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Contents

Regulars

- 3 – Editorial — Don't Panic — *Barry Williams*
- 4 – Around the Traps — *Bunyip*
- 64 – Letters
- 69 – Notices

Features

- 6 – Pan: The Reaction — *Peter Bowditch*
- 8 – Lessons Still Unlearned — *Stephen Colgan*
- 11 – The Lead Balloon — Pan, Pan, Pan — *Richard Lead*
- 14 – If it Sounds Like a Duck... — *Peter Bowditch*
- 18 – Nutrition Myths — Life in the Raw — *Glenn Cardwell*
- 20 – Agricultural Alternatives — *David Conley*
- 24 – Skepticism and Psychotherapy — *Jill Gordon*
- 30 – Microwaves, etc — *David Vernon*
- 35 – Hairy Diagnosis — *Cholm Williams*
- 36 – Homeopathic — *Borek Puza*
- 38 – Hair Today ... — *Karen Stollznou*
- 40 – Smoke and Reflections — *Martin Hadley*
- 43 – Nigerian Letters — *Leo Igwe*
- 44 – Interview — A Man for all Ages Pt2 — *Richard and Geoff Saunders*
- 48 – Good Word: A Sea of Words — *Mark Newbrook*
- 53 – Forum: The Doctor is In
- 55 – Review: A Sober Appraisal — *Chris Guest*
- 56 – Junior Skeptic — Reviews — *Belinda Bowditch & Gillian Brown*
- 58 – Forum: Three More Doors
- 61 – Getting Involved — Branch Activities
- 63 – News: Science TV in Sydney

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Don't Panic

Can there be anyone who is unaware of the recent scandal concerning Pan Pharmaceuticals Ltd and its failure to comply with proper manufacturing procedures, which led the Therapeutic Goods Administration to institute the compulsory product recall of well over 1,600 (and counting) products? This is by far the largest recall of health-related (or any other) products in the nation's history.

There is some irony in the fact that, although the product that triggered the investigation, Travacalm, was a *Registered* "pharmacy only" medication, Pan was predominantly a manufacturer of *Listed* alternative or complementary medicines and supplements. Most of the recalled items fall within those descriptions and consequently the AltMed industry is now being called to account as never before in its history.

With the media interest at its height, NSW Premier Bob Carr, appeared on TV saying, accurately, "... it appears that most of these products give no more benefit than coloured water"; *Catalyst* (ABCTV) reported on their investigation into herbal remedies, which showed wide variations in the amount of active ingredient and lack of uniformity in many preparations from many manufacturers; Chairman of the Australian Olympic Committee, John Coates, (alert to the threat posed to athletes by inadvertent ingestion of proscribed substances) called for much stricter regulation of the labelling of supplements and dietitians bemoaned the waste of money on expensive and unnecessary vitamin supplements, when sufficient of the real thing was readily available in a normal diet.

As a result, the Commonwealth Government has now introduced legislation requiring a much higher degree of compliance, evidence of efficacy, and accuracy in labelling for manufacturers of complementary

medicines, with very large financial penalties for non-compliance. Further, it has announced an inquiry into the entire alternative medicine industry, to report to Parliament within three months. Although belated, that is not a bad start and is something that Australian Skeptics has been advocating for many years.

Spinning like Shane on steroids

Given that AltMed is a multi-billion dollar industry, it is hardly surprising that spokesmen took to the media in droves, seeking to lay blame at the feet of anyone who they thought might take the heat off their own problems. An alert observer would have noticed that they all seemed to be singing from the same hymn book as they spun the story to make it look less disastrous for the industry.

Among their largely spurious claims are:

"We have the most regulated industry in the world." Untrue, as there was very little regulation of Listed products under the previous TGA regime, though new legislation might (at last) change this. Some European countries already regulate AltMed and pharmaceuticals under the same standards.

"We are a small industry and the Government doesn't give us any financial support to do proper testing for efficacy". True, but the government doesn't give any money to pharmaceutical companies either, and nor should they. Pan was a highly profitable company which could well have afforded proper testing of their products — so can others in the industry.

In a display of sheer effrontery, the Complementary Healthcare Council approached the Federal Government seeking a grant of \$11 million to fund "public education on the benefits of complementary health supplements". Australian Skeptics

wrote to its MP strongly opposing this request. It seems it was denied.

"Many studies have shown ..."
Some studies have given *some* (often marginal) support for *some* benefits accruing from *some* alternative nostrums, but far more, larger and better conducted studies have shown the bulk of them to be worthless. For example, a recent five-year Oxford University study, costing £21m found: "Over five years we saw absolutely no effect. Vitamin pills are a waste of time. There was no evidence of any protective effect against heart disease, cancer or any other outcome. They are safe but they are useless." There are many other such reports.

"People want to take charge of their own health." This is one of the most common claims made both by purveyors and consumers of alternatives. It sounds supremely democratic, but it is actually profoundly idiotic. Most people (even editors) know very little of human physiology, disease, pharmacology or anything else that goes to make up medical science. Rather, we (over 50% of us) have been led to believe, often by an uncritical and compliant media, that anecdote and antiquity are the equal of clinical evidence in deciding the worth of treatments.

Thus we cheerfully self-prescribe medications for self-diagnosed ills and succeed only in creating very expensive sewage.

Look at it another way. Many of us are concerned about airline flying; do we then, if we wish to travel interstate, design and build our own aeroplanes, thereby "taking charge of our own safety and security"? Ludicrous, isn't it?

The following pages carry excellent feature articles addressing different facets of this story in more detail. I commend them to you.

Barry Williams

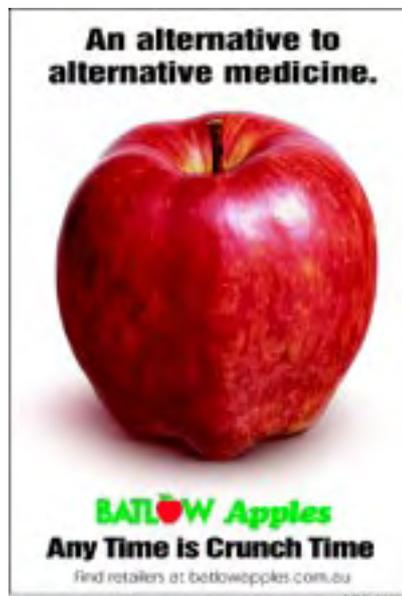
Around the Traps

The right message

Among the hectares of print devoted to the scandal surrounding Pan Pharmaceuticals (much more of which in this issue) and that cataloguing the spin* emanating from a complementary medicine industry desperately seeking to dissociate itself from Pan, some gems stood out.

Notably, our attention was drawn to an advertisement in the *Sydney Morning Herald* which received a nod of approbation from this normally cynical columnist. It showed a shiny Red Delicious apple under the simple (but astute) heading “An alternative to alternative medicine”. This was followed by the invitation to readers wanting more information about apples to contact the Batlow Fruit Co-operative.

So taken were we with the idea that we approached Lachlan Moore, Marketing Manager of Batlow Co-op, seeking permission to reproduce the advertisement in *the Skeptic*. Lachlan graciously gave us permission and also put us in touch with Penny Smith from their advertising agency, Morris & Partners in North Sydney. Penny was



pleased that the ad had attracted the notice of Australian Skeptics and pointed out that it was part of an ongoing campaign for the Australian Apple and Pear Limited division of Horticulture Australia, a body supporting Australian fresh produce growers in R & D and marketing. She also alerted us to similar examples of published advertisements supporting fruit growers that have appeared in the media in recent weeks. All show the familiar Delicious, but with a selection of cogent captions, including:

“The sun. The soil. The rain. A factory you can trust” ; “For vitamins go to your greengrocer” ; “The only time our products are pulled is off the tree” ; “The only recall is how great they taste”.

Simple but effective messages that cut right to the heart of “alternative” medical industry claims to represent “natural” alternatives to orthodox medicine. In fact this industry relies very largely on misuse of the term “natural” to give a respectable cachet to pills and potions that are often far from natural. What, after all, could be more natural than an apple?

Our congratulations go to all involved

Get on the Disc

We have said it before in these pages but, as we firmly believe that if something is worth iterating, it is well worth reiterating, we will say it again: Skeptics really should read the novels of Terry Pratchett.

Pratchett has invented, and sets his stories in, a fantasy world — Discworld — and in the process has deservedly become one of the best selling authors in *this* world (Roundworld). The reasons for this are not too hard to find and they are also why we think the novels are so appropriate for Skeptics.

Discworld is a fantasy world which runs on magic, but it is also very much a real world; far more real than those inhabited by the quacks, creationists, psychics and other cranks who are the bane of every Skeptic’s existence. Incidentally, the books are also very well written and extremely funny.

Here is an example of Pratchett’s approach to life, taken from an interview published in the recently released

* Our in-house electrical engineer has calculated that if, during the Pan affair, all the spinning apologists for the AltMed industry were to be enclosed in a strong magnetic field, sufficient energy would be generated to power a city the size of Adelaide**.

** This footnote might not be factual, but it is true.

The New Discworld Companion (Terry Pratchett & Stephen Briggs; Gollancz, London, 2003). Addressing a question about how the encroachment of Roundworld technology such as guns and steam engines might affect future novels, he referred to a landing on Discworld's moon in one of his earlier stories:

[S]uppose I wrote a book saying that within thirty years of the moon landing millions of people would be duped by bad science and endless hectoring into believing that it didn't happen ... nah, can't do that, too unbelievable in fantasy novel, right?

Dead right

Perils of research I

Researchers at Plymouth University in England recently had a good idea. They decided to subject the old saw, "Give an infinite number of monkeys an infinite number of typewriters and they will eventually produce the works of Shakespeare" to a scientific test.

They tried it out by giving six monkeys one computer for a month, and all the primates made was mess. According to press reports, six Sulawesi crested macaques from Paignton Zoo bashed the computer, occasionally typed a single letter (often S), defecated and urinated on it, and generally behaved like any other students.

