reviews

BOOKS • CD ROMS • ART • WEBSITES • MEDIA • PERSONAL VIEWS • SOUNDINGS

Alternative Medicine

BBC 2, Tuesdays at 9 pm from 24 January to 7 February

Rating: ★★★★

The three programmes in this series investigate acupuncture, healing, and herbal medicine. The investigator is Kathy Sykes, professor of public engagement in science and engineering at Bristol University, who has an inviting manner, a polite scepticism, and friends who give her access to expensive equipment, such as the powerful magnetic resonance scanner at the University of York. She speaks enthusiastically, direct to camera, as she strides through the crowded streets of Shanghai in search of a master acupuncturist who will explain to her exactly how acupuncture works, or driving (apparently alone) across the deserts of Arizona to test the theory that gifted healers really can heal.

The trailer to the series on the BBC 2 website promises that she "begins her journey in China where she hears and sees powerful evidence that acupuncture works. The most astonishing is a scene in a Chinese hospital in which doctors perform open heart surgery on a young woman using acupuncture instead of a general anaesthetic." Well, yes: the patient is a conscious 21 year old factory worker who has had sedative drugs, and her chest is "numbed" (presumably by local anaesthetic), so it is difficult to assess the contribution the numerous acupuncture needles make to her calm compliance.

We see patients whose pain from osteoarthritis of the knee was relieved by acupuncture; Dr Brian Berman, director of the Center for Integrative Medicine at the University of Maryland School of Medicine, testifies that the benefit of true acupuncture is significantly greater than that of sham acupuncture; and Edzard Ernst, professor of complementary medicine at Peninsula Medical School, agrees that acupuncture seems effective in treating osteoarthritis of the knee.

The grand finale is Professor Sykes and colleagues showing that when a needle is pushed through the skin of a volunteer whose head is in a brain scanner there is visible activity in the limbic area, but when it is pushed further, and the volunteer experiences a change in qi (a sensation related to energy running through acupuncture meridians), there is a change in brain activity. It is claimed that this observation may fundamentally change the way we think about the ability of acupuncture to relieve pain.

It is easy to criticise programmes of this genre, because all the scientific niceties are not, and cannot be, fully explained

The third programme, on herbal therapies, taps that part of alternative medicine in which important advances in therapy are most likely to be found. Of course, plants have been the source of many conventional drugs of proven value, but perhaps herbs containing several active components might make them more effective (or more harmful) than pure synthetic drugs. Simon Mills, a herbalist whom Professor Sykes consults, diagnoses her condition as "hot damp," and says he would treat it with herbs that tend to "cool and dry." There is little to be said for this, and Professor Sykes's expression of disbelief is an adequate response.

It is easy to criticise programmes of this genre, because all the scientific niceties are not, and cannot be, fully explained. If they were, many viewers would be bored and simply switch channels. Yes, Professor Sykes overstates the significance of studies which, she says, "proved" something worked, when to an academic audience she might have said they supported that hypothesis. She is not, however, addressing academics, but BBC 2 viewers, and she shows them that it is possible to apply properly designed clinical trials to alternative therapies, for which she deserves congratulation. Even some of our own profession need tuition in that field.

BBC

At the sharp end: presenter Kathy Sykes gets stuck into acupuncture

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Items reviewed are rated on a 4 star scale (4=excellent)

Scientists seek chemical reaction from journalists

Imagine the headline "Water: my miracle hangover cure." Or try "E-numbers for health and vitality!" What about "Chemical cocktail saves baby's life"? If a campaign aimed at changing journalists' perceptions of all things chemical proves successful, these headlines may not prove too wide of the mark.

This week Sense About Science, a charity promoting an evidence based approach to scientific issues, launched a media briefing paper, "Making Sense of Chemical Stories" (www.senseaboutscience.org.uk). Its aim: to make mincemeat of six misconceptions that surround the science of substances.

These range from the patently ludicrous (that you can lead a "chemical-free life") to the sadly deluded (that natural chemicals are somehow healthier than synthetic ones). Sense About Science says that not only are such misconceptions ignorant and dangerous, encouraging people "to buy into ideas and 'remedies' that make little scientific or medical sense," but they are also so widespread now that the facts about chemicals often seem "surprising and counter-intuitive."

Putting their name to the paper are some eminent figures. Pathologist Sir Colin Berry, for example, is quoted voicing his frustration at the numerous claims that a "detox diet" will improve liver function.

