

David Colquhoun

# *Alternative Medicine in UK Universities*

---

Poppleton University made history when it decided to re-name its Department of Physics and Astronomy as the Department of Evidence-based Physics. This restructuring became necessary after the foundation of the new Department of Alternative Physics and Astrology. How did this come about? The Finance and Public Relations departments at Poppleton, with rare foresight, had spotted an opportunity to get bums on seats. The old fashioned Physics Department, with its tedious insistence on evidence and mathematics, was proving to be too much like hard work to appeal to undergraduates. In the new Department of Alternative Physics, all theories are treated as equally true if someone cares to believe passionately in them, and mathematics is replaced by intuition and ancient wisdom. Consequently failure was impossible and the finances of the university were transformed. There was no problem in getting official accreditation for the new department, because naturally the accreditation was carried out by appropriate experts in alternative physics and astrology.

Of course some old-fashioned physicists deplored the fact that the new department felt unconstrained by Newton's Laws of Motion, and worried themselves about the way that their colleagues used the word 'energy' in a way that had no perceptible relationship with the way it used to be used by physicists. These curmudgeons even went so far as to complain about the university's new approach in public. Luckily for Poppleton, their complaints didn't get far. The Department of Education and the Prime Minister gave strong support to the university's 'forward-looking diversification into an emergent and non-elitist area with great revenue-generating potential' and the Royal family discretely signified their approval.

The Quality Assurance Agency report was perfect (fortunately for Poppleton, they take no account of whether what is taught is

true, but only about the amount of paperwork that is generated. The QAA employed that most distinguished of astrologers Russell Grant to chair the assessors, so their report could not be disputed.

The curmudgeons were summoned to the office of the vice-chancellor, who, perceiving that the university's income (and his own knighthood) were in danger, informed them that the old-fashioned physics department would be closed altogether. The new department went from strength to strength, despite the fact that evidence for the success of its moon-lander was a bit thin. In private it was admitted that they may have failed to dilute sufficiently the rocket fuel with water, and there may have been an unfortunate error in the calculation of planetary alignments by the new sub-department of Astrology (it seems that herbal tea had been spilled over their astrolabe).

(Taylor, 0000.)

Absurd? Not at all. This is precisely what has happened in medical sciences in several universities in the UK (and in far more many in the USA). We haven't (yet) got any departments of Alternative Physics but we certainly have departments of Complementary and Alternative Medicine (CAM). Well, usually they call themselves 'Complementary Medicine', because that sounds more respectable than 'alternative'. The proper term is 'alternative' because they can't be considered as 'complementary' to medicine until such time as they are shown to work. And when and if that happens, they will just be part of medicine. Until that happens they are merely snake-oil. In the words of Richard Dawkins, 'Either it is true that a medicine works or it isn't. It cannot be false in the ordinary sense but true in some "alternative" sense' (Dawkins, 2001).

### How big is the problem?

The UK Universities and Colleges Admissions Service (UCAS, [www.ucas.com](http://www.ucas.com), accessed December 2006), reveals sixty-one courses for 'complementary medicine', of which forty-five are 'Honours Bachelor of Science' degrees, eleven are two year 'foundation' degrees in science and one is an 'Honours Bachelor of Arts' (see Table 1).

(With apologies to the inimitable Laurie Taylor, creator of the University of Poppleton.)

**Table 1: Title?**

	Courses	BSc	2FT	BA	Subjects
Anglia Ruskin University	2	2			Ar, R
University of Brighton	1	1			Ac
University of Central Lancashire	3	3			M. Ar, He, Ho
University of Derby	1			1	Ar, Re, M
University of East London	2	2			M. P
University of Glamorgan	1		1		N, Ch
University of Greenwich	5	4	1		Ar
Leeds Metropolitan University	1	1			Ac, He
University of Lincoln	2	2			Ac, He
Middlesex University	4	4			He, Ch, Ay
Napier University, Edinburgh 1	3	3			Ar, R, He,
The University of Salford	3	3			R, Ho, M
Southampton Solent University	1	1			M, R
Thames Valley University	1		1		Ac, Ar, Ho
University of Westminster	14	14			N, Na, Ac, M, Ho, He, C
University of Wolverhampton	1	1			Ar, R
Number of institutions	16				
Number of courses	45	41	3	1	

**Table 1**

Courses in CAM offered by UK universities via UCAS (December 2006). This table excludes 17 courses in 13 institutions that are not called universities but which have degree-awarding powers and are offered on UCAS. All BSc degrees are described as Honours degrees except where noted. The last column indicates the main subject areas. Subjects: Ac, acupuncture, Ar, aromatherapy. Ay, Ayurveda. C, traditional Chinese medicine. Ch, chiropractic. He, herbal medicine. Ho, homeopathy.. N, nutrition. Na, naturopathy. R, reflexology. M, various forms of massage ('therapeutic bodywork', 'therapeutic massage', shiatsu, Indian head massage). P, pilates.

Notes. <sup>1</sup> Two of the three degrees are described as ordinary BSc

These courses cover many subjects, the main ones being aromatherapy, acupuncture, traditional Chinese medicine, herbal medicine, reflexology, osteopathy and homeopathy.<sup>1</sup> There is also therapeutic bodywork, naturopathy, nutrition, Ayurveda, Shiatsu and Qigong.<sup>2</sup> The most common subjects are as follows.

- Reflexology: seven courses, four of which are 'Bachelor of Science' degrees, and three three are two-year foundation degrees in 'science'.
- Homeopathy: five courses, all 'Honours Bachelor of Science' degrees in three institutions, University of Salford, Central Lancashire and Westminster.
- Traditional Chinese Medicine: six courses, all 'Honours Bachelor of Science', in three places, Middlesex University, The North East Wales Institute of Higher Education and Westminster University.
- Acupuncture: ten courses in seven places, all but one being 'Honours Bachelor of Science'.
- Aromatherapy: ten courses in eight institutions, seven being 'Honours Bachelor of Science'.
- Herbal Medicine: eight courses in six institutions, all 'Honours Bachelor of Science'.

There is one thing that is very noticeable about the institutions listed in Table 1. Every one of them is a 'post-1992' university. These are the polytechnics or colleges of higher education that were given the status of universities by John Major's government in 1992. They are mostly not very distinguished in research (though there are some notable exceptions), but they do an excellent job of teaching in many areas. It is sad that some of them have chosen to do great harm to

- [1] Students completing the homeopathy modules gain a 'First Aid Certificate in Homeopathy'. University of Salford, ([www.chssc.salford.ac.uk/programmes/ugrad/cmhs.php](http://www.chssc.salford.ac.uk/programmes/ugrad/cmhs.php))
- [2] 'Our vision sees therapeutic bodywork as a method for restoring and developing the natural order inherent in the human being. The word therapeutic indicates our attitude towards actively working with the client in a "healing partnership". The word bodywork relates to our use of the body as a primary resource for managing the continuum of experiences that a lifetime produces. We work with symptoms such as pain and stiffness, to postural and body use issues, to emotional and attitudinal influences. In other words working with the client and their relationship to their body to foster growth, expansion of awareness and conscious choice to bring aliveness, fluidity and enrichment to daily life.' (University of Westminster, [www.wmin.ac.uk/sih/page-289](http://www.wmin.ac.uk/sih/page-289)). For discussion of naturopathy see [www.naturowatch.org](http://www.naturowatch.org)

their reputations as serious academic institutions by offering BSc degrees in subjects that are not, by any stretch of the imagination, science. Only the University of Derby is honest enough to describe its degree as a Bachelor of Arts, though in fact all the degrees are designed to lead to licences to practise CAM, so in practice it makes little difference what the degree is called.

