

### Homeopathic potentisation

**A look at the claim of increasing a remedy's strength by serially diluting and succussing it**

By John Jackson © 2010

#### What is potentisation?

In our article on [homeopathic dilutions](#), we explained how the serial dilution of a homeopathic starting remedy is done in order to eliminate the toxicity from it. However, as both science and common sense would predict, diluting the remedy to eliminate its toxicity would dilute out any therapeutic effects also. As homeopaths usually dilute their remedies to the point where there's not even a single molecule of the starting ingredients left, they can rightly claim that their remedies are perfectly safe and free from side effects.

Of course, if a remedy contains no ingredients, it is perfectly safe and side-effect free because it doesn't have *any* effects whatsoever. So why, if they are producing ingredient-free remedies, do homeopaths insist that their remedies work? It's because they believe in a process called *potentisation*.

In between the serial dilutions in a remedy's preparation, the intermediate remedy is 'succussed' (vigorously shaken or tapped against a solid object). This action is claimed to transfer the 'essence' (fundamental properties) of the ingredients to the water they're dissolved in. Homeopaths also believe that the more times this is done, the stronger the remedy becomes - each subsequent dilution and succussion increases the 'potency' of the remedy. So a remedy at 6C potency (which contains trace amounts of ingredients) is thought to be a weaker remedy than a 30C potency (which contains no ingredients at all).



**Water shaker**

It is important to understand the difference between dilution and potentisation when looking at the claims of homeopathy. Critics will often point out that homeopathy can't work because of the extreme dilutions used but it's not the level of dilution, or even the absence or presence of ingredients, that homeopaths claim to be the reason for their remedies to work - it's potentisation that's claimed as the reason. The idea of potentisation, however, is not without its problems.

Homeopaths often refer to the 'memory of water'. This is the standard explanation for how potentisation works: through the shaking and tapping of succussion, the essence of the remedy is imprinted onto the structure of water which 'remembers' it. The main problem being that water, despite a few false positives (experiments that had positive results but which failed replication), has never been shown to have a memory. Reference is also often made to quantum mechanics or to digital recordings as proposed explanations or analogies for potentisation/water memory. Potentisation and its proposed mechanisms are explanations for effects that don't exist.

There are many procedures available to investigate the structure of matter such as: transmission electron microscopy, spectroscopy, ultraviolet transmission characteristics, X-rays and ultrasonographics. Although water does form structural clusters, it only does so for a matter of nanoseconds<sup>[1]</sup>. Science cannot tell the difference between water and potentized water - and neither can homeopaths<sup>[2]</sup>. There is also the added complication that most homeopathic remedies are sold in pill form. Even if water did have a memory, it is not clear how this memory of the substance once dissolved in it gets transferred to the sugar pill as the water evaporates from it.

Of course, there is another way of looking at potentisation.

## Introduction to sympathetic magic

In his book *The Golden Bough*, Sir James Frazer, an anthropologist studying religion and superstition in peoples of the world, classified aspects of magical thinking (superstitious thinking). He noticed that superstition falls into patterns and that these patterns are universal throughout humanity.

Sympathetic magic is the belief in non-physical cause and effect mediated by unseen forces and properties. Frazer identified two main components to sympathetic magic:

### 1. **The law of similarity or homeopathy** (NOTE: not named after the current topic!)

This is where we believe that like affects like - imitative magic. Things that are similar will have similar properties that can affect each other. In pre-scientific medicine, this gave rise to the 'doctrine of signatures' where healers believed that the appearance of a plant, for example, indicates what it can be used to treat. A plant with heart-shaped leaves would be used to treat heart conditions etc.

In homeopathy, 'like affects like' (its law of similars) is really an instance of this law of similarity as it's a case of believing that whatever causes certain symptoms in a healthy individual can be used to treat the disease that results in the same symptoms in someone who is ill. Remedies are chosen because they produce similar symptoms as the disease they're meant to treat.