But how likely is it that those voices of informed common sense such as Sir Colin's ("One of the most poisonous chemicals that many people encounter is alcohol") will be heard? Journalists can be conservative creatures. And besides, messages such as his ("... the only thing you can do to help your liver after a period of indulgence is to stop drinking alcohol and drink water to rehydrate") don't make such sexy copy. The terms leopards and spots come to mind.

Sense About Science director Tracey Brown, however, is confident of success. The campaign, she explains, is aimed neither at serious science correspondents (who are largely blameless, she says) nor those at the wackier end of the media (who, one assumes, are lost causes). Rather, it is targeted at those occupying "the middle ground"—the reporters, columnists, and advice givers in the increasingly popular health, food, family, and general lifestyle areas of the mainstream media. These are the people responsible for turning what were once fringe issues into common, though misplaced, concerns.

Yet they are never on the invitation lists to science briefings or on the circulation lists for press releases from the scientific community, Brown says. Offered the opportunity to contact real scientists to obtain facts and informed opinions—as Sense About Science is giving journalists as a major part of its chemicals campaign—they will jump, she maintains.

Maybe the organisation will be lucky. Indeed, a taster of its paper, dispelling the myth of "detoxing," was released in early January and achieved widespread coverage. It saw 12 scientists interviewed back to back over three days.

However, the organisation is not the first to try to encourage greater journalistic awareness and responsibility. The charity Mind has long tried to encourage better informed reporting on mental health issues, yet headlines such as "Bonkers Bruno," when boxer Frank Bruno found himself sectioned under the Mental Health Act, still make appearances. Anny Brackx, Mind's information director, says that despite some improvements, "we're not there yet."

It is 15 years since Mind first held an information campaign aimed at journalists. Those hoping for some sensibility to be injected into the headlines of chemicals stories on the lifestyle pages would be wise, perhaps, not to hold their breath.

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Dream Anatomy

An online exhibition from the US National Library of Medicine
www.nlm.nih.gov/exhibition/dreamanatomy/

Rating: ★★★★

The Dream Anatomy exhibition was on display at the US National Library of Medicine (NLM) in Bethesda, Maryland, from October 2002 to July 2003. Happily, it has been prolonged in digital form.

The exhibition looks at the art of anatomical illustration from the introduction of the printing press in the 15th century to the present day. As the website says, with the arrival of printing, "Anatomical imagery proliferated, detailed and informative but also whimsical, surreal, beautiful, and grotesque—a dream anatomy that reveals as much about the outer world as it does the inner self."

Early images placed the anatomised cadavers in classical artistic poses, perhaps gazing into an Arcadian landscape, standing helpfully so that the onlooker might see the revealed viscera or musculature. By the late 17th century, as the section Body Part as Body Art describes, the anatomical exhibition developed, with both "wet" preparations (preserved in alcohol) and "dry" (injected with resin or wax then dried) often used as the basis for illustrations. Some were more gruesomely frivolous. Frederik Ruysch used prepared skeletons of stillborn infants to create tableaux, reminiscent of the Victorian trend of displaying dressed stuffed animals, but the more disturbing for their human origin.

Towards the end of the 17th century imaginative elements began to be purged in favour of more realistic representation, some of it almost brutal, and the prosthetics of dissection (ropes, props, nails, etc) were increasingly included. However, the artistic aspect persisted in the imaginative use of visual metaphors from industry, such as in Fritz Kahn's modernist physiology from the early 20th century. The exhibition finishes with a description of the NLM's Visible Human dataset, which has sought to make a library of life size cross sections of the human body.

The site is a pleasure to wander through. Thumbnail illustrations with succinct commentary lead with a click to larger images of stunning quality. There are links to the NLM's Historical Anatomies on the Web exhibition (www.nlm.nih.gov/exhibition/historicalanatomies), tempting one down fascinating side tracks.

A landscape of body parts: etching by Frederik Ruysch, 1744

This delightful site will certainly be of interest to clinicians, and also to students of human anatomy, whether from a scientific or an aesthetic point of view.

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ART

Bio-bling: making jewellery from human tissue

MICHAEL VENNINE

With my body I thee worship: a model ring made from bovine marrow bone lined with silver

Although it is not possible to commission a ring for your partner for St Valentine's Day next month incorporating bone grown from cells harvested from your body, such tokens of affection and commitment could well be available in the near future.

Biojewellery is a collaborative project between designer Tobie Kerridge and jeweller Nikki Stott, working at the Royal College of Art, and Dr Ian Thompson, a bioengineer at King's College London (see www.biojewellery.com). Funded primarily by a £60 000 ($107 000; €87 000) grant from the Engineering and Physical Science Research Council, they are working with four couples to create jewellery using laboratory-grown bone tissue cultured from human cells. Each partner in each couple will receive a ring incorporating their partner's bone tissue.