Now readers of this column will immediately see some obvious problems with the design of this experiment for testing the maxim — for a start it is hardly scientific at all. The fact is, given infinite numbers of monkeys, typewriters and time it is inevitable that not only will they produce the works of the Bard, but also everything else that has ever been written (including this story) — as well as producing an infinite amount of rubbish.

It will probably come as no surprise to our scientifically literate readers that the research (which was funded by the British Arts Council) was carried out by students in the university's media program. Not so much a scientific experiment, then, as an explanation of the all crap one finds in the media.

Perils of research II

It can't be every day that one of our major learning institutions threatens to irritate almost the entire community, but recently the University of Queensland must have come very close.

In May it awarded a PhD to a student, Rollan McCleary, who had obtained a grant of \$51,000 of public funding over three years, for a thesis on "Gay Spirituality". Nothing much wrong with that — so far. However, in the publicity resulting from the award, it emerged that this candidate had formed the conclusion that Jesus Christ and up to three or four of his disciples were homosexuals. The tabloid media and talk-back radio went into a frenzy, citing the waste of taxpayers' money on such an exercise, while the Christian community was outraged by this perceived slur on their Messiah. No surprises there; they are hardly unexpected reactions from those quarters.

However, it seemed from reports, that the claims made were not simply based on researching the various Gospels and other arguably legitimate sources, the candidate went one better and cast a horoscope for Jesus which, he said, supported his belief. This is an extraordinary claim for any number of reasons. Not even the most hidebound creationist (let alone anyone who knows what they are talking about) would claim to know the exact date and time of the birth of Jesus, not to mention those of any of the disciples — yet this knowledge is alleged to be of crucial importance in casting a horoscope. Furthermore, the middle ages, just when universities were coming into their own as centres of learning, was about the last era in which the study of astrology could have been even remotely considered as a legitimate intellectual exercise. Since then it has clearly been shown to be nothing but a vacuous popular fad.

But the University has since stated that the thesis contained nothing about astrology, nor any conclusions about the sexuality of Jesus, so the criticism of the University (including several nominations for the Skeptics Bent Spoon Award) was unwarranted.

However, from interviews he has given, it seems that Dr McCleary will be pushing these claims in a proposed book and he did strongly defend astrology in those interviews, which gives support to the case that education alone is not a sufficient prophylactic against gullible belief in utter tripe.

April conspiracy

Apropos which, is there anything that conspiracy theorists will **not** accept as proof of their fantasies?

On April 1, SBS showed a clever French "documentary" on a conspiracy associated with the Moon landings. It started quite soberly, with few embedded clues, but by the halfway mark it became clear it was a spoof and improbability piled on impossibility towards the end — it was April 1, after all.

This did not stop the station receiving hundreds of calls asking if the show was genuine, and the 'net almost melted down with cries of "At Last The Truth Is Out" or the like.

Identity crisis

Strange thoughts come to one in hardware stores. The other week Bunyip had occasion to enter one such Aladin's Cave of DIY delight (the one that used to be called BBC, where one was always felt curiously let-down when the staff did not speak in upper crust British accents) to be greeted at the pay-out desk by a sign reading "Positive Identification Required by Patrons Paying by Cheque".

Fair enough from a commercial perspective, no doubt, but it did raise the question of what exactly would constitute "Negative Identification"? Images leapt unbidden to the Bunyopian imagination of official looking cards proclaiming the legend, "This is to certify that the bearer is NOT the Duchess of York, Pope John Paul II or Shane Warne."

Before we go

Did anyone notice whether or not the world ended on May 15?

Bunyip

Pan: The Reaction

If truth is the first casualty of war, then the alternative medicine industry must feel that it is at war.

*It's "Good News" week!
Someone's dropped a bomb somewhere,
Contaminating atmosphere,
And blackening the sky.*

Do you remember Hedgehoppers Anonymous? Neither does anyone else, but everyone remembers their one big hit record. It really was a good news week when someone in the shape of the Therapeutic Goods Administration (TGA) dropped a bomb on Pan Pharmaceuticals, Australia's largest contract packager of "alternative medicines" (and one of the largest in the world), and suspended their manufacturing licence for six months. Everything manufactured by them for the previous several months was ordered to be recalled from stores because the quality control at Pan was found to be, well, non-existent. In their defence, I suppose you don't need to check the quality of the manufacturing process when you can put any old ingredients into bottles and pills and do your product and material testing by just typing numbers into a computer

Predictably, the response of the alternative medicine community has been to attack the messenger. The TGA, which oversees the quality of medical devices and pharmaceuticals in Australia, has been criticised for acting both too hastily and too slowly and even for existing at all. The final spark which blew the Pan fuse at the TGA was a product called Travacalm, used for motion sickness. It has been pointed out to me that this was not any alternative product, but was a pharmacy-only product with the highest level of registration at the TGA. Yes it was, but when you look at something with the highest

classification and you can find tablets in the one package which contain between zero and 700% of the stated active ingredient (overdosing of which chemical can cause temporary psychosis and hallucinations), you have to wonder what was going into the many hundreds of placebos and snake-oil pills that Pan was making for their clients and which had a lesser classification that did not require any proof of efficacy.

One of the diversionary tactics used by the alternative supporters was to concentrate on Travacalm as if this was the only problem found at Pan, and then to try to either prove that it wasn't anything alternative or that there was no real problem anyway and the whole affair was just a smoke screen to allow the destruction of the supplement industry. Truth was not a necessary component of much that was said, and neither, as it happens, was knowledge about herbs and "natural" medicines needed. I found it ironic that I should be placed in the position of telling alternative believers which plants were used to produce which natural drugs. As an example of this, one person who claimed to be knowledgeable in such matters commented that there was no mention of the active ingredient, hyoscyne hydrobromide, in her herbal reference books. Perhaps she wasn't looking under "henbane" for the name of the plant it comes from, or under "scopolamine" for the name that it sometimes goes by.

One particularly egregious piece of lying was by someone who sent a message to a US-based web site saying that Travacalm was only available on prescription (it has the words "Pharmacy Medicine" printed on the box), that Pan made 50% of all pre-



Peter Bowditch, a Vice President of Australian Skeptics, maintains both the rage against quackery, and a website, ratbags.com.au dedicated to that aim.

scription drugs in Australia, and that only the alternative medicines made by Pan had been recalled. I imagine that the writer believed that nobody outside Australia could check on the facts, which are that “Pharmacy Medicine” does not imply prescription only (it means that sales are restricted to pharmacies only, not supermarkets and other outlets), Pan made very few prescription drugs, and almost everything that they made was recalled. Suggestions were made in several places that there had been no complaints about any of the supplements made by Pan so they must have been perfect, but the facts were that the rot of poor manufacturing practice was endemic at Pan. There were also claims made that Pan were totally unaware of any concerns that the TGA had until the recall was ordered, and it came as a surprise. The truth is that the TGA had been at Pan since January and had had to seize computer equipment to stop records being destroyed.

A strange aspect of much of the opposition to real medicine is that people make statements which are either ridiculous or can be disproved in minutes, much like the example above about the Travacalm labelling. I am not sure whether this is just contempt for the audience or pathological lying, where the truth simply does not matter. An example came from a regular spokesperson for the alternative industry, who claims to be a journalist and a professional writer on health matters. In a press release, this person said that the recall was announced on the April 29 (it was the 28th, and the wrong date was used twice so it wasn't a typo), that Pan's “stocks plummeted” in the second week after the recall and other companies' shares rose (Pan shares were suspended from trade on the day the recall was announced so they went neither up nor down in the following week. The writer forgot to mention that the company whose shares benefited most was Blackmore's.), and that on the same day as the Pan recall, the TGA had ordered a recall of some packaged ham.

Ham? The TGA ordered some ham recalled? I immediately checked the ham I had bought for my lunchtime sandwich to see if had an AUST L or AUST R number (I refrained from making jokes about “curing”), but there was nothing there. This “journalist” was so stupid (or so careless) that she couldn't tell the difference between the TGA and the federal Health Department. Still, what are facts when there's quackery to be defended? For the record, the last three recalls ordered by the TGA at the time of writing were Diffiam - C Alcohol Free Solution (February 4), Pan (April 28) and Kotex U tampons (May 30). No ham.

The press release went on to talk about how the Pan recall was part of the great UN/Illuminati worldwide Codex conspiracy to destroy alternative medicine. Evidence of the conspiracy was that the Geneva office of the World Health Organization had been notified of the Pan recall. (Did I mention that some of the alternative supporters are nuts? It doesn't seem to worry many of them.)

Another claim was that the TGA had to be lying about the problems at Pan because it was not possible to have a single packet of medication with the range of ingredient proportions that had been claimed (0-700% in the one package). I was told that there was no way this could happen because the tablets would fall apart and have holes in them if the mixing was that bad. I asked someone at a company which sells packaging machinery for food and pharmaceuticals and his reply was that Pan was “like the Keystone Kops”, and that it was very easy to have this sort of range if you didn't care about quality, only the time and cost of manufacture.

There are two stages where time and money can be saved in this sort of manufacturing process — machine downtime and ingredient blending. We already know that Pan was ignoring correct cleaning procedures when switching machines between products, so it is not too hard to imagine that saving a bit of time in the mixing stage might cause some variability in a product where one kilo-

gram of active ingredient is spread across five million tablets.

One good thing that might come out of this debacle is that the public might start to realise that TGA approval to sell something does not imply that the product or device does anything useful, or even anything at all. There are two levels of approval - “registration”, which requires evidence of safety, quality, and efficacy, and “listing”, which only requires quality and safety. Both are required to have truthful labelling. I was taken to task because I stated in a radio interview that there was no requirement for “complementary” medicines to have any effectiveness at all, and I was sarcastically asked if I had bothered to read the TGA web site before I went on air. Just for reference, I will quote what the TGA says. You will see that most complementary medicines can be sold without any proof that they work.

Products assessed as having a higher level of risk (prescription medicines, some non-prescription medicines and medical devices) are evaluated for quality, safety and efficacy. Once approved for marketing in Australia these products are included in the ARTG as ‘registered’ products and are identified by an AUST R number.