Table 1 lists only degree courses. There is a lot more 'alternative medicine' around than that, especially if one includes university hospitals. In that case you can add to the list Glasgow, Southampton, Bristol, York, London, the Open University and quite a lot of others. In some of these cases, though, the responsibility lies with the NHS Trust, not with the university, so they fall outside the scope of this paper.

#### *Nutrition therapy*

I shall not deal with courses on nutrition in detail, because many of them are excellent. It is worth mentioning, though that some courses are no less fraudulent than most CAM. The word to look for is 'therapy'. Its presence should ring alarm bells because it usually means that nutrition is not being used in the sense of healthy eating, but as a cure-all panacea for every illness (as long as you buy enough highly priced 'nutritional supplements' from the salesman). Two cases are worth a mention.

The University of Middlesex validates honours degrees in 'nutritional therapy' that are run entirely by a private company, the Centre for Nutrition Education and Lifestyle Management (CNELM, [cnelm.co.uk](http://cnelm.co.uk)). Their 2007 brochure carries the rather bizarre slogan 'Caring for and Nurturing our future Evolution through the successful support of our genetic code'.<sup>3</sup> Another cause for deep suspicion is that their programme includes Neuro-linguistic programming (NLP). This is an unvalidated new age method described by Stephen Barrett under the heading 'Mental Help: Procedures to Avoid'.<sup>4</sup> A US National Research Council committee found no significant evidence that NLP's theories are sound or that its practices are effective (Druckman, *et al.*, 1988).

The University of Bedfordshire validates external two year foundation degrees run by the 'Institute of Optimum Nutrition' ([www.ion.ac.uk](http://www.ion.ac.uk)). Their rather optimistic motto is 'The Doctor of the future will no longer treat the human frame with drugs, but rather

[3] [www.cnelm.co.uk/Prospectus%20UG%202007.pdf](http://www.cnelm.co.uk/Prospectus%20UG%202007.pdf)

[4] [www.quackwatch.org/01QuackeryRelatedTopics/mentserv.html](http://www.quackwatch.org/01QuackeryRelatedTopics/mentserv.html)

will cure and prevent disease with nutrition.’ Their course brochure, which starts with a large advertisement for their pill sales arm, offers ‘an optional extra year’s study to raise the Foundation degree to a full BSc’, validated by the University of Luton.<sup>5</sup> The validation procedures of the University of Bedfordshire, in its previous incarnation as the University of Luton, are so poor that even the Quality Assurance Agency (see below) was able to spot them, in its 2005 report.<sup>6</sup> These are not ‘mickey-mouse degrees’; they are much worse than that.

Sometimes degrees in vocational subjects, things like ‘golf-course management’, are referred to as ‘mickey mouse degrees’. While it is true that, for better or worse, the nature of some universities has changed, I see nothing wrong with degrees in golf course management. They certainly have not got much intellectual content compared with the standard degrees in, say mathematics, physics or French, but they are honest. They are what it says on the label. Nobody is likely to mistake them for something they are not. The same cannot be said of degrees in homeopathy or reflexology. It is simply dishonest to award a Bachelor of Science degree in a subject that is not science. I’d better justify that statement, in case anyone doubts it.

*How many of these courses are ‘science’?*

I’d maintain that none are. More to the point, quite a lot of CAM advocates would agree. Often it seems that CAM people suffer from a curious schizoid tendency. On one hand they are often positively antipathetic towards science, which is regarded as some sort of evil hegemony (though that certainly does not stop them spreading their views on the internet; that bit of science is apparently OK). Yet at the same time they love to use scientific-sounding words (though very often with a meaning that is different from the way the same word is used in science, or, only too often, with no discernable meaning at all). They are also eager to embrace the (rare) cases where science appears to endorse their views; at this point the antipathy to the evil hegemony vanishes in a puff of smoke. Examples are given below. This behaviour is entirely characteristic of pseudoscience, and that is precisely what most CAM is.

---

[5] December 2007, [www.ion.ac.uk/Info%20brochure%202006.pdf](http://www.ion.ac.uk/Info%20brochure%202006.pdf)

[6] [www.qaa.ac.uk/reviews/reports/institutional/Luton1105/RG162UniLuton.pdf](http://www.qaa.ac.uk/reviews/reports/institutional/Luton1105/RG162UniLuton.pdf)

The Prince's Foundation for Integrated Health provides a telling example. His website is well worth a look ([www.fih.org.uk](http://www.fih.org.uk)). It is the source of some of the wackiest advice on health that you can get anywhere. For his work on 'regulation' of CAM (see below), the Prince's Trust was given £900,000 of taxpayer's money by the Department of Health at a time when the Health Service is in financial crisis. (The question of whether it is proper for a constitutional monarch to intervene so directly in matters of public policy is one that I won't try to deal with here.) For some trenchant comments, see an editorial in the FASEB Journal, by Gerald Weissmann.

The Prince of Wales sponsored an economist, Christopher Smallwood, to produce a report on *The Role of Complementary and Alternative Medicine in the NHS* (Smallwood, 2005). Ernst has summarised some of the errors and misleading statements in this report: he comments 'I withdrew my cooperation when I became convinced that this was no honest attempt at finding the truth' (Ernst, 2006). Richard Horton, editor of the *Lancet*, said 'Let's be clear: this report contains dangerous nonsense', and 'We are losing our grip on a rational scientific medicine that has brought benefits to millions, and which is now being eroded by the complicity of doctors who should know better and a prince who seems to know nothing at all' (Horton, 2005).

Smallwood's report



**Smallwood** was widely reported in the media as advocating wider use of CAM on the NHS, but for the present purposes the really interesting thing is that it did nothing of the sort. It was very obviously sympathetic to the Prince's aims, but despite that, it actually came to the following conclusion (page 17).

Our principle recommendation therefore is that Health Ministers should invite the National Institute of Health and Clinical Excellence (NICE) to carry out a full assessment of the cost-effectiveness of the therapies which we have identified and their potential role within the NHS in particular with a view to the closing of 'effectiveness gaps'.

What this means, in plain English, is that all their efforts to find evidence for the effectiveness of CAM produced results that were so unconvincing that they ended up by recommending that someone else (NICE) should have a go. In fact this advice has not been followed. It may not be over-sceptical to think that this is because NICE, if it were to use its normal criteria, would certainly conclude that most of the therapies were unproven or disproved. Incidentally, the Prince's Foundation also publishes 'Complementary healthcare:

a guide for patients' which shows little or no trace of the uncertainty that Smallwood found about the effectiveness of the treatments that it recommends.<sup>7</sup>

Next I'll cite a couple of examples of the more extreme anti-science sentiments that have been published recently.

- 'I wish to problematise the call from within biomedicine for more evidence of alternative medicine's effectiveness via the medium of the randomised clinical trial (RCT).'
- 'Ethnographic research in alternative medicine is coming to be used politically as a challenge to the hegemony of a scientific biomedical construction of evidence.'
- 'The science of biomedicine was perceived as old fashioned and rejected in favour of the quantum and chaos theories of modern physics.'
- 'In this paper, I have deconstructed the powerful notion of evidence within biomedicine ...' (Barry, 2006).

