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# Alternative Medicine: My Part in its Downfall

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Universities in the UK have been offering ‘bachelor of science’ degrees in preposterous made-up pseudoscience. The Freedom of Information Act made it possible to winkle out some of the nonsense taught on these courses. When this was exposed on blogs and in the mainstream media, vice-chancellors were embarrassed into closing many of the courses. The fact that it had to be done this way reflects badly on the integrity of the vice-chancellors involved. And the total failure of every regulatory agency to achieve this reveals the bad value that they give.

What would you think if your child went off to university to be taught that amethyst crystals ‘emit high Yin energy’? Or that cancer can be cured by squirting coffee up the fundament? What if they were told in a lecture that the heart is not, as medical science has erroneously believed for centuries, a pump for circulating blood around the body but instead ‘the governor of our rational thought and behaviour’. Or that all childhood disease is all about an imbalance of Yang and thus ‘relatively simple’ to treat?

You’d probably want your tuition fees back for a start. And then you would go looking very hard for an alternative institution and while you are were about it you might like to put in a call to the appropriate regulatory authorities. It is, extraordinarily, scandalously the case that nonsenses such as these have been peddled by more than a dozen fully accredited state-funded British universities for more than a decade. (The above examples come from the University of Westminster and Edinburgh Napier University).

Statements like these are obviously barmy new-age nonsense or prehistoric myths. But believe it or not, things like this are taught in UK universities as though they were science. This has been going on since the mid-1990s.

So what exactly are we talking about here? For clarity, I have devised a *Patients’ Guide to Quack Medicine*. It goes like this:

*Homeopathy*: giving patients medicines that contain no medicine whatsoever.

*Herbal medicine*: giving patients an unknown dose of an ill-defined drug, of unknown effectiveness and unknown safety.

*Acupuncture*: a rather theatrical placebo, with no real therapeutic benefit in most if not all cases.

*Chiropractic*: an invention of a nineteenth-century salesman, based on nonsensical principles, and shown to be no more effective than other manipulative therapies, but probably less safe.

*Reflexology*: plain old foot massage, overlaid with utter nonsense about non-existent connections between your feet and your thyroid gland.

*Nutritional therapy*: self-styled ‘nutritionists’ making untrue claims about diet in order to sell you unnecessary supplements.

*Spiritual healing*: tea and sympathy, accompanied by arm-waving.

*Reiki*: ditto.

*Angelic Reiki*: The same but with added Angels, Ascended Masters and Galactic Healers. Excellent for advanced fantasists.

*Colonic irrigation*: a rectal obsession that fails to rid you of toxins which you didn’t have in the first place.

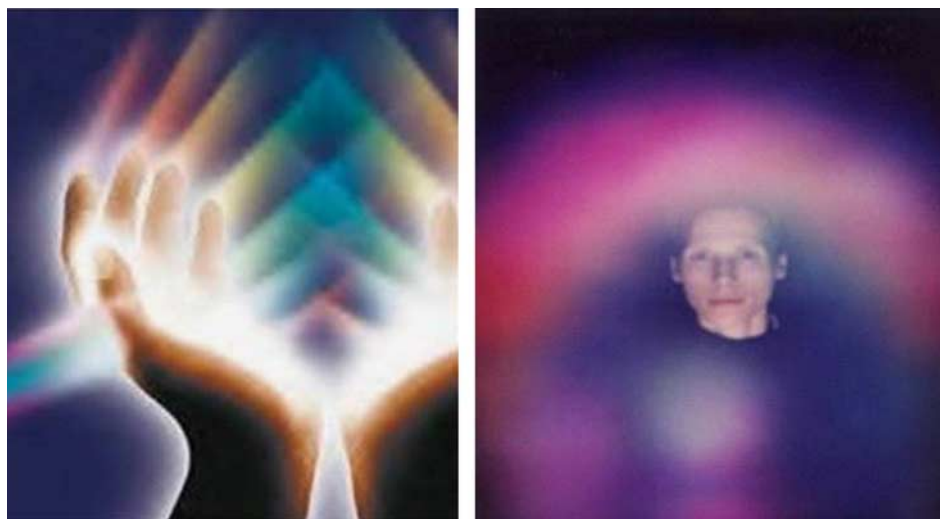
*Anthroposophical medicine*: followers of the mystic barmpot, Rudolf Steiner, for whom nothing whatsoever seemed to strain credulity.

*Alternative diagnosis – kinesiology, iridology, vega test, etc*: various forms of fraud, designed to sell you cures that don’t work for problems you haven’t got.