Products assessed as being lower risk (many non-prescription medicines including most complementary medicines and low risk medical devices) are assessed for quality and safety. Once approved for marketing in Australia, these products are included in the ARTG as ‘listed’ products and are identified by an AUST L number.

Australia is about to embark on a great experiment where many people are not going to be able to get their snake-oil supplies for some months. I can confidently predict that we will not see the return of the days when people went through the streets calling “Bring out your dead”, like they did in the heyday of “natural” medicine.



Lessons Still Unlearnt

Following the Pan scandal, it is now time to take stock of the claims made by the proponents of “natural” therapies.



Stephen Colgan is a registered nurse with a honours degree from Monash, in which he did a meta-analysis of the evidence base of Therapeutic Touch. He is currently doing a PhD with the School of Population Health at Melbourne University.

In an article entitled “Good lessons to be learnt from the Pan debacle” recently published on *ABC News Online* as part of their coverage of the Pan Pharmaceuticals recall (<http://www.abc.net.au/public/s850921.htm>), Christopher Dean, chairman of TP Health Limited, manufacturer of Thursday Plantation, Greenridge and Nature’s Remedy products, in a statement claimed that:

When natural therapeutics are well made, and delivered in high potency dosages they produce outstanding results. And they do so more safely than many pharmaceuticals which consist of isolated synthetic molecules that can easily cause many toxic side-effects. A good example is ... Travacalm ... the active ingredient of Travacalm is hyoscine hydrobromide, a synthetic pharmaceutical, not a natural product, which incorrectly dosed rapidly led to serious side effects. This is almost never the case with properly prepared herbal medicine (Dean, 2003).

And that:

Today thousands of scientific studies in published scientific journals clearly support the efficacy and

safety of many hundreds of natural therapeutics. Public figures mindlessly stating the opposite are ill informed and unscientific, relying on outdated belief systems rather than facts (Dean, 2003).

Historic herbalism

An underlying tenet of natural therapies in general and herbalism in particular, is a dogmatic belief that naturally occurring chemicals in plants are superior to those produced by the pharmaceutical industry, even when the active ingredient in both products is the same (Tyler, 1993). Herbal remedies that use whole plants, leaves, roots or seeds are believed to have physiological properties that somehow mystically combine to lessen the possibility of overdose or harm to living creatures (Tyler, 1993).

This tenet can be traced back to biblical references about the medicinal use of herbs and a belief that a beneficent creator would not create diseases without supplying a herb or combination of herbs that could cure these diseases (Dubick, 1986; Huxtable, 1992). Cures that could be easily identified by some similarity,

or “signature” between the plant and illness (Huxtable, 1992). On this basis, plants with heart shaped leaves could be used to treat heart disease and plants with red flowers could “cleanse the blood”. This “Doctrine of Signatures”, or “like cures like” underlies the common names and uses of many plants used in herbal medicine (Huxtable, 1992). For example, Adders Tongue

(*Ophioglossum Vulgatum*) a small plant with a single wide tongue shaped leaf is listed in *Culpeper’s Herbal* (first published in the early 1600s) as useful for treating diseases of the tongue (Leyel, 1971).

A frequent claim made by proponents of “natural therapies” is that they are intrinsically safe and that their use rarely results in serious side effects (De Smet, 2002). This claim has been used by proponents of these therapies in attempts to escape regulation and control of the therapies (Dixon, 1986). There is abundant evidence that “natural therapies”, such as herbal remedies, even when well manufactured and used as directed, pose serious health risks both directly and indirectly, either by interacting with conventional drugs or by delaying effective and appropriate medical treatment (De Smet, 2002). To claim otherwise is to be either blissfully ignorant of the facts or unwilling to accept any evidence that contradicts a set of beliefs based on a myth of the beneficence of nature.

Not-so-benevolent Nature

Hyoscine hydrobromide is a *belladonna* alkaloid with strong central nervous system anticholinergic effects that acts to mediate responses to acetylcholine, a neurotransmitter (Craig & Stizel, 1990; Mims Annual, 2002). Anticholinergic poisoning due to excessive doses of Belladonna

alkaloids can occur due to synthetic anticholinergic drugs as well as the plants from which these drugs were first derived, such as *Atropa belladonna* (Deadly nightshade) and *D. stramonium* (Jimson weed or Stinkweed) (Craig & Stizel, 1990). The symptoms are the same no matter what the source of the alkaloid, as seen in cases of anticholinergic poisoning due to the ingestion of



Comfrey – not as nice as it looks

herbal teas containing these plants (Tyler, 1993; MMWR 1995a; 1995b).

Comfrey, a plant with a long history of human use as a herbal remedy, contains hepatotoxic and carcinogenic pyrrolizidine alkaloids and adverse effects resulting from its ingestion in herbal teas and in tablet form are documented (Hirono, Mori & Haga, 1978; Culvenor, Clarke, Edgar, Frahn, Jago, Peterson & Smith, 1979; Huxtable, Luthy & Zweifel, 1986; Weston, Cooper, Davies & Levine, 1987; Bach, Thung & Schaffner, 1989; Ridker & McDermott, 1989). Pyrrolizidine alkaloids are a group of over 1000 naturally occurring compounds estimated to occur in 3% of all flowering plants. Plants have evolved these compounds as a deterrent against grazing by herbivores (Ridker & McDermott, 1989; Huxtable, 1990). Based on a consideration of the toxicological data on comfrey, in 1984 it was listed as a Schedule 1 poison in Australia, a decision widely criti-

cized by herbalists at the time (Abbott, 1988).

Ginkgo (*Ginkgo biloba*) extracts are advocated for the treatment of Alzheimer’s disease, peripheral vascular diseases and neurosensory problems such as tinnitus. Evidence of efficacy from clinical trials for its use remains inconclusive at best and at worst no better than placebo (De Smet, 2002). Adverse reactions associated with its use range from range from headache, nausea and allergic skin reactions, to seizures and life threatening bleeding (De Smet, 2002; Ernst, 2002).

St John’s Wort (*Hypericum perforatum*) is widely used for the treatment of depression, anxiety; sleep disorders and viral infections (Conover, 2002; De Smet, 2002). Adverse events associated with its use include gastro-intestinal distress, dizziness,

confusion and restlessness. There have also been reports of mania, psychotic relapse in patients with schizophrenia and cardiovascular collapse during the administration of anaesthesia (De Smet, 2002).

St John’s Wort is known to decrease the plasma level of a large range of prescribed drugs, such as anticoagulants, oral contraceptives and anti-viral agents (De Smet & Touw, 2000; Yue, Bergquist, & Gerden, 2000; Ernst, 2002). It is also known to interact with narcotics and anti-depressants (Conover, 2002). There is increasing evidence that St John’s Wort induces a broad range of drug-metabolising enzymes, decreasing plasma levels of corticosteroids and digoxin (Yue, Bergquist, & Gerden, 2000). A list of these and other adverse effects associated with the use of St John’s Wort and other “natural therapies” can be found on the Therapeutic Goods Administration website at: <http://www.tga.gov.au/cm/cm.htm>

Regulation

Complementary medicines in Australia are regulated under the Therapeutic Goods act of 1989 and a set of reforms introduced in 1999. The act is administered by the Therapeutic Goods Administration which maintains a database of all therapeutic goods imported into, supplied in, or exported from Australia, the Australian Registry of Therapeutic Goods (ARTG). Unless specifically exempt or excluded, all therapeutic goods must be included in this database before they can be supplied in Australia. The extent of evaluation of therapeutic products in the ARTG, prior to their release, depends on the product, its recommended uses and the claims made about its efficacy (Briggs, 2002).

Based on an evaluation of risk, medicines in Australia are entered into the ARTG as either Listed or Registered goods. Listed goods, are ones for which the toxicity of the ingredients, the proposed use of the product and evidence of significant side effects or adverse effects from prolonged use are believed to present a low level of risk. The ingredients used to make Listed products are assessed for safety and quality prior to market release but *the efficacy of these products is not evaluated*. A manufacturer of a Listed product, prior to listing, must provide evidence of safety, at least in the form of a history of traditional use. The TGA maintains a list of herbal ingredients and dosages that are permitted for use in Listed medicines. Listed medicines, as low risk products, are limited to only claiming the ability to symptomatically relieve non-serious illnesses or maintain or enhance health or reduce the risk of disease (Briggs, 2002).

Complementary medicines that include restricted herbal ingredients, or are considered to be of sufficient risk or claim to be effective in the treatment, management or cure of specific diseases or conditions must undergo pre-market evaluation for safety, quality and efficacy and may be eligible for listing as Registered

medicines. It is worth noting that the majority of complementary medicines sold in Australia are Listed medicines (Briggs, 2002). In 1997 there were 4500 Listed complementary medicines in the ARTG and less than five Registered complimentary medicines (Drew & Myers, 1997).

Given the "... thousands of scientific studies ... [that] clearly support the efficacy and safety of many hundreds of natural therapeutics" (Dean, 2003) why are there so few Registered complementary medicines listed in the ARTG? In reference to the data used to support the evaluation of a new complementary therapy for inclusion in the ARTG, Dr. David Briggs, the Manager of Scientific Programs in the Office of Complementary Therapies at the TGA, stated that, a "... complete, high quality data package including animal and human studies is rarely available (Briggs, 2002, p. 568).

Big business

In Australia in 2000, it was estimated that approximately \$A 2.3 billion was spent on complementary medicines, in the form of either visits to a practitioner or use of a complementary medicine (MacLennan, Wilson & Taylor, 2002). In 1994, in Europe, an estimated \$US6 billion was spent on herbal medicines in general (Benzi & Ceci, 1997). In 1998, it was estimated that in Europe alone, sales of St John's Wort, for use as an antidepressant, accounted for sales of approximately \$US6 billion (Ernst, 1999). An industry of this size has sufficient resources of its own to fund research into the efficacy and long term safety of its products (Ernst, 1999; De Smet, 2002).

So who is ill-informed?