And if you think that is bizarre, just try this one from Holmes, Murray, Peronn and Rail (Holmes *et al.*, 2006). Their paper starts thus.

Drawing on the work of the late French philosophers Deleuze and Guattari, the objective of this paper is to demonstrate that the evidence-based movement in the health sciences is outrageously exclusionary and dangerously normative with regards to scientific knowledge. As such, we assert that the evidence-based movement in health sciences constitutes a good example of microfascism at play in the contemporary scientific arena.

It is interesting to compare these quotations with this one.

Rather, they [natural scientists] cling to the dogma imposed by the long post-Enlightenment hegemony over the Western intellectual outlook, which can be summarized briefly as follows: that there exists an external world, whose properties are independent of any individual human being and indeed of humanity as a whole; that these properties are encoded in 'eternal' physical laws; and that human beings can obtain reliable, albeit imperfect and tentative, knowledge of these laws by hewing to the 'objective' procedures and epistemological strictures prescribed by the (so-called) scientific method. (Sokal, 1996)

They sound pretty similar in tone. But there is one difference. The last quotation is the opening of Alan Sokal's spoof paper which was

[7] [www.fih.org.uk/NR/rdonlyres/75C60D68-A115-42E5-A523-3DF7AC96D72/0/ComplementaryHealthcareaguideforpatients.pdf](http://www.fih.org.uk/NR/rdonlyres/75C60D68-A115-42E5-A523-3DF7AC96D72/0/ComplementaryHealthcareaguideforpatients.pdf)



accepted in a 'serious' journal. This episode led to publication of his book *Intellectual Impostures*, which did so much to demolish the absurd pretensions of postmodernism (well, apart from the two examples above; apparently it lives on in the murkier recesses of CAM) (Sokal and Bricmont, 1998). More relevant to our present topic is another essay by Sokal, 'Pseudoscience and Postmodernism: antagonists or fellow-travelers?', in which he argues that there is a 'curious convergence between pseudoscience and postmodernism' (Sokal, 2006).

Papers like these show an extreme form of antipathy to science (not to mention a giant chip on the shoulder), but similar attitudes can be found everywhere in the world of alternative medicine.

I'll state my position plainly. Of the topics that are the subject of the university degrees listed below in Table 2, two are self-evident nonsense, and for the rest the evidence base is far too weak for them to be the subject of degrees. I'd better justify that statement, for each of the main areas.

### Homeopathy

The easiest one to deal with is homeopathy. That is simple: most of the time, the medicine contains no medicine. There is no point in beating about the bush. Homeopathy is plain fraud. The degrees on offer are shown in Table 2 below.

**Table 2: Title?**

University of Central Lancashire	
Homoeopathic Medicine	3FT Hon BSc
The University of Salford	
Complementary Medicine and Health Sciences	3FT Hon BSc
Homeopathy in Practice (top-up)	2FT Hon BSc
University of Westminster	
Health Sciences: Homeopathy	3FT Hon BSc
Health Sciences: Homeopathy with Fdn (4 yrs)	4FT Hon BSc

#### *Empirical evidence for homeopathy*

The *Lancet* declared 'The End of Homeopathy' (yet again) in 2005 (*Lancet*, 2005).

Surely the time has passed for selective analyses, biased reports, or further investment in research to perpetuate the homoeopathy versus allopathy debate. Now doctors need to be bold and honest with their patients about homoeopathy's lack of benefit, and with themselves about the failings of modern medicine to address patients' needs for personalised care.

And the UK's first professor of CAM, Professor Ernst, concluded there were no effects greater than placebo, and that is after almost 200 years of 'research' (Ernst, 2005). No real scientist believes it. These conclusions came 164 years after Oliver Wendell Holmes (father of the famous Supreme Court Justice, and one-time dean of Harvard Medical School) wrote his famous essay 'Homeopathy and its kindred delusions' (Holmes, 1842). Later he wrote thus.

Some of you will probably be more or less troubled by that parody of medieval theology which finds its dogma in the doctrine of homeopathy, its miracle of transubstantiation in the mystery of its dilutions, its church in the people who have mistaken their century, and its priests in those who have mistaken their calling. (Holmes, 1871)

What is perhaps even more relevant is that it is surprisingly common for homeopaths themselves to admit that the evidence is very unconvincing (see also the reference to the Smallwood Report, above). True, they are much more likely to admit this when talking among themselves, than when engaging with scientists. For example, Verhoef, Lewith *et al.*, say

Some of this conflict originates from the fact that many rigorous studies of CAM interventions appear to produce equivocal or negative outcomes when evaluated in the context of a conventional RCT. For instance, the Southampton research group's study on homeopathic immunotherapy for asthma was a large, well-powered and rigorous clinical trial that failed to demonstrate a difference between verum and placebo in the context of the patient's asthma. (Verhoef *et al.*, 2004)

Another example is provided by Peter Fisher, Clinical Director of the Royal London Homeopathic Hospital and homeopathic physician to the Queen. Fisher represents the more reasonable end of the homeopathic spectrum. I first came across him when I was asked by a television programme to reanalyze a trial by Fisher, Greenwood, Huskisson, Turner and Belon, which claimed a positive effect for homeopathic treatment of primary fibromyalgia (Fisher *et al.*, 1989). It turned out that a simple mistake had been made in the statistical

analysis, and there were actually no effects (Colquhoun, 1990).<sup>8</sup> At the end of a trial that found 'no evidence that active homeopathy improves the symptoms of rheumatoid arthritis', Fisher concludes, 'It seems more important to define if homeopaths can genuinely control patients' symptoms and less relevant to have concerns about whether this is due to a 'genuine' effect or to influencing the placebo response' (Fisher, 2001).

This appears to be an explicit admission that it doesn't matter whether homeopathy is better than placebo or not!

In an editorial in the journal *Homeopathy* (2006), following the *Lancet's* declaration of 'The End of Homeopathy' in 2005, Fisher says, almost wistfully, 'And one cannot deny that the impact of allopathy on reality in recent times has been much greater than that of homeopathy' (Fisher, 2006).

And, referring to the *Lancet's* 'wishful claim that the end of homeopathy is nigh', 'Yet Vandembroucke's remark about changing reality is a telling one: we need to find ways to enable homeopathy to change human reality more than it has, and for the better.'

Perhaps this is wishful thinking on my own part, but these comments sound to me very like the rueful thoughts of a middle-aged Anglican vicar who, having some time ago lost his faith, nevertheless feels unable to admit it openly in case it affects his livelihood.

When challenged about the efficacy of some of his treatments, Dr Fisher referred me to the National Library for Health Complementary and Alternative Medicine Specialist Library (NeICAM, [www.library.nhs.uk/cam](http://www.library.nhs.uk/cam)). That library is compiled entirely by people sympathetic to CAM. As of 31 July 2006, I found twenty-seven entries relating to the assessment of homeopathy. Not a single one of these entries concludes that there is good evidence for the effectiveness of homeopathic treatment in any condition. Is this the best they can do?

