention can alter or imprint properties to water (PK effects). Second claim is that water is critical as the host or intermediary of consciousness.

- Traditional: yoga, prayer, mystical traditions, hold mental projection of intentions has effects.
- Emoto: found crystal patterns in water (ice) are created by *intention*.
- Wider PK experiments test effects of mental intention on physical systems – e.g. on RNGs.
- New technology to measure micro-physical changes in water structure also being used to analyse effects of mental intention.
- New theoretical models for water structure and memory spill over to consciousness and brain activity – water is universal medium for life.

Revolution 3. Water Consciousness.

- Dr. Emoto developed *Hado water* – a ‘structured water’ with therapeutic qualities.
- Used MRA (magnetic resonance analyser) to transfer vibrational energy to ‘microstructured water’.



- He then began photographing water crystals – and found they reflect qualities of water. ‘Good water’ develops beautiful hexagonal crystals. ‘Dead water’ develops none.

Revolution 3. Water Consciousness.

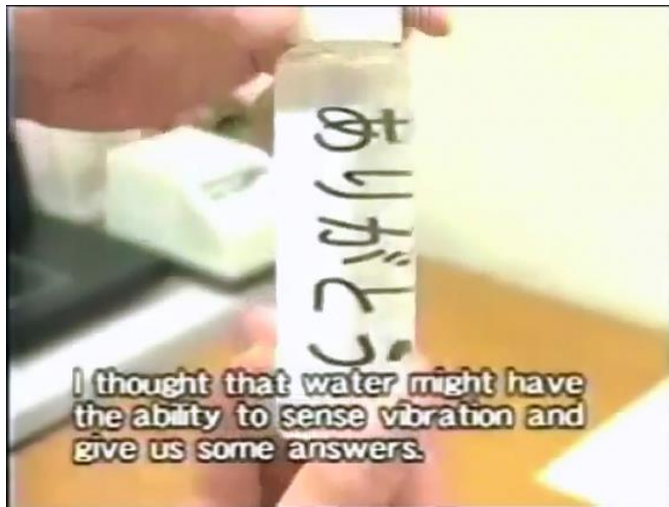
- Emoto also played music to water – on right shows a crystal developing from playing Beethoven’s 9th symphony to Tokyo tap water – originally as below.



- ‘Dead water’ or ‘bad water’ shows broken structures or none: e.g. Tokyo tap water.
- He developed a philosophy of ‘vibrational energy’ as central to life and health, and mediated by water.

Revolution 3. Water Consciousness.

- Emoto then did (PK) experiments where people direct thoughts to water, and observed crystals.
- Found good thoughts create beautiful crystals, bad thoughts make none.



Then started *remote PK experiments* – transferring intentions or creating Hado water from photos or *names!* Then through *words*: claims emotive words (like ‘love’ and ‘hate’) written on water containers also produced effects on water crystals.

Revolution 3. Water Consciousness.

- Emoto is an inspirational figure – but not clear what is going on scientifically.
- But the new ultra-sensitive measurement devices, developed in the 2010's to investigate water structure and memory, are now also being used to test PK effects.
- A number of Conference papers on this – e.g.

“Nonlocal quantum phenomena in macroscopic systems: 1k replication experiments with Electrochemical Impedance Spectroscopy in water” Serge Kernbach *et alia*.

“Analysis of Structural Properties of Water with Electrophotonic Imaging Technology” Konstantin Korotkov *et alia*.

“Changing Water Properties With Lasers, Magnets, Crystals, Geometry **and Conscious Intention**” Robert M. Haralick.

Revolution 3. Water Consciousness.

- Experiments with primary aim of measuring water memory effects – generally through very sensitive ph or conductivity measures – then extended to also test *remote effects of conscious intention*.
- Claim to validate effects.
- This is a PK effect.
- This is very hard to comprehend theoretically!
- Subjects direct intentions at distant water containers (e.g. labelled ‘1’ and ‘2’) with which they have no contact – and effects are apparently produced.
- Need to look at other similar types of PK experiments for a context – e.g. RNG experiments – turns out similar effects are evident with these: Dean Radin.

Revolution 3. Water Consciousness.