*Any alternative ‘therapist’ who claims to cure AIDS or malaria*: agent of culpable homicide.

Later, I added

*Libel*: A very expensive remedy, to be used only when you have no evidence. Appeals to alternative practitioners because truth is irrelevant.



**Figure 1.** Two slides from a lecture on ‘vibrational medicine’ at Westminster University, Left: ‘Healing’. Right: ‘An aura photograph’.

To illustrate what our students are being taught – or at least were being taught until I and others made an almighty fuss – figure 1 shows two slides from a first year undergraduate lecture at the University of Westminster on ‘vibrational medicine’ (that’s made-up and a figment of the imagination).

If you aren’t persuaded by the pictures, listen to the words. Alternative medicine practitioners may be no good at curing diseases but they are masters at using the English language to conceal and mislead, often co-opting scientific terminology and mutating this language into something entirely meaningless.

Take, for example, the ‘Three principles of homeodynamics’, used to ‘explain’ therapeutic touch at Napier University Edinburgh. The way these are described – indeed the terms used for the principles (and the word *Homeodynamics* itself) demonstrates how easy it is to mutate English into a parallel tongue that conveys almost no real meaning whatsoever.

**Principle one:** *Integrity* – refers to continuity and integrality of human and environmental fields.

**Principle two:** *Helicy* – relates to openness and pattern. Basically asserts that movement within fields is generally in the direction of greater complexity and diversity. (This is true in health and disrupted health.)

**Principle three:** *Resonancy* – related to helicy – refers to the tendency for energy/living processes to move from low-frequency/long-wave patterns towards high-frequency/short-wave patterns.

Note the use of the terms ‘short wave’ and ‘long wave’ (borrowed from physics); ‘Helicy’ (alluding vaguely perhaps to the structure of DNA or other spiral organic molecules); ‘Resonancy’ – also on loan from physics.

Or this, from Napier University’s description of how Reflexology works:

So if we work with energy during a reflexology treatment what forms are involved?

Everything that is alive pulsates with energy and all of this energy contains information. Scientists accept that the human body generates electricity because living tissue generates energy and it can be measured. Western medicine uses this fact every time an MRI scanner or ECG machine is used. Yet there is still a reluctance to follow the logic on from this.

Indeed there is. Because to do so would not be logical, it would be idiocy. Just about every sentence in the two paragraphs above is either false or meaningless.

The scandal that is the teaching of ‘complementary’ (i.e. non evidence-based) ‘medicines’ is something I and fellow campaigners have been raising havoc about for years. The good news is that we are winning the war against magic – the quacks are on the run.

But it has been a long battle. When the existence of these bizarre courses came to light, I wondered how could this happen? After all, we are beset by a plethora of regulatory agencies.

The fact is none of these toothless regulators has done anything to stop these travesties of reason. The Quality Assurance Agency (QAA) is harmful: it ticks its boxes and rubber stamps the courses. The vice-chancellors’ organization (UUK) has done nothing. The Medicines and Healthcare Regulatory Authority (MHRA) has allowed misleading labelling of quack medicines. Trading Standards has been useless. The Department of Health has vacillated and will not allow NICE (The National Institute for Clinical Excellence) to investigate, despite many requests to do so.

Parliament has been unhelpful (perhaps not surprising when one MP, David Tredinnick, got into trouble for buying astrology software on expenses). The only organisation that has done anything sensible is the Advertising Standards Authority (ASA), which, for example, said that homeopaths' advertisements cannot name diseases, and which reprimanded Boots for misleading claims on its homeopathic 'remedies'. But the ASA can't judge academic courses and it can't prosecute charlatans.

The people who must take responsibility for what's taught in a university are the vice-chancellors, the villains of the piece. The vice-chancellor of the late and unlamented University of Wales was Marc Clement. He is a physicist. So I wrote to him in 2008 to ask his opinion of this statement. 'Implosion researchers have found that if water is put through a spiral its field changes and it then appears to have a potent, restorative effect on cells.'

This marvellous piece of preposterous pseudoscience was written by the course leader for an MSc in 'nutrition' run by the Northern College of Acupuncture but validated by the University of Wales. The validation committee did not notice it. Neither did the QAA. Professor Clement did not reply to my request for an opinion about the wonders of 'spiralised water'.

The consequence of this, and many hundreds of other 'validations' conducted by the University of Wales, was that the University was abolished altogether, thanks to the Welsh Minister of Education, Leighton Andrews, although Marc Clement was promoted (temporarily).