Much the same conclusion can be drawn from the US equivalent ([www.nccam.nih.gov/health/homeopathy](http://www.nccam.nih.gov/health/homeopathy)), though curiously, given the enormous funding of the US National Center for Complementary and Alternative Medicine (NCCAM), this page has not been updated since April 2003. Incidentally, NCCAM has received almost a trillion dollars (\$842 m). What has the US taxpayer had for

---

[8] It is interesting that this correction has had only had seven citations (excluding self-citations) by December 2006, compared with seventy-two citations for the original paper that claimed to provide evidence for the effectiveness of homeopathy.

this money?' ... it has not proved effectiveness for any "alternative" method. It has added evidence of ineffectiveness of some methods that we knew did not work before NCCAM was formed.' (Sampson, 2004).

Another example comes from the well-known homeopath, George Vithoulkas. His book *The Science of Homeopathy* [sic] is one of those recommended by the University of Westminster for its homeopathy students. On his website, one can read the following remarkable statements.

The rejuvenation and renaissance of Homeopathy that we have been witnessing over the past thirty years seems lately doomed to take a downward turn toward a point of degeneration, confusion and, finally, even oblivion ... We have had a lot of problems persuading people that Homeopathy is a Science. Now, with all this nonsense, we are once again reinforcing their arguments claiming that Homeopathy is a 'non-science'. (Vithoulkas, 2006)<sup>9</sup>

What is odd about this stance is that, despite their obvious doubts about the evidence, luminaries of CAM like Fisher, Lewith and Vithoulkas continue to practice it, and to defend it stoutly in public (they may even sell products in private which they themselves have deplored in public).<sup>10</sup> At a debate held at the Natural History Museum in London, Peter Fisher declaimed with supreme confidence 'Does homeopathy work? Yes, of course it works.'<sup>11</sup> No sign of public doubts there.

Most pharmacologists are too busy trying to do useful things to give a moment's thought to such nonsense. Every day pharmacologists measure curves that show response increasing as you increase the concentration of a drug. What else would you expect? Homeopaths, on the other hand maintain that the response gets bigger as you *decrease* the concentration of the drug, though they have never been able to produce a graph that shows such nonsensical behaviour. They maintain it because it says in their holy book, Hahnemann's *Organon*, not because they have seen it happening. Of course the fact that homeopathic pills, which usually contain nothing whatsoever (apart from sugar), have no effect could have been

double quotation marks

[9] In the interest of accuracy, I should point out that what Vithoulkas thinks is wrong is not homeopathy itself, but modern homeopaths who have strayed from the ways of the holy book and are therefore using an ineffective form of homeopathy.

[10] See, for example, <http://www.dcscience.net/improbable.html#lewith1>

[11] [nhm.ac.uk/nature-online/life/plants-fungi/301106homeopathy/does-homeopathy-work.html](http://nhm.ac.uk/nature-online/life/plants-fungi/301106homeopathy/does-homeopathy-work.html)

an advantage to patients in Hahnemann's time. It would have saved them from the physicians who often did more harm than good in 1830. But medicine has moved on, and homeopathy has not.

It would be a mistake to think that, just because homeopathic pills contain nothing but sugar that homeopathy is safe. Of course the pills themselves are totally safe, it is the homeopaths that constitute a danger to health. People like Peter Fisher are not much danger. He is clearly deeply embarrassed by fellow homeopaths who regularly do irresponsible things like recommending homeopathic pills to prevent malaria, and who recommend people not to get vaccinated (Schmidt and Ernst, 2003).<sup>12</sup> But the internet is overflowing with offers by homeopaths to treat really serious diseases. For example, the homeopath Robert Lee Dalpé, writes about West Nile fever.

Homeopathy offers a unique alternative for treatment if the disease is contracted, especially in the more severe cases ... Looking over the remedies that repertorized out, I see that Lachesis came out with the strongest emphasis. Note also that Crotalus horridus is there as well. This indicates to me that snake remedies in general may be useful for this disease. So I have added Vipera as the 22nd remedy even though it did not repertorize down, but exists in one of the two larger rubrics. So we must consider all snake remedies here. A technique of prescribing Sheilagh Creasy once taught me was to 'switch snakes' as required in a case. So, all snakes are 'on the table', as it were.<sup>13</sup>

This sort of dangerous gobbledegook is what you get when you abandon reason. Incidentally, Sheilagh Creasy, mentioned here, is a member of the team that teaches the homeopathy 'BSc' at the University of Westminster.<sup>14</sup>

The analogy between homeopathy and religious sect is remarkable.<sup>15</sup> That includes the charismatic leader, the holy book and also the internecine strife so characteristic of religious sects. Here is an example from Dr Richard H. Pitcairn, May 2002, Past President of the Academy of Veterinary Homeopathy in the USA.<sup>16</sup>

---

[12] The facts about malaria prevention were revealed by Sense About Science (<http://www.senseaboutscience.org.uk/index.php/site/project/71/>) and the BBC Newsnight programme (<http://news.bbc.co.uk/1/hi/programmes/newsnight/5178122.stm>).

[13] <http://www.onlinehomeopath.com/westnile.shtml>, December 2006.

[14] [www.wmin.ac.uk/sih/page-59](http://www.wmin.ac.uk/sih/page-59)

[15] National Council Against Health Fraud, December 2006, [www.ncahf.org/pp/homeop.html](http://www.ncahf.org/pp/homeop.html)

[16] Grundlagen & Praxis, International Discussion: basis of homeopathy, December 2006; [www.grundlagen-praxis.de/debatte/englisch/short.pdf](http://www.grundlagen-praxis.de/debatte/englisch/short.pdf)

... I too have been very concerned about the direction homeopathy is taking. It seems that so many people want to practice in contradiction to the principles Hahnemann so carefully discovered. It is presenting as 'progress' but my experience is that these approaches are ineffective as so many of my colleagues that have gone to practitioners of the 'new methods' are not helped at all.

Homeopaths are a bit like creationists: they prefer to rely on ancient dogma rather than to think. It is the lazy approach.

*What are students taught on homeopathy degree degrees?*

So what are students actually taught? Most academics are happy to tell you what they teach, and many course materials are freely available to anyone. But not homeopaths. The University of Central Lancashire turned down (three times) a request under the Freedom of Information Act 2000 to make available some of the teaching materials used on their 'BSc' in homeopathy. Clearly they are embarrassed by the idea that the public (who paid for them) might see what they teach. (I am still waiting for result of an appeal to the Information commissioner.)

You can get a good idea from what goes on from the examination question shown in Figure 1 (below). This exam was set by the University of Westminster in 2005 (I'm not giving anything away; past papers are available to students on the University website).

What does all this mean? Consider the words 'Miasmatic nature'. The miasmatic theory held that diseases like cholera and plague were spread by foul air, known as miasmas. This theory originated in the Middle Ages and lasted until the middle of the nineteenth century. It was used, for example, to explain the spread of cholera in London. The word 'miasm' was used in a similar sense by homeopaths, 'miasms' being the source of chronic diseases. Here are the words of the master.

The true natural chronic diseases are those that arise from a chronic miasm, which when left to themselves, and unchecked by the employment of those remedies that are specific for them, always go on increasing and growing worse, notwithstanding the best mental and corporeal regimen, and torment the patient to the end of his life with ever aggravated sufferings. These are the most numerous and greatest scourges of the human race; for the most robust constitution, the best regulated mode of living and the most vigorous energy of the vital force are insufficient for their eradication. (Hahnemann, 1833)

Figure 1

**Cavendish Campus**  
**School of Integrated Health**  
**BSc Complementary Therapies Scheme**

**Module 3CTH 502**  
**Homœopathic Materia Medica 2A**

Module Leader: Mark Paine

**Section B**  
 Answer **ONE** question  
 Total marks available 50.

---

**KALI CARBONICUM** and **TUBERCULINUM** are both in the rubric "obstinate, headstrong." (*Synthesis*)

Explain why these two remedies appear in this rubric. Clearly differentiate between them in relation to the rubric, focusing on their physical, general and mental/emotional picture.