Radin Dean New Experiments Show Consciousness Affects Matter


Foundations of Physics, Vol. 19, No. 12, 1989

Evidence for Consciousness-Related Anomalies in Random Physical Systems

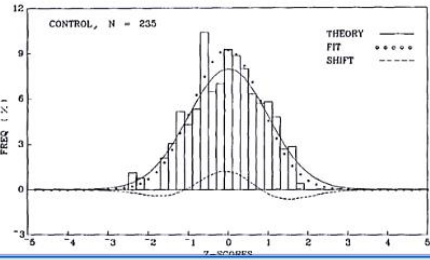
Dean I. Radin¹ and Roger D. Nelson²

Received May 6, 1988; revised June 12, 1989

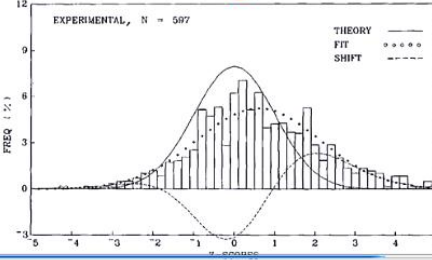
Experiments: 1959 – 1987
152 publications, 68 investigators
597 Expt & 235 Cntl studies



chance



~7 sigma



1989: Dean Radin and Roger Nelson meta-analysis of hundreds of PK experiments shows strong evidence of effects.

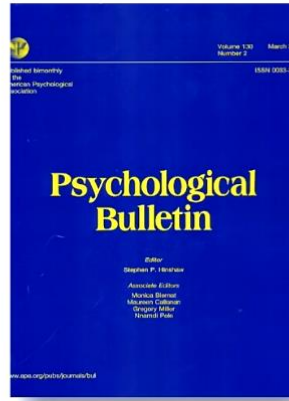
Revolution 3. Water Consciousness.

Radin Dean New Experiments Show Consciousness Affects Matter

Examining Psychokinesis: The Interaction of Human Intention With
Random Number Generators—A Meta-Analysis

Fixed-effect
 $z = 3.59$

Random-effect
 $z = 4.08$



Bosch et al, 2006
380 studies

2006: Bosch *et alia*: meta-analysis of 380 PK studies with random number generators - shows strong evidence of effects.

Revolution 3. Summary.

The PK claims of 'Water Consciousness' is a truly radical concept – disrupting metaphysics of causation, concepts of material reality – and concepts of experimental evidence.

Major problem: it has no accepted theoretical basis.

But it is gaining repeated experimental evidence – which should be able to be multiplied.

It is also convergent with other types of PK experiments – similar to RNG experiments.

It also conforms to the folk experience of thousands of people, who use techniques for health or therapy.

Revolution 3. Summary (2).

The second idea is that consciousness is physically mediated by water (e.g. in quantum fields associated with water in the brain). This contradicts materialist-functionalist views of consciousness – which takes ‘thought’ as a purely digital information-processing function, hosted in neuron networks.

The functionalist theory is important but incomplete – alternative theory appears complimentary – plausible as water is a key component of the brain as a quantum system – conventional science should be open to this.

There is no successful theory of mind of either kind yet. The role of both neuron networks and water information networks in producing consciousness is an open question.

Part 3. Summary.

- How well are these three *paradigm shifts* scientifically confirmed? What is needed to resolve evidence?
- What is the prospect for these new theories to be accepted in mainstream science? How will the process of acceptance happen?
- Is this really a ‘scientific revolution’ in progress – or a group of significant claims and discoveries, to be incorporated within established paradigms?

Part 3. Summary.

The three new paradigms are in different stages:

- **1. *Water Structure***: is the most advanced; has strong explanations and theory; strong empirical verification → EZ theory should be accepted into mainstream science now as a dynamic new field of research.
- **2. *Water Memory***: has rapidly advancing verification and technology; converging empirical evidence; not yet conclusive; limited theory and explanation → should be accepted as a ‘hot topic’ in science.
- **3. *Water Consciousness***: most radical and difficult to judge; has wider support in other psi experiments → should be seen as ‘revolutionary science in process’ → serious efforts should be made to resolve this.

Part 3. Summary. Water Structure.

- I think practically all conference participants accept EZ or similar concepts of structured water. But it is still not acknowledged in Establishment science – it remains heretical – called ‘crank science’ by many academics.
- **But orthodox science of ‘water structure’ is a mess:**
 - Concept was condemned by Establishment scientists from the 1970s-2010s – but with little scientific evidence.
 - Attacks have dissipated – there are few open attacks on Pollack’s 2013 book by serious scientists
 - But sceptics/debunkers still attack all structured water concepts, as a generic tradition – encouraged by many academic scientists.
 - Establishment science now ignores EZ theory.
- **Refusal by Establishment to evaluate serious questions – typical of a scientific paradigm in retreat from reality.**

Part 3. Summary. Water Structure.