Given the examples of Comfrey and St John's Wort, a history of traditional use may be of limited value in assessing the pre-market safety of complementary medicines. Acute adverse reactions may be more easily recognized and likely to be reported than adverse reactions that

develop gradually, or reactions that have prolonged periods of latency (Culvenor *et al*, 1979; De Smet, 1995). The perception of low-risk associated with many complimentary medicines may instead reflect an incomplete understanding of the actions of these drugs (Ernst, 1999). In Germany, post marketing follow-up of more than 4,800 herbal medicines led to many of them being withdrawn from sale, or their use restricted due to safety concerns (Benzi & Ceci, 1997). To claim that "natural therapeutics" are well supported by evidence of efficacy and safety, is to demonstrate a knowledge of these therapies that to quote Dean (2003), is "... ill informed and unscientific, relying on outdated belief patterns rather than facts".

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Continued p 13

Pan Pan Pan

Searching through
the entrails of
a scandal

One of our more agreeable tasks here at Skeptics Central is to store the predictions of psychics, and to subsequently compare such predictions with unfolding events. No, the Sydney Olympics were not destroyed by a tidal wave, as predicted on national television.

The writer, a keen observer of the world of finance, collects the predictions of stockbrokers. Nothing brightens a dismal winter's Sunday afternoon quite like browsing the year-old tip sheets and reviewing with hindsight the 'buy' recommendations for HIH, Harris Scarfe, and other corporate corpses (I have vowed to get out a bit more often).

So the following recommendations from a prominent stock research house (prudence demands it remain nameless) give a sense of *Schadenfreude*:

The tipster's recommendations are, of course, covering Pan Pharmaceuticals Limited. The title of this piece is a play on the distress signal *pan pan pan*, which readers who are pilots or yachties will recognise as the second highest distress call (after the more famous triple Mayday).

I have combed through the company's 2002 audited annual accounts as lodged with the Australian Securities and Investments Commission. I can see why the pundits gave Pan a 'buy' recommendation — without knowing the industry, I would have given Pan the thumbs up as well. The accounts reveal Pan to have been a solid and profitable company. Sales to 30 June 2002 were \$101.5 million, up 17.6% from 2001. Costs of sales were \$68 million, but no break up of this into ingredients and manufacturing costs is provided. I



Richard Lead, Accountant and Treasurer of Australian Skeptics, reads balance sheets for fun — poor chap.

- | | |
|------------|-------------------------------------------------------------------------------------------------|
| 21/3/2002 | <i>Another buying opportunity!</i> |
| 30/5/2002 | <i>Value improving.</i> |
| 05/09/2002 | <i>Investing for future growth generates disappointing result.</i> |
| 27/02/2003 | <i>Recommendation upgrade as new capacity poised to generate sales growth.</i> |
| 01/05/2003 | <i>Manufacturing licence suspended, products recalled, share holders' investment destroyed.</i> |

Pan, Pan, Pan

expect the cost of ingredients in Pan's 'complementary' products would not be high. The balance sheet is very strong, with \$171.7 million in assets, and not one cent of debt.

Pan was a cash cow.

The share register reveals all of the major banks, insurance companies, and superannuation funds (including public-sector superannuation funds) were among Pan's 2,879 hapless shareholders.

Advocates of the AltMed industry frequently attack the real pharmaceutical industry, claiming it is just 'big business.' And of course, we consumers are told real doctors write unnecessary prescriptions to boost the profits of these greedy multinationals. Pan's accounts show the alternative/complementary industry to be very big business itself. The accounts also show the critical difference between real medicine and woo woo medicine. Whenever I analyse a company's accounts, I scrutinise the income tax reconciliation. The corporate tax rate is 30% but few companies pay this rate, and the tax reconciliation reveals why. In 2002 Pan received a \$340,000 tax benefit for research & development expenditure. Because of changes made to the R&D tax concession in 2001 it is impossible to calculate how much Pan spent on R&D in 2002, but it had to be in the \$650,000 to \$907,000 range, well under 1% of sales. But it is simple to calculate the company's R&D expenditure in 2001 with precision — it was exactly \$nil. Such is the reality of 'complementary' therapies.

Pan was placed in Voluntary Administration in May, and lawsuits claiming damages for the world's largest product recall in history are flying. The house of cards has discovered that gravity will not be mocked.

Your tax system at work

A year ago, in the winter 2002 edition (22/2, at page 5) of *the Skeptic*, Bunyip reported my whinge about the special GST treatment given to alternative medicine in the introduction of the GST. Registered busi-

nesses received a lousy \$200 voucher to assist them with the costs of establishing GST accounting systems, while at the same time, five AltMed associations received \$100,000 each to help them establish 'uniform national registration requirements.' Please indulge me in the following rant — BHP, the Commonwealth Bank, and the Australian Skeptics each received \$200 to help them implement the GST, while at the same time the National Herbalist Association of Australia, the Australian Traditional Medicine Society Limited, the Australian Natural Therapists Association Limited, the Federation of Natural and Traditional Therapists, and last but not least, the Australian Acupuncture and Chinese Medicine Association Limited each received \$100,000 of your taxes, gentle reader, to help their members implement the GST.

These woo woo merchants were able to provide GST-free supplies during a transitional period to 30 June 2003, but after that date, unless they become 'registered professionals,' their services will lose their GST-free status.

The ATO has the unenviable task of administering government revenue policies, and I don't blame the ATO for its May 2003 *Fact Sheet*. Many ATO announcements cross my desk each day: most are greeted with bored indifference, some produce a wry chuckle, and very occasionally they produce anger. Permit me to share my rage with you.

From 1 July 2003 acupuncture, naturopathy or herbal medicine services will only be GST-free when they are:

- provided by a 'recognised professional', and
- generally accepted in the relevant health profession as being necessary for the appropriate treatment for the recipient.

A 'recognised professional' is a person who is either:

- subject to a State or Territory law requiring permission, approval or

registration to supply those services in that State or Territory, or

- if no such State or Territory law exists, the person is a member of a professional association that has uniform national registration requirements relating to the provision of those services.

Victoria is the only State requiring practitioners to be registered (Chinese Medicine Registration Act 2000) when supplying acupuncture or Chinese herbal medicine services! It is open season everywhere else in this clever country. But not even Victoria requires naturopaths to be registered.

The *Fact Sheet* states:

A member of a professional association would normally need to meet specified admission criteria and:

- have access to a published range of materials (for example journals, newsletters or technical updates)
- be allowed to take part in making decisions that affect their profession (ie that are designed to promote, encourage and develop the profession)
- have the right to vote at meetings of the association, and
- have the right to be recognised as being a member of that professional association.

The term 'professional association' is not defined in the GST legislation. However, a professional association would normally have the following characteristics:

- its members are practising the listed profession
- it sets its own admittance requirements, including acceptable qualifications
- it sets standards of practice and ethical conduct
- it aims to maintain the standing of the profession as a whole and often prescribes requirements to maintain their professional skills and knowledge through continuing professional development

- it has sufficient membership to be considered representative, but not necessarily solely representative, of that listed profession

- it is a non-profit making body

- it has articles of association, by-laws or codes of conduct for its members, and

- it has the ability to impose sanctions on members who break the association's rules.

The 'uniform national registration requirements' relate to the professional association and not across the profession as a whole. The phrase 'uniform national' means that the professional association's registration requirements must be the same in all States and Territories. The GST legislation does not specify the registration requirements that are required for acupuncture, naturopathy or herbal medicine. This is the responsibility of each professional

association **to ensure that only suitably qualified people gain practitioner status.** (emphasis added)

If you consider all that to be weird, read the final bit:

A recognised professional provides 'treatment' when that person assesses the recipient's state of health and determines what is needed to preserve, restore or improve the physical or psychological wellbeing of that recipient as far as that recognised professional's training allows.

The treatment is considered to be 'appropriate' when it would generally be accepted by the relevant profession as appropriate for the recipient. For a treatment to be 'generally accepted', the particular service and the circumstances in which it is provided, must be generally accepted by the acupuncture,

naturopathy or herbal profession. Therefore, it is the acupuncture, naturopathy or herbal profession that ultimately determines which services are generally accepted as appropriate treatment.

The above paragraphs are completely self-referencing and meaningless. At no stage do these associations have to provide any evidence of the efficacy of their treatments to enjoy GST-free status. If a group of Sceptics gathered together (inevitably, in a friendly pub) and claimed to be able to cure headaches by standing our patients victims in a bucket of rancid custard, we need no qualifications to form a 'professional association that has uniform national registration requirements relating to the provision of those services.' Thanks for the \$100,000 Mr Costello.



Lesson Still Unlearnt

...from p 10

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If it Sounds Like a Duck ...

The alternative to medicine sounds very much like a duck.



Peter Bowditch, a Vice President of Australian Skeptics, maintains both the rage against quackery, and a website, ratbags.com.au dedicated to that aim.

This is the text of a presentation given by Peter Bowditch to the NSW Skeptics Dinner Meeting on February 22.

I am not a doctor. At least, I am not a medical doctor — I have a PhD from a fake American university — but I have been called a doctor. Apparently this is a derogatory term in certain circles.

I was continually harassed late last year by people demanding to know my qualifications to talk about alternative medicine, as apparently you have to use it to talk about it. My answer was:

My qualifications are that I am a scientifically-literate, concerned citizen with a particular interest in medical quackery. I am sick of seeing liars and thieves get away with their lying and thieving. I am sick of hearing stories about families being impoverished in order to pay for useless medical treatments for their sick children. I am sick of hearing about desperate people being robbed of their life savings by charlatans who only care about money. I am sick of hearing that murderers are heroes and heroes are murderers. Or, as Sir Edmund Hillary said: "Because it's there".