**OR**

**PSORINUM** and **SULPHUR** are *Psoric remedies*.

a) Discuss the ways in which the symptoms of these remedies reflect their miasmatic nature. (35 marks)

b) Define and differentiate between the features of the two remedies. (15 marks)

According to Hahnemann there are three miasms: 'psora', 'sycosis' and 'syphilis'.<sup>17</sup> Later homeopaths added for example the Tubercular, Cancer and Aids'.<sup>18</sup>

[17] Psora, psoric, miasm [Lat. *psora, psorae* – Pliny itch, mange]. Samuel Hahnemann, the founder of homeopathy considered Psora as the most important miasm and the psoric miasm as the fundamental cause of disease. *Alternative Encyclopedia*, December 2006, <http://www.homeopathy.healthspace.eu/miasm/psora.php>.

See also Wikipedia, [http://en.wikipedia.org/wiki/Classical\\_homeopathy#Miasms](http://en.wikipedia.org/wiki/Classical_homeopathy#Miasms)

[18] [www.homeopathy.healthspace.eu/regular/homeopathy.php#Miasms](http://www.homeopathy.healthspace.eu/regular/homeopathy.php#Miasms)

Delete highlighted bits and insert

<http://www.lyghtforce.com/homeopathyonline/issue2/educate3.html>

Of course, the problem of cholera was solved when it was shown by John Snow, in 1854, that cholera was spread through contaminated water, not 'miasmas', and the mechanism became clear when Robert Koch discovered the micro-organism that causes cholera in 1883. Science moved on, and, with a lot of hard work, discovered something true about the causes of disease. The superstitious ideas about miasmas vanished. Well, they vanished for all rational people, but homeopathy remained stuck firmly in the 1830s. Figure 1 shows that the homeopaths of the University of Westminster still think it appropriate to set exams on miasms in 2006. You couldn't make it up if you tried.

I'll finish with a couple of quotations from one of the wittiest denunciations of homeopathy I've encountered.<sup>19</sup>

When Hahnemann speaks of 'Psora, the Mother of all true chronic diseases,' he creates a new version of Lilith, a demoness of disease, conquerable with the Vitalism that is likewise an invisible spirit. He further taught of the authority of 'Health, a spiritual power, autocracy [or] vital force.' This Spiritual Power also known as Vitalism is the 'good' spirit of the universe at odds with Psora the 'bad' spirit in the universe.

I have tried to find a nuttier popular health fad than homeopathy and there is none.

Hahnemann, the L. Ron Hubbard of his day, even claimed that reading his book was sufficient to frighten away many of the Psora 'itches' or demonic spirits) inhabiting sick people's bodies, and he aggressively sold the book to patients as a 'medicine' in and of itself.

This stuff is, it seems, called 'science' by the University of Westminster (see Figure 1).

*On the nonsense of dilutions and the 'memory of water'*

I'll repeat, briefly, the well-known fact that many homeopathic medicines contain no trace, not a single molecule, of the ingredient on the label. The commonly used 30C dilution means dilution by a factor of  $100^{30} = 10^{60}$ . That means that, on average, there is one molecule in a sphere with a diameter of  $1.46 \times 10^8$  km<sup>7</sup> which is close to the distance from the earth to the sun. That's hard to swallow. Put another way, 1g of starting material will produce  $10^{60}$  g of the final dilution.

---

[19] [www.paghat.com/fothergill.html](http://www.paghat.com/fothergill.html)



That is of the order of the mass of the observable universe.<sup>20</sup> No wonder the profits of the homeopathic industry are so big. Even a single feather would be enough to make a vast number of pills (that is not a joke, by the way; you can buy homeopathic owl feathers).

Many homeopaths like to say (misleadingly) in public that they use 'very high dilutions', but most will admit in private that any dilution greater than about 12C is unlikely to contain a single molecule of the material on the label. That is the point when the really zany pseudoscience starts. The structure of water has been studied intensively by serious scientists. It is true that water molecules will form structures round a solute but at room temperature, thermal motion of water molecules ensures that these structures are very short-lived, of the order of picoseconds. One of the most recent estimates is even faster, in the femtosecond range. Cowan *et al.* conclude, 'Our results highlight the efficiency of energy redistribution within the hydrogen-bonded network, and that liquid water essentially loses the memory of persistent correlations in its structure within 50 fs' (Cowan *et al.*, 2005).

That is a pretty lousy shelf life.

How do homeopaths escape this? Here are two laughable attempts.

Peter Fisher, at the end of the debate at the Natural History Museum said, 'It's true, If you take a homeopathic medicine to an analytical chemist and say 'What's in here?', he'll say it's lactose, water and alcohol. Which is quite true.'<sup>21</sup>

So far, so good. But he then went on to say that his gigabyte memory stick would, according to a chemist, be made almost entirely of silica with trace impurities of boron and phosphorus. 'Yet it can hold a lot of information'. 'So this property of simple chemicals storing large amounts of information is actually commonplace. What actually is so implausible about this? The possibility that water actually stores information and then transmits it to the body.'

The analogy is so obviously naive that it needs no comment. But at least it isn't pretentious. That can't be said of many attempts.

George Vithoukias, author of *The Science of Homeopathy*, makes this attempt. 'Just as physics moved from the Newtonian era into the concepts of modern physics, the field of medicine is slowly beginning to understand the realms of energy fields in the human body.'

---

[20] e.g. <http://curious.astro.cornell.edu/question.php?number=342>

[21] See above note 11.

That of course is simply not true. There isn't the slightest reason to believe in the existence of the 'energy fields' so beloved by quacks. One can read endless tedious invocations of relativity, quantum entanglement by homeopaths most of whom could probably not be able to differentiate  $e^x$ , never mind understand quantum theory. It is all pure pseudoscientific gobbledygook. It is also the subject of Bachelor of Science degrees at three UK universities, as well as endless courses and diplomas.

The result of having a homeopathy degree in a multi-faculty university is that you have one department teaching that effect increases with dose (backed by endless observations) and another department teaching exactly the opposite (backed by nothing but a holy book). In fact some students are taught both conflicting views, so 'on Mondays and Thursdays (for example) the students must believe that response increases with dose, but on Tuesdays and Fridays they are called upon to believe that response decreases with dose.'<sup>22</sup>

Perhaps the real clincher came after *Nature* published a collection of attacks on the incursion of homeopathy into universities.<sup>23</sup> After this appeared, I debated the question with Dr Peter Fisher, Clinical Director of the Royal London Homeopathic Hospital, and the Queen's homeopathic physician. The interview concluded thus.

*Riz Lateef* (presenter): Dr Fisher, could you ever see it [homeopathy] as a science degree in the future?

*Dr Peter Fisher*: I would hope so. I wouldn't deny that a lot of scientific research needs to be done, and I would hope that in the future it would have a scientific basis. I have to say that at the moment that basis isn't comprehensive. To that extent I would agree with Professor Colquhoun.