By using tissue engineering to make highly individual rings, the project aims to promote awareness and understanding of an obscure or "hidden" biomedical process; the idea is that by positioning tissue engineering in a broader social or cultural context with meaning for the public, its visibility is increased. Bioactive materials are already used medically and tissue grown in vitro is being used to repair damage resulting from injury or disease. Although some might consider the use of tissue engineering for a non-therapeutic purpose provocative, a public forum at the London Science Museum's Dana Centre earlier this month made a convincing case for biojewellery.

The participating couples were selected from applicants who responded to advertisements in *New Scientist* and *Bizarre* magazine. One of the inclusion criteria was a need for each partner's wisdom teeth to require extraction, because of decay or overcrowding. Cells harvested from jaw bone chips, removed during extractions, were seeded on to a porous bioactive scaffold and incubated in nutrient for six to eight weeks. The cells divided and grew into the scaffold, replacing it with living bone tissue.

Stott worked with each couple, developing their ideas by making models: either circles of bovine marrow bone lined with precious metal rings for durability or animal bone fragment "gems" set into traditional gold or silver rings. When their own human bone samples are ready, she will make each couple's paired rings. Stott's previous work was inspired by the forms and materials of medical instruments and also cell imaging. As she has observed, biojewellery is a 21st century development based on historic precedent: man has worn bone ornaments for thousands of years and 19th century Victorians wore lockets containing locks of hair or mourning brooches, made from the hair of their dearly departed.

It remains to be seen if wedding planners eventually enlist the aid of maxillofacial surgeons to make biojewellery rings for their clients' nuptials; or if the concept reaches high street jewellers. For now, biojewellery is a useful tool for raising public awareness of tissue engineering, which will culminate in an exhibition documenting the project at Guy's Hospital, London, in June.

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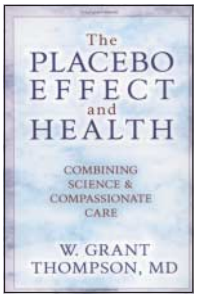
The Placebo Effect and Health: Combining Science and Compassionate Care

W Grant Thompson



Prometheus Books, $18, pp 350
ISBN 1 59102 275 4
www.prometheusbooks.com

Rating: ★★★☆

Every doctor knows the word placebo, but how many have given serious thought to the subject? Misconceptions about the use of placebos and the placebo effect are common in medicine. For example, many believe that the placebo effect wears off after three months and that about 35% of people respond to placebos. Such misconceptions are unlikely to disappear in the near future, but *The Placebo Effect and Health* makes a good attempt at setting the record straight.

My initial thought was that this was just another book on the placebo effect, but I was wrong. Instead W Grant Thompson has elegantly summarised the past 50 years of research into the placebo effect and presents the findings in the context of randomised clinical trials and evidence based medicine. In doing so he has achieved two things. Firstly, by treating the randomised clinical trial as the standard research tool for evaluating the effects of healthcare interventions the author explains why some of the supposed facts about the placebo effect are wrong. For instance, in a trial of a drug the "placebo effect" is not the same as any effect found in a control group, as this will result from other factors as well, such as spontaneous improvement. Secondly, by using our knowledge about the use of placebos and the placebo effect in clinical research he shows why the randomised clinical trial is the cornerstone of evidence based medicine—by indicating exactly what the purpose of the placebo control is and why it is so difficult to gather information on the placebo effect (trials of a placebo against a group of participants who receive no intervention at all cannot be double blind).

These areas are covered well in the first two parts of the book. Unfortunately there is a third part. In chapters with titles such as "Strangers in the consulting room," "Healthcare systems and the placebo effect," and "Physicians, heal yourselves" the author shifts from interesting and accessible science to other types of information that readers are unlikely to find relevant: anecdotes from drug company representatives, for example, and descriptions of healthcare systems in different countries. I would advise readers to avoid disappointment and not read this third part.

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PERSONAL VIEWS

Do doctors who volunteer their services in disasters overseas do more harm than good?

Recently we returned from the area in Pakistan affected by October's earthquake, having provided care to people suffering in its aftermath. Nothing could have prepared us for the distressing scenes we saw. Whole generations have been lost; millions of people have been left homeless and thousands of children orphaned.