Defining terms

I am going to talk tonight about alternative medicine, but before I start I would like to point out that I don't like the term, because what I will be talking about is neither medicine nor an alternative. The word "alternative" suggests that a choice can be made from a selection of options which have similar outcomes. When you came here tonight you had the alternatives of coming by car, motorbike, pushbike, train, bus, or even walking if you live close enough. If you came by car you had alternatives when you bought it. For example, you can buy cars with four, five, six, eight, ten or twelve cylinders (or a second-hand Mazda RX7 with no cylinders); you can get diesel or petrol engines, automatic or manual gearboxes (or combinations of the two) with different numbers of gears. All these are alternatives which would cause no questions if you said you used them to get here tonight.

Some alternatives are a bit less likely. If you said that you came by boat, that is certainly possible because you can get boats of a certain size up the Lane Cove River to Fullers Bridge, although it is a bit of a walk up the hill from there. If you said that you came by helicopter it's still believable but you might be

asked where you parked it. If you said that you didn't park it anywhere because you were winched down from it outside in Help Street and the pilot then flew it away people might be a bit doubtful, but I happen to know the man who runs the CareFlight helicopter service and they have winches on all their machines, so if he said that that was how he got here I would have to believe him.

If someone said, however, that they got to Chatswood in a 747 or by ocean liner or in an FA18 fighter or in a Formula 1 car that they bought from the Ferrari team after Michael Schumacher won his last World Championship you wouldn't even consider that it was possible. Some things simply cannot be true.

The types of alternative medicine that I'm going to talk about tonight aren't vitamins and massage and meditation and raw food diets and driving here in your family car. In fact, I'm not going to talk about medicine at all. I am going to talk about lies and theft and deceit and fraud and quackery. I'm going to talk about people who claim to be able to cure cancer and AIDS and asthma and autism and MS and arthritis and diabetes and any number of other diseases and ailments. I will just use the term "alternative medicine" as a convenient kind of shorthand.

Principles of "alternative medicine"

There are some principles of alternative medicine that you might like to keep in mind throughout this talk and the demonstrations of devices and potions. One is that the body is incapable of regulating itself and consequently becomes polluted with many toxins. Some of these toxins are environmental, like mercury in fillings and vaccines, and some are just by-products of normal living. To get rid of these toxins you need to take things to flush certain organs like the liver, or to have chelation. (This is a process where chemicals are introduced into the bloodstream to capture certain molecules and remove them through the urine. It is

a legitimate medical procedure in cases of true heavy metal poisoning.) One very common way of getting rid of toxins is colonic irrigation, which your grandmother would have called an enema except that she was too polite to talk about such things.

An apparently contradictory but still universal principle is that the body contains all that it needs to cure itself and is self-regulating but it just needs some help occasionally. Chiropractors call this "innate intelligence". This principle means that you just have to get everything in balance, preferably by using "natural" methods. Traditional Chinese Medicine adjusts the hot and cold winds that flow through us, and acupuncture aligns the *qi* in the meridians when it gets a bit out of kilter, but these are just ways of helping the body heal itself.

The next principle is that conventional medicine is just driven by the obscene, massive profits that can be made, with a common example being the \$5.4 billion spent on vaccines throughout the world in 2001. This is contrasted with the related principle that the \$17 billion spent on herbal supplements in the US alone in that year is evidence that people are voting with their wallets for the altruistic, profitless alternative alternative.

In alternative medicine there is no such thing as mental illness or somatization or anxiety disorders. It is not possible for the mind to make someone sick and there must be an external cause. If you point out to an altmed supporter that Multiple Chemical Sensitivity looks a lot like agoraphobia or Obsessive Compulsive Disorder the reply usually goes along the lines of "You are saying that it is not real. You are saying that it is all in the head". Trying to say that things can be very real, very debilitating and still only in the head just attracts more abuse. Lying comfortably beside this principle is the one that says that the mind is a powerful curer of disease and can, by itself, work miracles. When the scientific absurdity of homeopathy is pointed out, for example, the re-

sponse is often that the wonderful results achieved in anecdote land come from the amazingly powerful placebo effect, where the mind tells you to get better.

Clinical trials

In the research area, a principle is that clinical trials of alternative treatments are not necessary, because all you have to know is that things work. Personal experience, that which scientists call "anecdotes", is all the evidence needed. A sub-clause of this principle is that there is no money anyway to do research. (Total sales of alternative medicine in the US are about \$30 billion per year, which is about 50% greater than the cosmetics industry, about 4 times the sales of movie tickets and about equal to the entire world market for recorded music. In Australia the expenditure is about \$2.3 billion, which is almost the same figure as that for our wine exports. AltMed supporters like to say that this is four times the sales of OTC drugs, but it isn't really that bad. The Pharmaceutical Benefits Scheme spends about \$7 billion, so alternatives only account for about a quarter of the medication spend.)

Some principles are not so dichotomous. One is that the immune system is under constant attack and needs boosting all the time. Another is what George Orwell called "doublethink", which is the ability to hold more than one contradictory idea at a time and believe them all to be true. An example of this is that iridology, reflexology, acupuncture and chiropractic all assume the body to be filled with meridians or channels of information but alts have no problem in believing all of them at once. Another example is the collection of guaranteed cures for cancer which each offer a unique cause and cure. Another principle is the existence of energy fields (sometimes associated with the meridians and channels I just mentioned) which cannot be measured but which can be adjusted with machines and magnets. Allied with energy fields are vibrations, both in the energy fields

Sounds Like a Duck

and in physical objects such as parasites and cells.

A very important principle, of course, is that natural is better. Anything natural will be good and artificial things are bad. *Artificial things contains chemicals*. This nice bunch of flowers that I have here is an example. I picked these this afternoon from the creek that runs between my house and the local high school. It is a castor oil plant and the seeds contain ricin, which is one of the most toxic substances known to man. The seeds don't have very much poison in them, so each seed can only kill about three people. It's very natural, very available, and very deadly

The one overarching principle of alternative medicine, however, is that science is unnecessary, closed of mind, knows nothing and wants to know nothing. Science does not recognize the reality of the universe we live in but instead tries to force reality into a set of man-made rules. Science is also highly fallible, as evidenced by the way that scientists can disagree with each other and even change what is believed to be true.

Specific examples.

Let's get on to some specific examples.

I have here a book called *The Cure for All Diseases*, by Hulda Regehr Clark, PhD, ND. The same author has followed this up with books called *The Cure for All Cancers*, *The Cure for All Advanced Cancers* and *The Cure for HIV/AIDS*. The author has a legitimate PhD degree earned in 1958 for physiology. The "ND" stands for Doctor of Naturopathy, a degree she obtained from a mail-order place called Clayton University. (Americans have difficulty understanding why Australians find this so funny.) Someone once suggested in a public forum that the "ND" stood for "not doctor" and attributed this witticism to me. I was flattered but I had to admit that I hadn't thought of it, although I wish I had. It's been estimated that Clark sold \$7 million worth of books in

1999, and she owns the publishing company so she gets to keep more of the money than most authors. *The Cure for All Diseases* is in its 17th edition, and was ranked at position 1,494 in sales at Amazon.com on the day this article was sent off for publication in *the Skeptic*. This is big business. The US Federal Trade Commission has recently taken action against Clark, but she has protected herself well. Her son distributes her products in the USA, her brother does Canada, her web site is hosted in Ohio but run by a man in Switzerland. She has another site which says that all of these are independent of her. She employs a PR man and a lawyer to abuse and defame people, but she can throw any of these people overboard at any time. Her son is already claiming that the web site named *Dr Clark Research Association* (the name of one of her businesses) has nothing to do with her and the man who runs it can swing in the wind.

I have spent some time on Clark because she epitomises quackery. She has no science, she gouges money, she runs from any request for evidence and her only responses to criticism are ad hominem attacks and lawsuits.

Here's something from her book that might be of interest to anyone with diabetes.

Diabetes Can be Cured

All diabetics have a common fluke parasite, Eurytrema pancreaticum, the pancreatic fluke of cattle, in their own pancreas. It seems likely that we get it from cattle, repeatedly, by eating their meat or dairy products in a raw state. It is not hard to kill with a zapper but because of its ineffective stages in our food supply we can immediately be reinfected. Eurytrema will not settle and multiply in our pancreas without the presence of wood alcohol (methanol). Methanol pollution pervades our food supply — it is found in processed food including bottled water, artificial sweetener, soda pop, baby formula and powdered drinks of all

kinds including health food varieties. I presume wood alcohol is used to wash equipment used in manufacturing. If your child has diabetes, use nothing out of a can, package or bottle except regular milk, and no processed foods.

By killing this parasite and removing wood alcohol from the diet, the need for insulin can be cut in half in three weeks (or sooner!).

Be vigilant with your blood sugar checks. The pancreas with its tiny islets that produce insulin recovers very quickly. Even if 90% of them were destroyed, requiring daily insulin shots, half of them can recover or regenerate so insulin is no longer necessary. The insulin shot itself may be polluted with wood alcohol (this is an especially cruel irony — the treatment itself is worsening the condition). Test it yourself, using the wood alcohol in automotive fluids (windshield washer) or from a paint store, as a test substance. Try different brands of insulin until you find one that is free of methanol.

Artificial sweeteners are polluted with wood alcohol! Instead of helping you cope with your diabetes, they are actually promoting it! Do not use them.

Drugs that stimulate the pancreas to make more insulin may also carry solvent pollution; test them for wood alcohol and switch brands and bottles until you find a pure one. You may not need them much longer, so the extra expense now may soon reward you.

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And what about cancer

The Cause

For many years we have all believed that cancer is different from other diseases. We believed that cancer behaves like a fire, in that you can't stop it once it has started. Therefore, you have to cut it out or radiate it to

death or chemically destroy every cancerous cell in the body since it can never become normal again. **NOTHING COULD BE MORE WRONG!** And we have believed that cancers of different types such as leukemia or breast cancer have different causes. Wrong again!

In this book you will see that all cancers are alike. They are all caused by a parasite. A single parasite! It is the human intestinal fluke. And if you kill this parasite, the cancer stops immediately. The tissue becomes normal again. In order to get cancer, you must have this parasite.