So we are now in the absurd position that the UK's most senior homeopath agrees that there is not a sufficient scientific basis to make homeopathy a BSc degree, but vice-chancellors of universities do not agree.

### Reflexology

Reflexology is just foot massage, and there is nothing wrong with that if it makes you happy. Unfortunately the massage is accompanied by a lot of gobbledygook. It is alleged, without a fragment of

[22] <http://dcscience.net/?p=83>

[23] *Nature*, 446 (date), 373- 4. See also <http://dcscience.net/?p=19>

Delete repeated bio (insert 'see above' ?)

2007

evidence, that particular areas on the foot are linked to other areas of the body. You can see the hilarious charts in many places.<sup>24</sup> The Association of Reflexologists, after giving a long list of conditions for which it claims (falsely) that 'Reflexology has been shown to be effective for', then says (more realistically) that 'Reflexology does not claim to cure, diagnose or prescribe' ([www.reflexology.org](http://www.reflexology.org)). So what *does* it do? Consider this bit of sheer fantasy.

Reflexologists believe that sensitive and trained hands can detect tiny deposits and imbalances in the feet. And by working on these points the reflexologist can release blockages and restore the free flow of energy to the whole body. It is believed that nerve endings are unable to transmit their impulses because of crystalline deposits that build up and block their pathway. Reflexology is believed to clear these crystalline deposits.

Reflexology lies firmly in the realm of pseudoscience. To give Bachelor of Science degrees to people who manage to memorise such fantasies is the height of irresponsibility.

### Acupuncture

Unlike the cases of homeopathy and reflexology, there is nothing inherently absurd about acupuncture. It is pretty obvious that sticking needles into your body will produce signals in the brain. Of course that does not mean that sticking needles into you will benefit any particular medical condition. There is a bit of suggestive evidence that it may help a few conditions but the evidence is very thin indeed for a practice that is so widely used. What is really objectionable about acupuncture is the mumbo jumbo that accompanies the needles. Take a typical exposition of the 'principles' of acupuncture.<sup>25</sup>

'There are 14 major avenues of energy flowing through the body. These are known as meridians.'

- The energy that moves through the meridians is called Qi.
- Think of Qi as 'The Force'. It is the energy that makes a clear distinction between life and death.

---

[24] e.g. The Modern Institute of Reflexology, December 2006, [http://www.reflexologyinstitute.com/reflex\\_chart.php](http://www.reflexologyinstitute.com/reflex_chart.php)

[25] December 2006, <http://www.anewdayhealingarts.com/acupuncture.htm>; see also Wikipedia <http://en.wikipedia.org/wiki/Acupuncture> .

- 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, this language sounds a bit like that of physics. But it is not. The words have no discernable meaning whatsoever. In any case, there is some empirical evidence that it doesn't matter where you put the needles; whatever effects you get are much the same wherever you are pierced. So much for 'ancient wisdom'. One shouldn't really be surprised: the main characteristic of ancient wisdom is that most of it is dead wrong.

No respectable university could subject students to this sort of mumbo-jumbo, pretending that it is science.

### **Herbal medicine**

Herbal medicine is in a different category from homeopathy, reflexology and acupuncture. It is pharmacology, not black magic. Several useful medicines came originally from plants and there could well be more waiting to be found. The only thing that distinguishes 'herbal medicine' from pharmacology is that the former consists, almost entirely of things that are not yet proved to work, and are not standardised. To offer a 'BSc' degree in unproven treatments (see Table 1) is absurd.

First remember that plants did not evolve for the benefit of humans. Natural selection ensures that plants, like every other living thing, evolve in a way that maximises their own chance of survival. To ensure this, plants should be as toxic as possible to anything that might eat them. The more harm a plant does to humans, the better its chance of survival. It is sheer luck that a few of the toxic principles evolved by plants occasionally turn out to be useful.

A pharmacological example may make matters clearer. The 24th edition of Martindale's *Extra Pharmacopoeia* (1958) describes *Digitalis Leaf* (B.P., I.P.), also known as Digit. Fol.; Digitalis; Foxglove Leaf; Feuille de Digitale; Fingerhutblatt; Hoja de digital. It was defined as 'the dried leaves of *Digitalis purpurea* (Scrophulariaceae).'

At that time it was sometimes prescribed as *Prepared Digitalis* (BP), which is 'Digitalis leaf reduced to powder, no part being rejected, and biologically assayed the strength being stated in units per g. For therapeutic purposes it must be adjusted to contain 10 units in 1 g.' Sometimes foxglove leaf was prescribed as *Tincture of Digitalis* (B.P., I.P.).

It may be made from unstandardised leaf, the tincture being subsequently biologically assayed, or it may be made from prepared digitalis, using a quantity containing 1000 units per litre, by percolation or maceration, with alcohol (70 %). It contains 1 unit per ml. I.P. allows also 1 unit per g. Dose: 0.3 to 1 ml. (5 to 15 minims).

Although these preparations are now totally defunct, they were still better than the sort of thing that is now advocated by herbalists. Why? They were better because they were standardised.

heart

Foxglove leaves contain several chemical compounds that are useful in certain forms of **hear** failure. But the margin of safety is quite low. Take a bit too much and it kills you not cures you. One batch of foxglove leaves will contain different amounts of active compounds from the last batch, and that endangered patients.

From the 1930s onwards, pharmacologists and statisticians went to great efforts to develop methods of biological assay that overcame this problem. An international standard digitalis leaf sample was established. Every new batch had to be assayed against this standard, and diluted to a fixed level of biological activity. This ensured that each batch of digitalis powder had the same biological potency as the last batch. It was a great pharmacological advance in its time, though of course it did involve the use of animals for the biological assay.

All this was solved when the active principles were purified from the foxglove leaves. There was no longer any need to use animals for biological assays. The right amount of pure digoxin or digitoxin could be weighed out.

Herbalists want to go back to the times before 1930, using impure *and* unstandardised plant extracts. In this case, and all others I can think of, there is not the slightest reason to think that the impure mixture in the leaf is any better than the purified active principles. Of course there *could* be such cases. But that is just idle speculation

You cannot base a Bachelor of Science degree on idle speculations.

### Traditional Chinese medicine

Traditional Chinese medicine is much like herbal medicine. It differs in two obvious ways. It does not restrict itself to plants but includes things like shark fin, tiger bones, rhinoceros horn (though not, as far as I know, eye of newt or toe of frog). It also differs in having in being overlaid with layers of magic; the same sort of tedious talk about 'Qi', 'Yin and Yang' that acupuncturists like to mouth, but which has no discernable meaning.

Since the medicines do contain something (unlike homeopathy) it is not inconceivable that they might work, but the few well conducted clinical trials that have been done have failed, with very few exceptions, to show anything much that is useful.

Chinese medicine has also suffered from political promotion in China, for reasons of nationalism (and perhaps to save money). There it is still an accepted part of the health system, rather than, as in the West, being restricted to the lunatic fringe. Even in China, though, there is no government-promoted 'Chinese Physics'. Perhaps that is simply because it is a lot easier to tell whether an electronic toy works than it is to tell if a medicine works.

Like herbal medicine, Chinese 'remedies' are totally unstandardised and there have been many reports of toxicity either through overdose, or as a result of contamination with toxic compounds.

It is hard to see why, in 2006, this sort of mediaeval approach to medicine continues to exist. It is harder still to understand why any university should consider it an appropriate subject for a Bachelor of Science degree.