As in all recent natural disasters there was an outpouring of charity from the public and a rush to the scene of scores of emergency relief organisations. These ranged from recognised, regulated official organisations to unregulated and ad hoc groups. Many individual overseas medical professionals volunteered their help and inundated the afflicted areas. However, although well meant, their help led us to question whether volunteer doctors do more harm than good.

We found several issues of concern. Firstly, it was notable from the outset that there were numerous foreign doctors operating makeshift clinics in camps for the survivors. Many were unable to communicate with patients because of language barriers and, surprisingly, were even reviewing patients without translators.

We were alarmed at the number of patients we saw who had received some form of care but were then neglected, with no follow-up plans, which resulted in many patients suffering avoidable complications. We saw patients who had been immobilised in plaster for weeks because of uncertainty about possible fractures and for whom no review had been arranged. Most of these patients had no clinical indication for a plaster cast and had now, as a result of the immobilisation, suffered subsequent muscle atrophy and joint stiffness. A medical director of one camp had his concerns about a particular team that had arrived: it was obvious that some members of the team were learning plaster techniques and applying plasters when a clear clinical need wasn't apparent. Unfortunately, because of the obligation felt by the overburdened local staff all help was gratefully received without question. It was horrifying also to hear from some local people that "doctors were using us as guinea pigs." Sadly this seemed in some cases to be not far from the truth.

> We were alarmed at the number of patients who had received some form of care but were then neglected

We saw other examples of woefully inadequate and dangerous care when reviewing patients on our rounds in the camps. Medical notes were non-existent or, if available, inadequate. Many patients were left with complications after surgery done by inexperienced surgeons and lacked any follow-up.

We were surprised that at no point during our mission were we asked for our credentials. It was assumed that the members of our team were all senior doctors from Britain. It was disturbing that we found that several consultants and specialists working at the camps were shown, on further simple inquiries, to be junior doctors, and in some instances nurses and physiotherapists passed themselves off as doctors.

At one camp two medical students who supervised the daily medical care of several hundred patients were left frustrated at the continual influx of volunteer doctors who had varying management plans that changed as frequently as the doctors. In another camp we found many patients who had been given a cocktail of analgesics and antibiotics for indeterminate periods, prescribed by different volunteer doctors—giving rise to concern about adverse events and antibiotic resistance. Another shocking example of dangerous care was when a volunteer doctor prescribed aspirin for a child with epigastric pain who had already been prescribed diclofenac, ibuprofen, and mefenamic acid by another volunteer.

What we experienced made us question the competence of some volunteer doctors and to ask whether there is or should be a system for checking the background of care providers in such disasters. The examples we saw also raise the question of whether we should, when we volunteer, allow the level and quality of care that we provide in our home countries to be compromised in such environments.

Despite the best intentions of volunteers, it would surely be better for all concerned if they attached themselves to the various well established and regulated bodies that organise the provision of care in such large scale disasters. This would, we hope, eradicate the well intended but unregulated and uncoordinated care provided by medical volunteers. Unregistered organisations should be discouraged from organising and sending medical personnel to disaster areas under their auspices.

All the recognised aid organisations should make more of an effort to communicate with each other better and to coordinate their efforts to provide a structured relief effort in such harsh environments.

TOMAS MUNITA/APEMPICS

Should there be a system for checking the background of care providers in disasters such as the Pakistan earthquake?

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Editorials p 190

Prostitution shake-up: one sex worker's view

My name is Juliet, and I'm a prostitute and dominatrix based in London (zone 2—not central, not suburbs). I'm in my late 30s, white, and well educated, and my background is borderline working/middle class. I operate at the medium price bracket (from £120 ($214; €174) an hour) as opposed to the £30-40 for 30 minutes in a massage parlour or £250 plus charged by most outcall agencies. I use an appointment system (as opposed to spending the whole day at my "office" and seeing people at short notice). All these details alter the kind of experience one has of working in the sex industry—how much of your time it takes up, how flexible you have to be, how much you can plan, and the overheads it takes to stay in business.

I *love* my job. I work for myself, at a wage I set, and I get to make people happy—very happy—for a living. One of the many good things about prostitution is that there's very little bullshit, at least from my clients, who are placed in a situation where there is a clear incentive for them to be open about their needs and respectful in their treatment of me—they get a better experience if I'm trying to make it so. In the five years I've been working I've seen about 5000 clients, and I have never experienced an untoward physical action from a client, or even outright rudeness (though nervous brusqueness or plain lack of social skills are not uncommon). When people ask me about my work, I say that the general conditions are similar to freelance work in any field—uncertainty of income, reluctance to turn down work as you can't guarantee when the next client will come along, needing to offer a better service than the next person to maintain a regular clientele. The conditions specific to the sex industry are the social opprobrium and bikini waxing, and to be honest I tend to skip the bikini waxing.