How can the human intestinal fluke cause cancer? This parasite typically lives in the intestine where it might do little harm, causing only colitis, Crohn's disease, or irritable bowel syndrome, or perhaps nothing at all. But if it invades a different organ, like the uterus or the kidneys or liver, it does a great deal of harm. If it establishes itself in the liver, it causes cancer! It only establishes itself in the liver in some people. These people have isopropyl alcohol in their bodies.

All cancer patients have both isopropyl alcohol and the intestinal fluke in their livers. The solvent, isopropyl alcohol, is responsible for letting the fluke establish itself in the liver. In order to get cancer, you must have both the parasite and isopropyl alcohol in your body.

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Devices

Several devices, potions, techniques and alternative ideas were then demonstrated and discussed, including:

- Zappers using electricity, sound and magnetism, following the theories of Hulda Clark, Royal Rife and Robert Beck;
- A water-powered device to increase breast size;
- A hand-held microscope used to determine a woman's fertility;
- Applied Kinesiology, demonstrating the difference in strength when someone is holding sugar or aspartame;
- Perkins Tractors and their descendant, Therapeutic Touch, used to ease the pain of arthritis (the patient said that it hurt more afterwards, but he was told that this was a healing crisis);
- Homeopathic vaccines (see more about this in *the Skeptic* 22:3);
- A faith healing in the Benny Hinn tradition (This was performed before the main show);
- A chiropractic adjustment (this was done on a soft toy — no humans or animals were harmed in the making of this speech);
- Could I leave out the anti-vaccinators? Of course not!

No alternative

There is no alternative medicine. There is medicine that works and there is something else that doesn't. If some folk remedy can be proved to be effective and safe then it will be

assimilated into medicine and no longer be an alternative. What makes it work can be identified and isolated, and may even be synthesised so that it can be produced in a reliable fashion (aspirin is an example). Much of what is called "alternative medicine" has the same relationship to real medicine as pornography has to love making. Actually, porn is more honest because the participants aren't pretending to be doing anything else.

I never blame the people who are sucked in by the quacks and frauds. If you are desperate with a terminal or chronic condition it is only natural to look for answers anywhere. Some medical interventions are unpleasant, and doctors are rushed and harassed at times. Sometimes there is no answer. The average person doesn't understand science and may even distrust it, so they are easy prey for scamsters who abuse science (in both meanings of the word "abuse"). The bottom line is that the frauds steal not only the money of their victims, but their hopes and their lives.

None of this is new. The following words come from a publication called *Pseudodoxia Epidemica*, written by Sir Thomas Browne in 1646. In between paragraphs ridiculing urine therapy and astrology (both unfortunately still with us), he had this to say about "Saltimbancoes, Quacksalvers, and Charlatans":

For their Impostures are full of cruelty, and worse than any other; deluding not only unto pecuniary defraudations, but the irreparable deceit of death"



**National Convention
Canberra
August 22-24
See insert for more details**

Life in the Raw

Do not believe everything you hear about raw food.



Glenn Cardwell, a dietitian specialising in sports nutrition, is a regular columnist for the Skeptic.

Raw vegetables are always better than cooked

There is a mixture of sheer pleasure and envy when you hear for the first time a quote that you wished you had furnished yourself. US economist Roger Brinner said “The plural of anecdote is not data.” If only the pop-nutritionist would take note. In nutrition, there are many ingrained beliefs that appear to hold veracity by virtue of being repeated many times. Last edition we examined the view that you must drink 6-8 glasses of water daily. Another is that raw vegetables are better for you than cooked. This one just makes sense doesn't it? How could this not be true? Surely cooking kills the nutrients?

Cooking

Well, let's get the bleeding obvious out of the road first. Some vegetables need to be cooked before they become remotely edible. Raw potato, pumpkin, turnip and swede, for example, will not be found in the gourmet restaurant. The entire legume group needs to be soaked and cooked before being considered a food. Of course, there is a large cohort of children who do not believe such plant foods

have improved palatability after cooking.

OK, so the proponents of raw cuisine don't really mean legumes, root vegetables and others. They are referring more to the salad vegetable, the carrot, broccoli and tomato. They are also highlighting the errors of cooking vegetables for extended periods. It is well established that many vitamins eg vitamin C, are easily destroyed by heat and light, hence the recommendation to quickly cook vegetables in minimal water, such as micro-waving. Mineral losses are low during normal cooking.

More beta-carotene?

Back to the raw vegetables. Are they always a better choice? Many studies have revealed that beta-carotene and antioxidant phenolic compounds are actually more bio-available from cooked vegetables compared with raw. This is probably due to cooking breaking down the tough cell walls, releasing the nutrient content for easier absorption from the small intestine.

Dr Sue Southon, Institute of Food Research in the UK, says that the body is able to absorb around 3-4% of the carotenoids (beta-carotene is an example) in raw carrots, but the

absorption increases fivefold if they are cooked and mashed.

Carotenoids are present in chloroplasts in the leaves of dark-green leafy vegetables, which are not readily digested in the body. In carrots they are in a crystalline form, which dissolve very slowly. It is believed that the fibre of vegetables also entraps the beta-carotene, reducing its availability to be incorporated into micelles prior to absorption from the intestines. By comparison, beta-carotene in fruits is contained within the readily digestible cell wall.

Carotenoids enjoy a lipid environment, so they are generally easier to absorb if present with some oil or fat. That's right – a low fat diet means less access to the 600 carotenoids in the food chain. Adding a bit of oil to your cooking, or to your salad dressing can improve carotenoid absorption.

More lycopene?

Lycopene is the red pigment in tomatoes, watermelon, guava and pink grapefruit. It is from the family of carotenoids and has a strong antioxidant activity. It has been linked to a reduced risk of prostate cancer in men and heart disease. Researchers have found that cooking tomatoes can double the amount of lycopene that we can access. Being from the carotenoid family, it too will be better absorbed if cooked with a little oil. This is good news for the pizza lover. The lycopene in the tomato paste will be easy to absorb, so you won't get prostate cancer (but only because the saturated fats will clog your arteries first!).

More ferulic acid?

A recent study showed that cooked sweet corn has a higher antioxidant activity than the same corn before cooking. The corn was cooked according to the normal canning process (115° Celsius for 25 mins) resulting in a 25% reduction in the vitamin C content. One antioxidant chemical, ferulic acid found in the cell wall of grains, oats and corn, quintupled in bioavailability when the corn was

cooked for 25 minutes. The total antioxidant activity of the cooked corn was 44% higher than the raw form.

It must be noted that the vitamin C level dropped as expected when cooked as the vitamin C was oxidised to inactive components, but as we don't have a vitamin C problem (supplement company hype notwithstanding) then you just might be better off with the extra ferulic acid and getting your vitamin C from fruit and salad vegetables.

More sulphoraphanes?

In a paper presented to the American Chemical Society in March this year was evidence that if you chew your broccoli well, the cells rupture releasing an enzyme that encourages the production of sulphoraphanes. There are two types of sulphoraphane, a sulphur-rich and a sulphur-poor version, with the sulphur-rich type having the most potent cancer fighting properties. Another enzyme they called ESP tips the balance to the sulphur-poor version.

As you can imagine, cooking denatures protein/enzymes such that they can no longer do their job, so cooking stops ESP. Unfortunately, cooking also kills the enzyme that catalyses the formation of the sulphoraphanes in the first place. Genetic engineering may be able to reduce ESP levels such that well-chewed low-ESP raw broccoli is anticarcinogenic. I mention this because it shows us another example that nature is more complex than a simple cooked v raw debate.

It's sad really

After one of my "here's the common sense you never seem to hear about nutrition" presentations, a gentleman came up and told me that electricity was to blame for many illnesses that have befallen mankind. With electricity came cooking and the destruction of nutrients leading to heart disease and cancer, the two main causes of death in western society. Poor man. Should you take a look at, for example, *The Molecule*

Hunt by Martin Jones (Penguin 2001) and *The Ice Man* by Brenda Fowler (Pan Books 2002) you will appreciate that humans have been cooking for thousands of years. It makes food taste better, it is an excellent manner to kill many food-borne bacteria, and as we have seen for some nutrients, it makes them more bioavailable.

My tip

If you cook your vegetables, cook them quickly (eg microwave) and in minimal water, such that they retain their crispness. Eat a mixture of cooked and raw vegetables to get a full range of those wonderful antioxidant compounds that vegetables provide. This makes scientific sense as well as good food enjoyment. With only one in 10 people eating enough vegetables to be good for them, there's a good chance we could all add more to our plate. For best nutrient retention, keep your fruit and veg cool and away from sunlight.

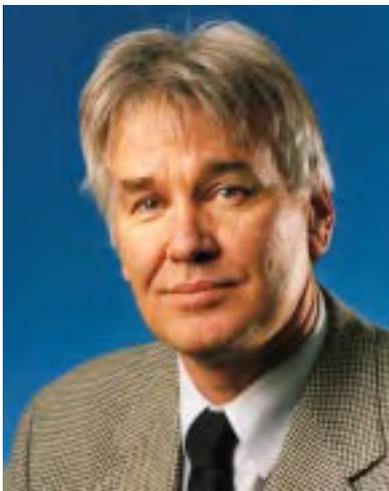
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Agricultural Alternatives

It is not only in medicine and healthcare that unscientific alternatives are widely promoted



David Conley is an agricultural scientist from Melbourne.

In the area of medicine the fight is always between users of scientific, evidence-based practices and those individuals and companies promoting quackery. Perhaps a less well-known saga, but just as long-running, deals with the controversies in agriculture. On the one hand are those promoting or practising the conventional approaches involving fertiliser, pesticides, animal vaccinations, in line with scientifically validated and recommended best practices from government researchers and agricultural advisers. On the other there are those promoting a whole variety of “alternatives” — sometimes derided as the ‘muck and mystery’ approaches. There are clear parallels here between agriculture and medicine, and they are equally important, given the continuum between agriculture, food and individual health.