I would judge that:

- high probability that EZ theory is fundamentally right –
- high probability that liquid water supports durable structures that are not explained or acknowledged in orthodox theory.
- Why not judge 100% probability for these claims?
 - First because it is not yet ‘settled science’ – there are still open questions, EZ theory still needs substantial development in terms of fundamental models of forces, needs more experiments, etc –
 - Don’t want to make the mistake of authoritarian scientists, of assuming *certainties* when questions are still open –
 - We must leave the door open at this stage to someone advancing some significant revision of EZ structure –
 - The EZ theory is not unified with the water memory theory yet – and the fundamental interaction with EM radiation is not settled.
- But EZ theory should now be accepted as the leading theory.

Part 3. Summary. Water Memory.

- I think most conference participants accept water memory. It is still rejected by Establishment science – remains heretical – considered ‘crank science’ by many academics.
- **But orthodox treatment of ‘water memory’ is a mess:**
 - Concept was condemned by Establishment scientists from the 1970s-2010s – but with inadequate scientific evidence – research suppressed – questions not resolved.
 - Attacks continue – but criticism based only on weak claims that effects are proved physically impossible by appeal to ‘basic physics’ – not based on evaluation of empirical evidence.
- **Refusal by Establishment to evaluate questions scientifically – typical of a scientific paradigm in retreat from reality.**

Part 3. Summary. Water Memory.

I would judge that:

- High probability that water memory exists – and
- High probability that Information Copies of BAS in water have substantial metabolic and therapeutic effects.
- Why not certainty for these claims?
 - I am not aware of all the positive and negative evidence – positive experiments seem convincing but questions over replicability – clinical experiments are difficult, especially on human subjects – statistical power of these does not seem overwhelming to me.
 - Key positive experiments mainly done by supporters – e.g. IC Medicines group → needs more independent verification.
 - Lack of theoretical model – this is building, but a convincing theoretical model for IC is not yet established.
- Water Memory, and IC copies of BAS should now be accepted as leading scientific hypotheses.

Part 3. Summary. Water Consciousness.

I would judge that:

- Significant evidence that water PK effects are real
- High probability water has crucial role in consciousness – consistent with functional role of neuron networks.
 - These claims are much more difficult to judge than those about physical water structures or memory.
 - Judgements reflect background metaphysical beliefs – about nature of consciousness, and possibility of Psi effects.
- Cannot expect scientific consensus on this: there is no established scientific theory of consciousness yet.
 - Substantial evidence for PK effects is claimed – but no known causal mechanism – I know only fragments of the evidence → cannot claim strong scientific confirmation or falsification.
- ‘Water Consciousness’ claims should be accepted as serious scientific hypotheses; given the profound consequences further investigation should be prioritised.

Part 3. Summary.

- These are my personal judgements *of the scientific evidence I know of* – others will have different judgements –
- Researchers into water PK phenomenon may be in a position to claim greater certainty – but to me evidence remains *scientifically open*.
- It is not just a question of *observations* – to reach ‘scientific certainty’ also needs good *explanations* – phenomenon alone are not sufficient.
- Sceptics arguments that phenomenon are theoretically impossible shows weak understanding of scientific method.
- People are bound to disagree – essential there is a space to entertain different ideas – *this is what the water conference is about*.
- Also we should distinguish *scientific belief* from *wider belief* – science only answers a narrow range of questions – scientific authority is often unreliable – in the real world we must adopt beliefs from our own experience and judgement – rarely just from ‘scientific evidence’.

Part 3. Summary: general comment.

- To me, the controversies waged in these fields over decades reflects badly on Establishment science – typifies the degradation of science from being *an open method of enquiry* to *propagating a set of Established beliefs*.
- E.g. scientists today are expected to declare scorn for homeopathy or other ‘alternative’ concepts – as a cultural ritual of science – *without any knowledge of these*. Impossible now to get an objective judgement from Establishment science on these subjects.
- The Water Conference represents an essential positive development, to correct excesses of Establishment conformity and dogmatism, and provide a forum and a voice for *scientific discovery and creative scientists*.

Part 4. A Scientific Revolution?

'Scientific revolutions' are key events for philosophers and historians of science.

- They are like wars or revolutions in political history: tipping points where power structures change, new ideas replace old ones, new world-views emerge.
- They are both scientific and conceptual and metaphysical transformations.

The revolution in water science heralds a **scientific and metaphysical revolution**: it transforms views on the very nature of life: from mechanistic, materialist, reductionist paradigm → to holistic, organic, synthetic paradigm.