The government just had a chance to do something about the social opprobrium, though, and they failed enormously. Actually, some of the planned changes are beneficial—allowing more than one woman to work in the same premises, for instance—but the overwhelming media storm of "prostitution is the most common form of child abuse," "by giving money to prostitution you're giving money to drug dealers"—has done no prostitute any favours. The law is an ass, says Dickens, whose tome-like novels were in part an attempt to draw attention to the conditions of the poor and the complexity attached to their situation; he provides a soundbite to rebut the lurid imaginings of Home Officer minister Fiona McTaggart. Prostitution is having sex for money, and neither having sex nor getting paid is inherently degrading, abusive, exploitative, or harmful. Yes, there are women working in prostitution who are coerced or drug dependent or homeless or whose backgrounds have otherwise limited their choices—but the problem is coercion, drug dependency, lack of choices, not prostitution itself.

For the relatively lucky like myself, the law's reluctance to doff its donkey ears will do little damage. Thanks to the legislation that sexual health services be available anonymously, the establishment of the NHS so they are free at the point of delivery, and the enlightened and non-judgmental attitudes that have developed in consequence of the HIV and drug use strategies of harm reduction, I shall continue to visit the specialist clinics I use for my regular sexual health checks and low cost condom and lubricant purchase, and enjoy the benefits of my general practitioner without having to raise his consciousness or deal with his assumptions. For migrants, their dependence on those who have arranged their journey or who employ or house them is enormously increased by the unclear legal situation that can be misrepresented to them. Street prostitutes have been put firmly in their place as the lowest of the low among our demonised underclasses, and simultaneously entrenched as the ultimate downtrodden victim, in a kind of ultra-toxic cartoon version of "you don't have to be mad to work here, but it helps."

> The problem is coercion, drug dependency, lack of choices, not prostitution itself

And all this brouhaha does have an effect. The morning I woke listening to Fiona McTaggart's ill informed and cliché ridden scaremongering on the radio, I was aware all day of my slumped shoulders and gloomy outlook. Studies show that school pupils who are told they are stupid underperform; how the world thinks of us is internalised. The constant abuse of prostitutes and street prostitutes in particular contributes to the low self esteem and emotional degradation we have to face not from our clients but from society itself. The framers of this legislation and those who want to "rescue" us while determinedly ignoring the voice of the sex workers' rights movement and the complexity of our experiences are part of creating the very problems they say they wish to solve.

The author of this article wishes to remain anonymous, but correspondence can be sent c/o linda.cusick@paisley.ac.uk

SOUNDINGS

Emerging infections

Perhaps there are still a few species of rats and mice more numerous than man, but there are certainly more humans than any other large mammals. If the propagation of one's species is a measure of evolutionary success, Homo sapiens is undoubtedly successful.

As space and energy are limited, the proliferation of one species is always at the expense of others. Not only have humans and their domestic stock displaced wildlife, their need for food and shelter is to blame for the disappearance of forests.

The large scale environmental dislocations in the tropics over the past 100 years have triggered a new wave of extinctions and new evolutionary processes: threatened by the disappearance of their traditional hosts, microorganisms ranging from viruses to protozoans have responded to the evolutionary pressure by leaping over host species boundaries to accumulate in humans and their domestic animals.

The simian immune deficiency virus mutated to become HIV and has, in the process, acquired a larger and more promising niche; once limited to the tropical forests of Africa and transported slowly from tree to tree, now it travels from continent to continent by jet. When HIV begins to weaken the immune competence of the host, that host will serve as a training ground for microorganisms hitherto limited to animal or plants hosts to adapt themselves to humans and, at the same time, allow various human pathogens to gain virulence.

Ebola, Lassa, Marburg, SARS (severe acute respiratory syndrome), and other viruses have tried to follow HIV, but their success has so far been limited, for they are too quickly lethal to establish themselves.

Not so influenza; originating in now decimated wild bird species, it has learnt to use poultry and pigs as agents of amplification before it attacks humans.

The killing of civets, pigs, poultry, cattle, and bats, and the attempted eradication of numerous species presumed to be vectors is a predictable, if crude and largely ineffective response.

The conquest of nature is human destiny. As Marx recognised, the world is continuously transformed by human activity—there is no pristine nature. What we are learning now is that however much we manipulate nature, the laws of ecology are universal and supreme.

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