Alternatives on offer

Over the past thirty or more years we have seen:

- living microbial preparations; and
 - strange preparations that transmute in cow horns.
- We have also seen uncritical television shows on the national broadcaster, and on its web sites, providing *de facto* advertising and promotions for various products.
- This is, of course, not purely an Australian phenomenon; it is equally common around the globe. A number of sites on the internet promoting a diverse range of alternatives now spread the messages far and wide.
- Alternatives can incorporate various husbandry systems but generally feature a predisposition towards organic practices, or new testing services for soil or plant samples. The latter enterprises often do utilise the latest in equipment, however, they also often import interpretations from overseas that sharply vary from those developed within Australia. Those practising such alternatives are often characterised by strong and rigid ideologies, including vehement opposition to conventional agriculture and new technologies, such as genetic modification of plants, quasi-religious zeal, and a propensity to suspend critical thought.
- dolomite promoted as a great alternative to superphosphate fertiliser;
 - the promotion of seaweed-based products as fertilisers or growth stimulants;

Again, similar to alternative medical therapies (and some fundamentalist religions), the proponents of the alternatives seek to claim scientific validity for their approach but, alas, the scientific evidence typically remains lacking. Public sector research institutions in Australia have committed significant resources to investigating various claims without finding the elusive 'alternative' to conventional agriculture.

The lack of scientific validation, however, has not been reflected by a withdrawal of products or modification of claims, although company structures, ownership, strategies, branding, claims and value proposition can be somewhat dynamic. Generally, as with alternative medicine, negative results are ignored while neutral or supportive evidence is cited.

Organic means what?

We also see some very astute marketing whereby 'organic' is no longer a carbon containing compound in chemistry, but an approach eschewing the 'conventional, technological and chemical' for the 'natural, unadulterated, and traditional.' We have certification schemes and trademarks adding brand value to products. We have literature and advertising that seeks to increase uncertainty and fear amongst consumers in relation to basic food resources. In agriculture we commonly see, as a key part of the value proposition, products offering savings in one of the major operating cost areas on farm — the costs of fertilisers.

I should explain here that this article does not seek to deride organic farming, as such. Good husbandry techniques for soils, plants and animals always make sense. For example, appropriate crop rotations break soil disease cycles and increase plant yields. Paddock rotations for stock can reduce parasite burdens. Increasing organic matter to the soil will assist soil structure and soil nutrient levels in many soils.

Nor do I question in any way the legitimacy of soil and plant testing. I merely question the appropriateness of certain groups' chosen tests, the validity of the interpretation and the resulting product recommendations.

The focus here is on the 'magic bullets' sold to the community on the basis of anecdotal evidence (at best), cobbled together with science and pseudoscience and mixed with a strong dose of an appealing ideology.

This mixture of fact and fiction also causes problems for farmer consumers, and agriculture professionals alike, as the underlying scientific basis for product claims can range from very little to 95% of the story. The skill is in picking where the facts finish and the fiction begins.

A celebrated case

Since the 1970s Australian and New Zealand agriculture has seen a range of 'magic' products and their associated controversies. Of particular relevance is a major court case* in New Zealand that validated a scientific approach to assessment but, as subsequent events showed, exposed the unwillingness of a bureaucracy to uphold scientific principles over political compromise. Needless to say the products are still out there in the marketplace.

In 1986, the Bell Booth Group in NZ, marketers and distributors of Maxicrop (a seaweed extract) initiated litigation against the Ministry of Agriculture and Fisheries and Television New Zealand following comment about the product on an investigative television program, *Fair Go*. This court case became the then longest running civil case in the

* In an entertaining book on the court case and subsequent events, Dr Doug Edmeades describes not only the case but the machinations of a bureaucracy he recounts as sadly lacking in support for its scientific staff and scientific principle in general.

Science Friction: The Maxicrop Case and the Aftermath by D C Edmeades. Published by Fertiliser Information Services, PO Box 9147 Hamilton, NZ

country's history, with the judgement running to 333 pages.

Justice Ellis concluded:

... that Maxicrop did not work... and on the balance of probabilities... this applied to all varieties of Maxicrop marketed in NZ.

The defence of justification was therefore successful. He also considered that:

an assertion that the scientific evidence clearly established that Maxicrop did not work would be fair comment on a matter of public interest that would be protected by this defence...

But of course seaweed fertilisers remain on the market and quick visits to several web sites makes for enlightening reading for the scientifically minded. One site mentions that over 70 micro-elements are contained within its products but fails to mention that plants only require sixteen elements to grow. Growth hormones are being claimed as beneficial, notwithstanding the negative findings of the earlier judgement on these very claims.

Another site quotes trial results for its products and concludes from the data presented that sodium and chloride levels are lower in plants receiving its treatments, however, the marked differences in the key nutrient levels (nitrogen, phosphorus, potassium) between treatments are not commented on at all. Nor is the design explained and nor are the treatments described in relation to amounts per unit area of crop. But the Before and After photos are impressive.

So not even the full majesty of the law can daunt the seaweed purveyors, nor has the evidence shamed them into amending their claims.

Biodynamics

An unquestioning article on ABC TV's, *Gardening Australia* website describes Biodynamics as a:

sophisticated form of organic agriculture which uses specific preparations and techniques to enhance

plant growth and maximise the quality and flavour of produce.

In another web article, and with a touch more American hyperbole, Sherry Wildfeuer describes biodynamics as:

a science of life-forces, a recognition of the basic principles at work in nature, and an approach to agriculture which takes these principles into account to bring about balance and healing. In a very real way, then, Biodynamics is an ongoing path of knowledge rather than an assemblage of methods and techniques.

(www.angelicorganics.com)

The credit for biodynamics lies with Dr Rudolf Steiner in Germany in the 1920s. Alex Podolinsky, a student of Steiner, migrated to Australia in the late 40s and has successfully promoted the approach over a long period, so much so that I have read that Australia leads the world in biodynamic agriculture. Our beloved ABC has also been instrumental in promoting the approach with a very popular *A Big Country* story some years ago and more recently, an episode of *Australian Story*. You know the sort of program: rural idyll, contented cows, background classical music, and no critical analysis.

Central to the belief system of biodynamics are “the preparations.” One example — again it is all on the web — will suffice:

A preparation known as ‘500’ is claimed to be the most powerful substance for increasing soil fertility. To make this preparation, cow horns are filled with fresh cow manure and buried over winter. They are dug up several months later by which time the manure has been converted to colloidal humus - a concentration of aerobic bacteria. A fistful of 500 is enough for a one-acre garden. It is mixed with warm rain water and stirred in a special

way for one hour. The container must be copper, stainless steel or earthenware, never plastic. The solution is then sprayed onto the garden. 500 is said to stimulate root activity, microbial activity and contribute to humus building.



Soil testing and self-styled consultants

Soil testing to determine soil pH (a measure of the acidity or alkalinity), salinity levels, and macronutrient levels for phosphorus (P) and potassium (K) is commonly used across all agricultural regions of Australia. The tests are interpreted in relation to liming requirement (pH), possible salinity problems, superphosphate fertiliser requirement (P) and potash fertiliser requirement (K). The interpretations are generally based on accumulated trial or experimental data, calibrating different responses in plant growth according to level of fertiliser applied and level of soil nutrient.

Notwithstanding serious and prolonged attempts, the list of nutrients that can be measured in soils and reliably interpreted for management purposes remains surprisingly short. Well short of the 16 elements required for plant growth, and very much short of the “70 micronutrients” in the seaweed products. Modern technology allows for precise measurement, but it is in the area of useful interpretation that the testing of numerous elements fails.

The soil levels of trace elements,

essential for plant and animal growth (eg, zinc, selenium, copper), cannot be reliably interpreted in relation to either animal or plant needs. This reflects that nutrients in soil exist in various ‘pools’ of varying availability, that plant requirements for certain nutrients varies over

time, as does the ability of plants to extract the nutrients, and that animal requirements vary according to the type of animal, its age, reproductive state, and the nature and condition of the feed in a paddock.

In the 1980s and 90s it was not uncommon for new ‘consultants’ to appear offering multi-element tests (major elements and various trace elements) and predi-

cating fertiliser application on the basis of the tests. Some such consultants sold soil testing services and their advice, while others also on-sold various products from conventional fertilisers and trace element additives to alternative fertilisers. The important thing for any new consultant was to have a selling angle.

Dangling the hook

In the mid-80s I wrote an article on soil testing in which I recounted some points made in the USA, about claims that the soil ameliorant, dolomite, could replace superphosphate. At the time a major controversy about the topic was relatively raging across SA and western Victoria (as I said, these issues are not new). These points identified a recognised promotion pattern for alternative products and services. Having checked the web sites for several of the products the points clearly remain as relevant today, and of course, not only for agriculture.

- The product contains a secret or unknown ingredient;
- its remarkable results are due to a

newly-discovered “secret principle,” or is a new approach to soil chemistry or soil fertility;

- the discovery is so new that most scientists haven’t heard of it yet; or
- there is a conspiracy amongst government and university scientists to ignore results; or
- they refuse to undertake trials;
- tests under controlled conditions (experiments) don’t show the benefits obtained in practical situations;
- testimonials support the claims, and converts supply the testimonials (check out the “before” and “after” photos);
- there is often some good science and sound management advice in “the package”.

On this latter point, I raised earlier that the accuracy of the science could range from low to 95% making it difficult to ‘winnow the chaff from the wheat.’ There is no easy answer to this difficulty in product or practice assessment. It is also difficult for individuals to commit to only part of a package, particularly where some of the alternative ideologies are very much all-or-nothing approaches. Certification schemes in organic agriculture, for example, are not

only successful marketing and quality management tools but they may also provide a badly needed value-added proposition to producers. Most producers working within such systems can ill afford to lose certification.

Regulation

The role of government in dealing with all these alternative approaches is, not unlike areas such as alternative medicines, a curious one to say the least. Agriculture Departments with strong scientific heritages have not infrequently been put in the position of supporting the development of organic agriculture, given the allure of growing export or domestic markets for the products, but, sadly, it is increasingly apparent that scientific rigour must give way to market forces. Scientists are no longer encouraged to challenge organisational support for the unscientific. Nor are they encouraged to adopt any sort of advocacy role on behalf of the agricultural consumer. The threat of litigation saps institutional courage relatively easily.

