Critique of Phillip Ball's blog, "Water in biology"

For over twenty years Phillip Ball has been an editor of the journal Nature, a protégé of Maddox. He offers a blog on the topic of "Water in biology" which is a little more sophisticated than SCICOP.

As with SCICOP, his deeply biased view on the issues are manifest by use of derision; memory of water and homeopathy are referred to as "pathological science" .

In his blog he consistently conflates the two concepts; memory of water and homeopathy. As Martin Chaplin, Emeritus Professor of Applied Science at London South Bank University has pointed out, memory of water and homeopathic efficacy are separate issues.

Ball discusses the overview paper, by Professor Chaplin, whom he calls a "chemist": "[Chaplin] points to the surprising recent observation that some molecules form clusters of increasing size as they get more dilute. But this, as he admits, would imply that most homeopathic solutions would be totally inactive, and only a tiny handful would be potent."

First he is talking about structure of water, with possible implications for memory, and then he switches the topic to homeopathic solutions. He also has Chaplin "admit" that only a tiny handful [of homeopathic solutions] would be potent, thus himself admitting that a tiny handful would be potent. How is this dismissing either memory of water or homeopathy?

Ball assumes that to suppose that information somehow be encoded in water structure requires that there be many thousands of such structures, corresponding to thousands of distinct homeopathic remedies. [1] To suppose that information somehow be encoded in water structure absolutely does NOT set ANY requirement whatsoever on the number of such water structures.

His observation that homeopathic solutions are diluted by factors of 10, nor the customary use of only certain powers of dilution factors provides no evidence whatsoever against the concept of the information carrying capacity of water. Nor does it provide evidence against the efficacy of homeopathy. Some type of standard dilution factors, as opposed to random dilution factors, would seem to be common sense practice.

Ball takes issue with several proposed mechanisms for 'memory of water'. Now regardless of his success at deconstructing these, the lack of a satisfactory descriptive mechanism does not invalidate the phenomena. Further, though he does a thorough job at deconstructing the silicate dissolved in water hypothesis, does he successfully deconstruct all other possible mechanisms? Does he refute Giuliano Preparata and Emilio Del Giudice's long-ranged 'quantum coherent domains' as a possible mechanism?

He points out that these domains have never been observed. But have quarks ever been observed? He then states that the theory has now widely disregarded. By who? Phillip Ball for sure, but on what grounds? It is doubtful that he himself has done any research on the topic,

since he consistently misspells Emilio Del Giudice's name as Emilio Del Guidice. References to these researchers and coherent domains continue to appear on the internet. [2]

Ball complains about the vagueness and generalizations of this work, yet a large portion of his arguments against either memory of water or homeopathy are themselves generalizations.[3] He dismisses all of the research papers in the special issue (96) of Homeopathy Journal devoted to memory of water. [4]

Ball admits that Benveniste's long-term collaborator Yolène Thomas' accounts of digital biology are at face value, deeply puzzling. He offers no repudiation of these accounts, only suggesting that such tests should be done on smaller organisms. In 2015 a paper reported the administration of homeopathic solutions to induce immunomodulation of macrophages. The result? One homeopathic solution increased phagocyte activity while another decreased it. [5]

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[1] http://waterinbiology.blogspot.com/2007/08/bad-memory.html

"Another problem, pointed out by David Anick of the Harvard Medical School and John Ives of the Samueli Institute for Information Biology in Virginia, is that if we are to suppose the 'memory' to be somehow encoded in water's structure, then we must accept that there should be many thousands of such stable structures, each accounting for a specific remedy – for several thousand distinct remedies are marketed by homeopathic companies, each allegedly distinct in its action."

[2] For example:

http://www.heavylight.de/publish_en/hl_article_delgiudice_tedeschi_1_09.php

http://iopscience.iop.org/article/10.1088/1742-6596/442/1/012028/pdf

https://arxiv.org/ftp/arxiv/papers/0812/0812.0275.pdf

http://www.i-sis.org.uk/Quantum_Coherent_Water_Life.php

http://www.waterjournal.org/uploads/vol5/supplement/Voeikov%20and%20DelGiudice.pdf

[3] http://waterinbiology.blogspot.com/2007/08/bad-memory.html

"What emerges from these papers is an insight into the strategy adopted more or less across the board by those sympathetic to the memory of water. They begin with the truism that it is 'unscientific' to simply dismiss an effect a priori because it seems to violate scientific laws. They cite papers which purportedly show effects suggestive of a 'memory', but which often on close inspection do nothing of the kind."

"They weave a web from superficially puzzling but deeply inconclusive experiments and 'plausibility arguments' that dissolve the moment you start to think about them, before concluding with the humble suggestion that of course all this doesn't provide definitive evidence but proves there is something worth further study."

[4] http://waterinbiology.blogspot.com/2007/08/bad-memory.html

"But perhaps the true value of the collection is that it exposes this field as an intellectual shambles. "

[5] http://www.feg.unesp.br/~ojs/index.php/ijhdr/article/viewFile/776/790

In vitro study of homeopathic medicines in macrophages

co-cultured with Leishmania (L.) amazonensis. Results: A marked increase of macrophage spreading (considering breadth and area) was seen in Thymulin 5cH and Thymulin 7cH treated cells ($p \leq 0.01$), as in Antimonium crudum 30cH ($p=0.05$) and 200cH ($p=0.001$) treated cells. Only Antimonium crudum 200cH presented increase in phagocytosis index ($p=0.001$)