The scandal was first revealed by bloggers. It got a lot more publicity after two TV programmes by BBC Wales. After these, even the QAA eventually cottoned on, although only after they sent nine people to the other side of the globe, at a cost to the taxpayer of £91,000. There is, surely, something very wrong when academic standards have to be maintained by bloggers and local broadcasters.

But the tide is turning. At the beginning of 2007, sixteen universities offered 45 BSc degrees in make-believe medicine. There were even five degrees in homeopathy (the medicine that contains no medicine). Now (academic year 2012–2013) there are no degrees in homeopathy.

Likewise, degrees in naturopathy, reflexology and aromatherapy have all vanished entirely from Britain's universities at degree level (though remnants persist as parts of other courses).

'Nutritional therapy' has almost gone too. The people who deal sensibly with nutrition are called dietitians. Anyone can call themselves a nutritionist and the terms 'nutritional therapy' or 'nutritional medicine' usually mean you are dealing with a quack who claims to be able to cure almost anything by diet but whose main aim is to sell you expensive and unnecessary, or even harmful, supplements.

This was shown clearly in a recent sting by *Which?* magazine, in which 14 out of 15 consultations were deemed 'fails' and 6/15 gave dangerous advice.

There are two obvious reasons for this welcome return to sanity. One is that the Freedom of Information Act has allowed us to find out what's taught to the unfortunate students. Universities have fought tooth and nail to hide the information but they were overruled by the Information Commissioner, who decided that the taxpayer should be

able to see how their money was being spent. And vice-chancellors don't like it when Googling their names produces references to 'Yin energy'.

A more positive factor may be that we seem at last to be emerging from the age of what I call the 'endarkenment'. People are less willing to believe things that aren't true, whether it's WMD, bankers' hidden derivatives or homeopathy. So they are less willing to pay for them. The huge rise in tuition fees will cost the taxpayer money (through the loan scheme), but at least it may put the last nail in the coffin of quackery. Vice-chancellors seem remarkably insensitive to the contents of what's taught, but they care a great deal about the money.

The courses that are left are predominantly in Chinese medicine and acupuncture. Chinese herbs are almost completely untested, and they are frequently contaminated and dangerous. You need to be a bit mad to swallow them. They also contribute to the slaughter of rhinos, tigers and bears. But acupuncture is more interesting.

There is no doubt that acupuncture has had, in the past, greater acceptance by the medical establishment than any other sort of alternative medicine. One good consequence of that is that there has been more a lot more research on this technique than on the others. Over 3000 trials have been done but there is still no clear evidence of worthwhile benefits. The most likely interpretation of the results is that acupuncture is no more than a rather theatrical placebo.

If you get yourself poked with needles, and the next day you feel better, there are two possible reasons for that. One is that you are experiencing a placebo effect. The other is the 'get-better-anyway' effect or, in scientific parlance, 'regression to the mean'.

Certainly the act of pushing needles into to your body elicits real physiological responses. But almost all trials suggest that it matters very little where the needles are inserted. There are no 'key' points: it is the pricking that does it. Recent meta-analyses have shown that the difference between acupuncture and no-acupuncture is too small to be useful. But its advocates try to 'explain' its alleged effects, along these lines:

1. There are 14 major avenues of energy flowing through the body. These are known as meridians.
2. The energy that moves through the meridians is called Qi.
3. Think of Qi as 'The Force'. It is the energy that makes a clear distinction between life and death.
4. Acupuncture needles are gently placed through the skin along various key points along the meridians. This helps rebalance the Qi so the body systems work harmoniously.

I suppose, to the uneducated, the language sounds a bit like that of physics. But it is not. The words have no discernible meaning whatsoever. They are pure gobbledygook.

Even acupuncture, which sits at the respectable end of the fruitlooper spectrum of magic medicine, is now under threat and that is good. It has no place in a university, other than as a good example of how remarkably easy it is to fool yourself.

Bloggers and campaigners have made an enormous contribution to the resurgence of rational thinking. It is a shame that the official bodies that are supposed to protect us from con-artists and snake-oil salesmen have not done such a good job.

### **About the Author**

**David Colquhoun** held the A.J. Clark chair of pharmacology at University College London until 2004. Most of his work has been concerned with experimental measurement of single ion channel activity. He, together with Alan Hawkes, worked out most of the stochastic theory that is needed for the interpretation of single ion channel recordings in terms of reaction mechanisms. More recently he has been active in public engagement about evidence, good science and education policies. His blog, <http://dcscience.net/> has had more than 3 million hits, and more detail on the matters discussed in this article can be found there.