Next I shall consider why it has not yet vanished.

#### **The accreditation of degrees and the Quality Assurance Agency**

The tradition of Staff Xmas Dinners at Poppleton is one of the few elements of university life that has not been validated by competent authorities. To remedy this situation, the specially constituted Xmas Dinner Committee has issued the following guidelines.

*All members of staff who wish to attend such functions are urged to participate in one of the special Staff Development Workshops on Social Interaction that are being held every weekday evening in the Staff Development Complex.*

All departments intending to hold a Staff Xmas Dinner are required to submit a statement of Dining Aims and Outcomes and indicate the manner in which learning outcomes will be assessed. All diners will be required to complete a Post Dining Questionnaire that includes learning outcomes and a TQA (turkey quality assessment). (Taylor, 2006.)

Laurie Taylor's parody captures beautifully the tide of bureaucracy that has engulfed universities. It would not be so bad if the bureaucracy accomplished anything useful, but most of it doesn't. There are two mechanisms that are intended to ensure that university degrees reach a satisfactory standard. First, courses must be accredited

before they can run. Once they are running they are subject to scrutiny by the Quality Assurance Agency for Higher Education (QAA).

Nothing illustrates more perfectly the total failure of both mechanisms than the existence of 'BSc' degrees in subjects that are not science. In fact it is worse than that. The accreditation mechanism and the QAA actually appear to endorse courses that might otherwise have been treated with the derision they deserve.

#### *Accreditation*

'Accreditation' is an elaborate bureaucratic process that is designed to perpetuate the fallacy that degrees are of high quality and comparable in different institutions. What happens in real life, of course, is that courses in things like homeopathy or naturopathy are accredited by homeopaths and naturopaths. Barmy courses get barmy assessors so the process of accreditation provides no protection whatsoever against courses in homeopathy (or astrology, or voodoo).

#### *The Quality Assurance Agency for Higher Education (QAA)*

The QAA declares that 'We safeguard and help to improve the academic standards and quality of higher education in the UK.' For this job we, the taxpayers, pay them £11.5 million annually. One might expect that they would have noticed that some universities are awarding 'BSc' degrees in subjects that are not, by any stretch of the imagination, science. But in that expectation you would be disappointed.

The QAA report on the University of Westminster courses awards a perfect score for 'Curriculum Design, Content and Organisation'. It did not worry the assessors that the content consists of early nineteenth century myths, not science. As with all academic reports, the view one takes of the opinions depends on who expressed those opinions, but the authors of the report are anonymous **\*\*\*waiting to see if I can get the names].**

delete



The chief executive of the QAA, Peter Williams, pointed out to me that it would be unacceptable for the QAA to interfere with university autonomy, and it would indeed be a bad thing if we were told what to do by a government agency. But if, as seems to be the case, non-interference extends to giving high scores to the content of nonsense degrees, it is hard to see what use the agency can be. It should be abandoned if it can't do better than that. In fairness, it has been

given a job that is impossible to do. The real blame lies with vice-chancellors.

#### *Regulatory agencies*

In addition to the mechanisms that are meant to regulate the standards of degrees, but fail to do so, there also some mechanisms that are meant to regulate CAM itself. There is some regulatory legislation and there is the Medicines and Healthcare products Regulatory Agency (MHRA). Both have done more harm than good because both have chosen to ignore the one vital question, 'does the medicine work?' The only result of this sort of regulation is to give the impression of government approval to treatments that mostly don't work. There can be no more graphic illustration of the age of spin and delusion. How does such a ludicrous state of affairs come about? As far as one can tell, it is a result of both political and royal pressure, and of commercial pressure from the CAM industry. The health of the homeopathic industry is clearly more important to the government than the health of people. The recent decision of the MHRA to allow untrue labels to be put on homeopathic pills and herbal medicines has not done much to help the cause of reason. This decision resulted in annulment debate in the House of Lords, and was condemned by the Royal Society, the Medical Research Council, the Academy of Medical Sciences, the Royal College of Pathologists, the Biosciences Federation (which represents forty affiliated societies), the Physiological Society and the British Pharmacological Society.

The reason that all these attempts at regulation have failed so badly is that none of them, incredibly, has thought it necessary to consider whether the medicines that they are meant to regulate actually work. Once again, you couldn't make it up if you tried.

#### **The dilemmas of alternative medicine**

Hard experience has shown that anyone who deplores witchcraft in medicine is immediately accused of neglecting the human side of medicine.

First, then, I must say there is nothing wrong with holism; every conventional physician is taught to treat the patient as a whole, and does so insofar as time and skill allow. And there is absolutely nothing wrong the placebo effect. If a patient says they feel better, then they do feel better, and it doesn't matter to the patient whether that was the result of a kind word, or a green coloured sugar pill. Medical



science has achieved marvels in the last 150 years. Just think of life without anaesthetics (general and local), antibiotics or artificial hips. That being said, it must be admitted that there is a great deal that medicine cannot do. It can do nothing for the common cold, and precious little for back pain. Most pharmacology (antibiotics excepted) is palliative rather than curative. If, as is only too often the case, there is nothing much that a physician can do for a patient, then anything that can be done to support the patient, to make them happier, is a good thing. BUT it should be done as honestly as possible. This leads to several very real dilemmas.<sup>26</sup>

#### *The definition dilemma*

Once any treatment is shown beyond doubt to be affective, it ceases to be 'alternative' and becomes just like any other part of medical knowledge. That means that 'alternative medicine' must consist entirely of unproven treatments.

#### *The lying dilemma*

- Suppose that a treatment owes *all* its effectiveness to the placebo effect, e.g. homeopathy. In some people, at least, the placebo effect is quite real. It may be a genuine physical response, though one that does not depend on any activity of the drug, or other treatment, though quite often it is probably merely the passage of time that gives the illusion of effectiveness.
- If placebo effects are real, it would be wrong to deprive patients of them, if there is nothing more effective available. For example, if terminal cancer patients say they feel better after having their feet massaged by a 'reflexologist', why should they not have that small pleasure?
- If the foregoing argument is granted, then it follows that it would be our duty to maximise the placebo effect. In the absence of specific research, it seems reasonable to suppose that people who are susceptible to placebo effects will get the best results if their treatment is surrounded by as much impressive mumbo jumbo as possible.
- This suggests that, in order to maximise the placebo effect, it will be important to lie to the patient as much as possible, and certainly to disguise from them the fact that, for example, their homeopathic pill contains nothing but lactose.

---

[26] e.g. [http://dcscience.net/?page\\_id=10](http://dcscience.net/?page_id=10)

- Therein lies the dilemma. The whole trend in medicine has been to be more open with the patient and to tell them the truth. Physicians are no longer allowed to prescribe a placebo if they call it, honestly, a placebo, but they are allowed to prescribe them if they lie to the patient (and quite possibly to themselves too) and call it a homeopathic pill. To maximise the benefit of alternative medicine, it is necessary to lie to the patient as much as possible.

As if telling lies to patients were not enough, the dilemma has another aspect, which is also almost always overlooked. Who trains CAM practitioners? Are the trainers expected to tell their students the same lies? Certainly that is the normal practice at the moment. Consider some examples.