### 2. **The law of contagion**

This is where we believe that things that were once in contact retain a permanent, non-physical link between them. The notion of 'essences' (non-existent but believed to be fundamental properties of things) is important. For example, we might be attracted to, or repulsed by, an object if it was once owned by John Lennon or serial killer Fred West - as if the 'essence' of the person remains within the object.

An example from alternative medicine is with the Indian practise of Ayurveda whereby they believe in the healing properties of precious metals such as gold. If water has been in contact with gold, they believe that the water now has the curative properties of gold; even though they are no longer in contact and there's no gold in the water.

Potentiation, and particularly the idea of water having a memory, can be explained as an instance of contagious magic: the water acquires the (desired) properties of what was once in contact with it.

## Problems with homeopaths' potentiation claims

The main problems with homeopaths' claims are:

### 1. **Water has a selective memory**

If homeopaths' claims are true and succussing remedies really does transfer the essence or properties of the solute (the dissolved matter in a solution) to the water, how does the water manage to build up an ever more powerful memory of the remedy with each succussion yet conveniently avoid acquiring the properties of any impurities or trace contaminants that were also dissolved in it. There's no such thing as truly pure water (there's always some degree of impurity) so impurities are going to be present from the mother tincture right through the dilution and potentization process. Laboratory grade double-distilled water has impurities at the 1 part in a billion range, so once past the 4C dilution there will be more molecules of contaminants in the water than there is of the mother tincture.

### 2. **Selective properties**

Essences are believed to be the fundamental properties of things; they're what make things what they are. If a poison such as Belladonna is used in a homeopathic remedy and its essence is transferred to the water, then the water containing the essence of Belladonna should be poisonous. And if potentization makes the essence stronger with each dilution, potentized 30C Belladonna should be more poisonous than Belladonna itself.

Yet with homeopathy, the essence or fundamental properties of a substance change from whatever they are into therapeutic ones no matter what the starting material is - every time.

### 3. **Its paradoxical nature**

Homeopathic dilutions seem to work exactly as science, and common sense, would predict when it comes to toxicity: i.e. that as the remedy becomes more diluted and succussed, the less toxic it becomes. Yet when it comes to the therapeutic effect, the remedy becomes more potent with increasing dilution and succussion. Healing properties are magnified whilst side-effects are diminished. The process of potentization simultaneously works in a contradictory fashion.

### 4. **The remedies are indistinguishable from non-remedies**

If there really was some of the memory of the original remedy that gets transferred to the carrier sugar pill that the remedy is eventually dropped on, it should be possible to distinguish these potentized sugar pills from stock (untreated) sugar pills.

However, there's no known test that can manage to distinguish between them. In properly controlled trials, homeopathically potentized pills give exactly the same results as the placebo control pills. Even if the potentization were some form of as yet undetected and unknown energy, for example, we should still expect to see their action or effect in clinical trials - but it's not detected even where we would expect to see it most prominently.

## Conclusion

Although critics of homeopathy tend to focus on the extreme dilutions homeopaths use, and this is correct from a scientific perspective, homeopaths themselves don't deny that their remedies often contain no ingredients. This is because they claim that their remedies work because of potentization through succussion. However, the idea of potentization has no basis in scientific understanding nor does it have an evidence base to support it. Homeopaths may claim that potentization does *something*, even if they can't explain how or why, based on the results they see; however, those results may be as a result of how placebo effects can give the illusion of ineffective treatments working<sup>[3]</sup>.

Potentization, therefore, could be a name given to a process whose explanation is still awaiting discovery or it may be another form of superstitious/magical thinking. As there are no effects detected in well-conducted clinical trials of homeopathic remedies, the second option looks the far more likely of the two to be correct.

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### **Further reading and references**

[1] <http://www.chem1.com/acad/sci/aboutwater.html> (properties of water)

[2] Roberts, T. Homeopathic test. Nature 1989; 342: 350.

[3] [How ineffective treatments appear to work](#)

<http://www.bartleby.com/196/5.html> (sympathetic magic)

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