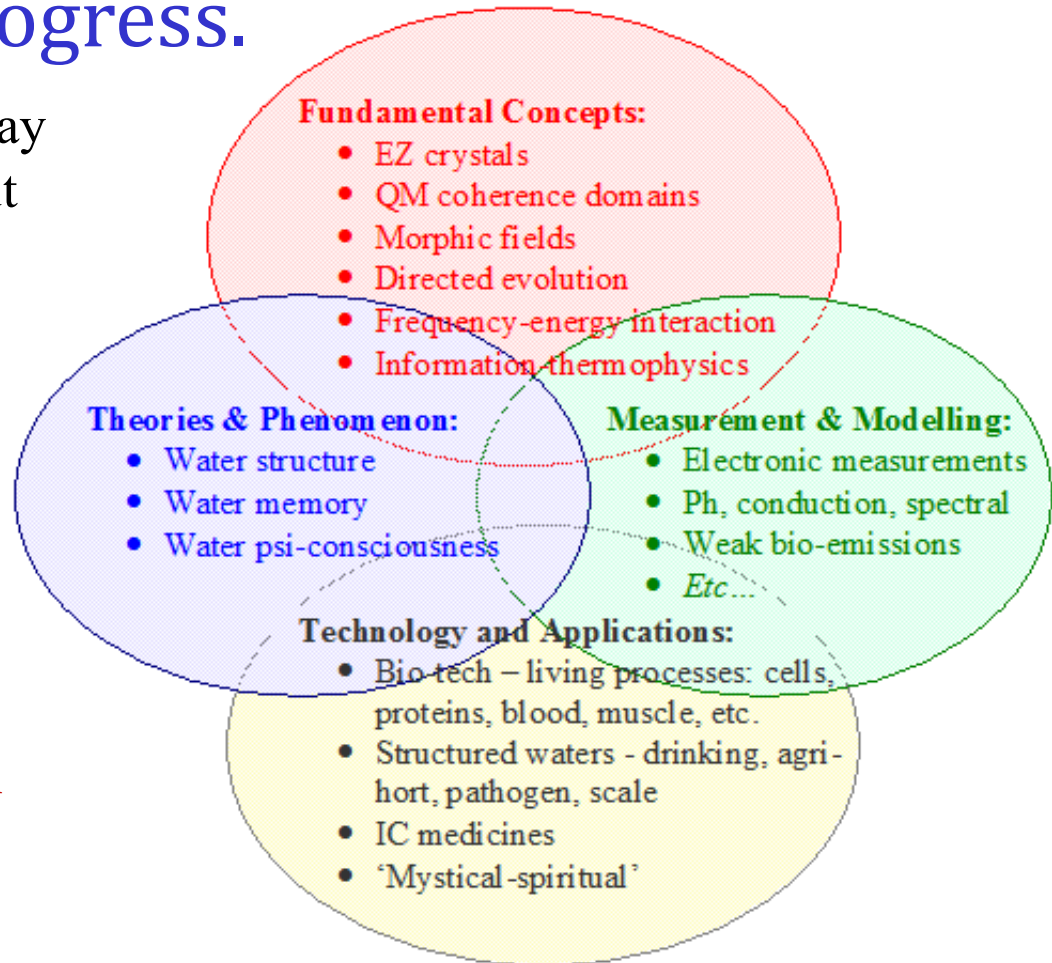
This promises a profound impact on popular imagination – represents a real 'scientific revolution'.

Part 4. Key Signature of a Scientific Revolution in progress.

A ‘Scientific Revolution’ may be sparked by one idea – but is only realised with a synthesis of:

*new theory and concepts,
new experimental studies,
new technology enabling
measurements and
applications.*

These are all evident in the Water Conference. Features of a full-scale ‘scientific revolution’ in progress are present.



Aspects of a Scientific Revolution

Part 4. New measurement technology.

New measurement-modeling-technology developments seen at the Water Conference are driving advances:

- Many presentations on pioneering *measurement techniques and electronic technology* – detecting micro-scale water properties and processes – examining the function of water in bio-chemical processes.
- Presentations on pioneering scientific *modelling techniques* — computer modelling, quantum modelling, measurement modelling.
- Presentations of *applied technology* – in medicine, health and well-being; biology and food; energy and environment; enhanced water properties; structured water.

Conclusion.

- The Water Conference community represents a real scientific revolution in full swing on multiple fronts. Implications are profound for:
 - Role of water structure in physics-chem-biology
 - Role of subtle informational functions of water
 - Role of water in evolution
 - Role of water in consciousness
 - New water technology – health, food, biotech
- Its larger synthesis amounts to a revolution in both science, and broader ‘philosophy of life’.
- **Should be followed by philosophers of science.**

*ATASA Research
Headquarters:*