#### *The training dilemma*

If a foot massage makes patients feel better, then they should have it. But then it might be thought necessary to hire professional foot massagers who have been trained in 'reflexology'. If the medicine-free sugar pills of the homeopath produce a good placebo effect then it might be thought necessary to hire a professional homeopath, skilled in the mumbo-jumbo of that subject. But who does the training? It cannot be expected that any respectable university will provide a course that preaches the mumbo jumbo of meridians, energy flows and Qi as though they were science

How are we to escape from these dilemmas? The lying dilemma could be solved if effort were put into looking for ways of giving the best possible supportive care for patients for whom nothing else can be done, without resorting to ancient gobbledygook and with lies kept, at least, to a minimum.

It is the training dilemma that is the main concern of this article. It would be solved automatically if people were to abandon treatments based on superstition and myth, but there is little chance of that happening soon, given the power and the mendacity with which superstition and myth are marketed. But there are hopeful signs that the NHS may be persuaded to abandon useless treatment. It would help enormously if regulatory agencies and the Advertising Standards Authority insisted on honest advertising and labelling. At the moment they do not, but it is not **the** impossible that they might be persuaded to do so.

In the end, though, it is vice-chancellors of universities who must take responsibility for what is taught. If they come to realise the

delete 'the'

harm that they do to the prestige of their universities by awarding Bachelor of Science degrees in subjects that are not science, one problem at least will be solved.

### References

- Barry (2006). Barry, C.A., 'The role of evidence in alternative medicine: contrasting biomedical and anthropological approaches', in *Social Science and Medicine*, 62 (2006), 2464-57.
- Colquhoun (1990). Colquhoun, D., 'Reanalysis of a clinical trial of a homoeopathic treatment of Fibrositis', in *Lancet*, 336 (1990), 441-2.
- Cowan *et al.* (2005). Cowan, M.L., Bruner, B.D., Huse, N., Dwyer, J.R., Chugh, B., Nibbering, E.T., *et al.*, 'Ultrafast memory loss and energy redistribution in the hydrogen bond network of liquid H<sub>2</sub>O', in *Nature*, 10 (2005), 434:199-202. ??
- Dawkins (2001). Dawkins, R., from the foreword to *Snake Oil* by John Diamond (Vantage, 2001).
- Druckman and Swets (1988). Druckman, D. and Swets, J.A., *Enhancing Human Performance* (National Academy Press, 1988).
- Ernst (2005). Ernst, E., 'Is homeopathy a clinically valuable approach?', in *Trends Pharmacological Science*, 26 (2005), 547-8.
- Ernst (2006). Ernst, E., 'The Smallwood report: method or madness?', in *British Journal of General Practice*, 56 (2006), 64-5.
- Fisher *et al.* (1989) Fisher, P., Greenwood, A., Huskisson, E.C., Turner, P., Belon, P., 'Effect of homoeopathic treatment on Fibrositis (primary fibromyalgia)', in *British Medical Journal*, 299 (1989), 365-6.
- Fisher (2006). Fisher, P., 'Changing reality', in *Homeopathy*, 95:1 (2006), 1-2.
- Fisher and Scott (2001). Fisher, P. and Scott, D.L., 'A randomized controlled trial of homeopathy in Rheumatoid Arthritis', in *Rheumatology (Oxford)*, 40:9 (2001), 1052-5.
- Hahnemann (1833). Hahnemann, S., *Organon of Medicine* (5th edn, 1833), available at <http://www.homeopathyhome.com/reference/organon/organon.html>
- Holmes (1842). Holmes, O.W., *Homeopathy and its kindred delusions* (1842). Full text at <http://www.quackwatch.org/01QuackeryRelatedTopics/holmes.html>

Nature. 2005;434  
(7030):199-202

Washington, DC:

Holmes (1871). Holmes, O.W., *Medical Essays. The Young Practitioner*, A Valedictory Address delivered to the Graduating Class of the Ballymore Hospital College, March 2, 1871.

available at

<http://www.fullbooks.com/Medical-Essays>

Holmes *et al.* (2006). Holmes, D., Murray, S.J., Perron, A., Ran, G., 'Deconstructing the evidence-based discourse in health sciences: truth, power and fascism', in *International Journal of Evidence-Based Healthcare*, 4 (2006), 180-6.

Horton (2005). Horton, R., 'Rational medicine is being undermined', in the *Guardian* 8 Aug 2005, <http://www.guardian.co.uk/letters/story/0,,1587525,00.html>

*Lancet* (2005). Editorial, 'The End of Homeopathy', in the *Lancet*, 336 (2005), 690.

Martindale, *Extra Pharmacopoeia* (pub.details)

24th edition 1958 The  
Pharmaceutical Press, London

Prince's Foundation for Integrated Health, December 2007.

Sampson (2002). Sampson, W.I., 'Why the National Center for Complementary and Alternative Medicine (NCCAM) should be defunded', <http://www.quackwatch.org/01QuackeryRelatedTopics/nccam.html>

Schmidt and Ernst (2003). Schmidt, K. and Ernst, E., 'MMR vaccination advice over the internet', in *Vaccine*, 21:11-12 (2003), 1044-7.

delete

Sokal (1996). Sokal, A.D., 'Transgressing the boundaries: towards a transformative hermeneutics of quantum gravity', in *Social Text*, 46/47 (1996), *Science Wars* 217-52.

[http://www.physics.nyu.edu/faculty/sokal/transgress\\_v2/transgress\\_v2\\_singlefile.html](http://www.physics.nyu.edu/faculty/sokal/transgress_v2/transgress_v2_singlefile.html)

Sokal (2006). Sokal, A.D., 'Pseudoscience or fellow-travelers?', in *Archaeological Fantasies*, ed. G.G. Fagan (Routledge, an imprint of Taylor & Francis Books Ltd, 2006).

Sokal and Bricmont (1998). Sokal, A.D. and Bricmont, J., *Intellectual Impostures* (Profile Books, 1998; new edn Economist Books, 2003).

Smallwood (2005). Smallwood, C., 'The role of complementary and alternative medicine in the NHS. The Prince's Foundation for Integrated Health', October 2005, <http://www.fih.org.uk/NR/rdonlyres/214DE09D-0BD6-4CAB-908C-33E2B71093AE/0/Smallwood.pdf>

Taylor (2006). Taylor, L., in *Times Higher Educational Supplement*, 14 November 2006.

Taylor (0000). Taylor, L., in *Times Higher Educational Supplement*, (date)

Verhoef *et al.* (2004). Verhoef, M.J., Lewith, G., Ritenbaugh, C., Thomas, K., Boon, H., Fønnebø, V., 'Whole systems research: moving forward', in *Focus on Alternative and Complementary Therapies (FACT)*, 9 (2004), 87-90.

Vithoukas (2006). Vithoukas, G., 'Is Hahnemannian Homeopathy doomed to go in to oblivion again?', International Academy of Classical Homeopathy 2006

[http://www.vithoukas.com/EN/homeopathy-doomed\\_oblivion.html](http://www.vithoukas.com/EN/homeopathy-doomed_oblivion.html)

2000

Vithoukas (0000). *The Science of Homeopathy* (pub. details)

Grove Press / Atlantic Monthly Press (27 Oct 2000)

Weissmann (2006). Weissmann, G., 'Homeopathy: Holmes, Hogwarts, and the Prince of Wales', in *The FASEB Journal*, 20 (2006), 1755-8. <http://www.fasebj.org/cgi/content/full/20/11/1755>).