The use of regulation to control the sale of unproven agricultural products might be thought to be one avenue of consumer protection, however, what limited capacity that exists is rarely used. In another of

those wonderful quirks of regulation, it has been historically possible to obtain registration for a fertiliser or ameliorant that didn’t work. Efficacy was not an aim of the regulation system. Again the parallel with alternative medicine is glaringly obvious.

Modern agriculture is increasingly triple bottom line focused with emphasis on not only economic benefit but also social and environmental gains. No doubt the converts to alternative approaches receive social and environmental gains that outweigh potentially negative economic consequences, and we can accept that lifestyle choices often reflect more of one’s faith and values than an understanding of science. However, the rights of the evangelists to rely on pseudoscience, fear, and downright lies to peddle their products is something to which the agricultural community should not acquiesce. Agriculture is a tough business at the best of times.

But if it gets too tough in agriculture, there is always the home garden market and I suspect the mark-ups are better as well. I’ll just put some seaweed extract in the watering can, add water and spruce up the daisies with all those micronutrients and growth stimulants.



Whither the Weather?

Some sage once said, “Everyone talks about the weather but no one does anything about it”. Now *Skeptic* subscriber, Andre Phillips, an astronomer at Siding Spring Observatory near Coonabarrabran, has changed all that, as his note below explains.

Recently, for the benefit of the remote observers using our Automated Patrol Telescope, I put together a weather satellite receiving station here at Siding Spring Observatory. This receiving station gathers weather images

from passing NOAA weather satellites, and then promptly places the images at:

www.phys.unsw.edu.au/~map/weather

This website has proved to be very useful for Siding Spring astronomers, but also anyone interested in forecasting the weather in south eastern Australia and Tasmania. These images are somewhat clearer and more detailed than the pictures seen on TV and newspaper weather reports. Daytime

images, which show low cloud and vegetation distribution, can sometimes look quite stunning. But at our house we find the greatest use of this website is taking a punt on whether to put the washing out or not.

Readers with keen memories might recall that Andre’s previous mention in these pages chronicled his marriage to Claire, whom he first met at a *Skeptics* function.



Skepticism and Psychotherapy

Unhelpful approaches to mental and emotional disorders



Jill Gordon is Associate Dean for Medical Education at the University of Sydney. She also practises as a psychotherapist on Sydney's North Shore.

The following is the text of a talk presented by Prof Jill Gordon to the NSW Skeptics Dinner Meeting at the Chatswood Club on April 12.

What do we mean by psychotherapy?

Psychotherapy can be defined simply as the treatment of mental or emotional disorders. Psychotherapies can be classified as:

1. Orthodox and empirically tested

Supportive psychotherapy — providing an open and non-judgemental opportunity to discuss problems.

Cognitive behaviour therapy — challenging and changing negative thoughts and beliefs.

Pharmacotherapy — using mind-altering medication.

2. Orthodox and not empirically tested

The most famous example of orthodox psychotherapy that was never tested in any meaningful scientific way is psychoanalytic psychotherapy.

3. Unorthodox, empirically tested and persistent despite their failure

Most of the unorthodox approaches look attractive at first, but end up failing scientific testing — eg, rapid eye movement desensitisation. (Successful therapies eventually become the orthodoxy.)

4. Unorthodox and not empirically tested

“The crazy therapies”, according to Singer and Lalich.

An interesting feature of this group is the profound lack of interest in truth or accuracy — or at least a “post-modern” aura that makes the truth whatever you want it to be. These therapies include way-out methods for way-out diagnoses such as repressed memory syndrome and multiple personality disorder (dissociative identity disorder).

Intersecting with the psychological disorders are numerous apparently physical disorders, for which psychotherapy may be more appropriate than orthodox medical therapy. This is the group of syn-

dromes, most recently Gulf War syndrome, but including chronic fatigue syndrome, fibromyalgia syndrome and multiple chemical sensitivity. These syndromes are almost certainly more closely connected to the anxiety disorders, including post-traumatic stress disorder in veterans of war, than to any other cause.

We also need to remember that while the principle of Ockham's razor advocates that we prefer the simpler to the more complex explanation of any condition or event, sometimes a less obvious explanation, or even two explanations may be required and they are most often a combination of physical and emotional factors in any illness experience.

Therapies Can Be	Orthodox	Unorthodox
Tested	eg, cognitive behaviour therapy	eg, rapid eye movement desensitisation (failed but flourishing)
Untested	eg, psychoanalysis	eg, primal screaming, repressed memory syndrome
Therapists Can Be	Scientific	Unscientific
Caring	The ideal therapist	The quack
Uncaring	The technician	The psychopath & guru

Psychoanalysis

Among the orthodox psychotherapies we tend to think of psychoanalysis as the prime example, with famously narcissistic figures such as Woody Allen having daily psychotherapy for decades and still finding the seduction of Mia Farrow's adopted daughter OK. Woody Allen's approach is "I'm not afraid of dying. I just don't want to be there when it happens." I heard recently that Woody had given up on psychoanalysis, which must be devastating for his therapist. (Can you think of any other job in which you only need to persuade anything from ten to twenty people to pay money to talk to you for an hour twice or more each week, in order to make a large amount of money?)

Psychoanalysis has been amazingly resistant to skeptical assaults. Forty years ago, Leon Eisenberg, an academic psychiatrist in the US observed:

From any scientific vantage point, what is remarkable is the preoccupation with intensive individual psycho-

therapy. After some five decades of its advocacy as the preferred method for the treatment of emotional disorders . . . we have no evidence that any one way of doing it is better than any other or that long-term is superior to brief psychotherapy. (Frank 1961).

Confronted with this distressing state of affairs, some ... reply that psychoanalysis was never really intended as a method of treatment but as a research tool for the investigation of the personality. But this is hardly any more credible, since the 'research' method seems to follow none of the accepted scientific principles of prediction, design, control and quantification . . . The history of science . . . is replete with instances in which an initially liberating conceptualisation, once institutionalised, becomes a barrier to progress.

What is most amazing about psychoanalysis is that it survived for so long, while in the field of clinical psychology, real scientific progress was occurring, while failing to be adopted in routine medical practice. This reflects the dominance of the medical profession as much as anything else. In Australia today, patients cannot obtain Medicare rebate from a registered clinical psychologist with many years of clinical experience, but they can obtain a Medi-

care rebate for a visit to a doctor, whether qualified in psychological medicine or not. Doctors have also managed to keep tight control over the right to prescribe medications, another factor that has ensured medical dominance in the treatment of psychiatric conditions.

It is interesting to speculate on why psychoanalysis persisted in the US long after it had been largely dropped in the UK and in Australia. The reason for this is almost certainly traceable to the Second World War and the fact that three quarters of the mainly Jewish psychoanalysts who fled Europe in the 1930s travelled to the US. In *Madness on the couch: blaming the victim in the heyday of psychoanalysis*, Edward Dolnick speculates that the appeal of psychoanalysis from the analysts' perspective at this time,

was its reliance on nurture as an explanation of psychopathology, rather than nature, so vilely exploited by the Nazi regime. It may have seemed more acceptable to explore elements of the environment, such as the family, that could be changed, and to reject genetics or neuro-chemical disturbances or any other explanations that seemed to offer a narrow reductionist account of psychopathology, less amenable to intervention.

Despite the bunkum, psychological disorders are real and important

There is no doubt that psychological disorders are common and may be incapacitating. I put aside for the moment some of the most serious psychiatric conditions such as schizophrenia and manic-depressive disorder, where the neuro-chemical disturbance behind the disease is becoming more and more clear and more and more susceptible to effective treatment using antipsychotic drugs. For psychiatrists who are old

enough to remember what psychiatric hospitals were like before these drugs were invented, this 20th century advance is by far the most miraculous of all in the practice of psychiatry.

However, even relatively mild disorders can significantly damage quality of life. In contrast to the Woody Allen view of navel-gazing self indulgence, think of the damage done, in particular by severe depressive disorders including postnatal depression, post-traumatic stress disorder and even personality disorders. The depressive disorders in particular can be fatal because of the danger of self-harm. The eating disorders likewise carry a risk of death. Personality disorders such as borderline personality can involve significant self-mutilation. Less serious, but also distressing and the anxiety disorders — OCD, phobias, generalised anxiety disorder. Some of these prevent people from participating in life, developing relationships or working.

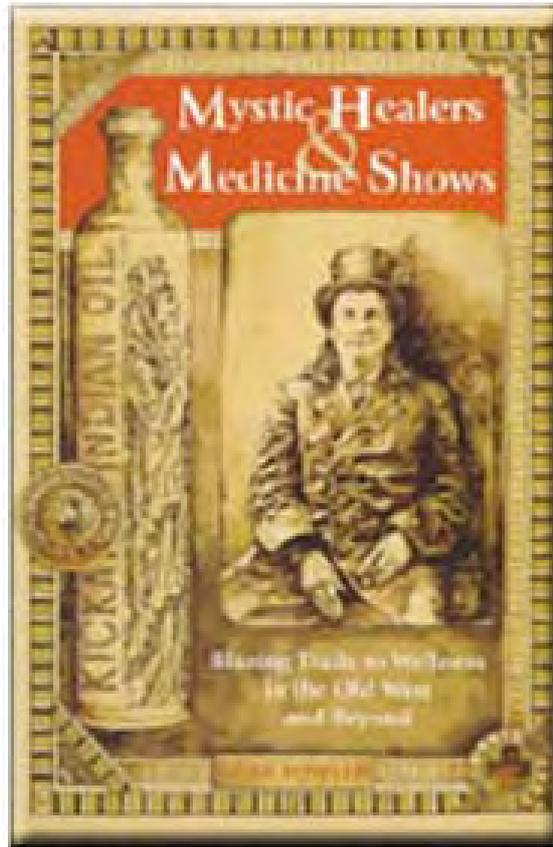
So here we sail between Scylla and Charybdis — not over-inflating the importance of psychological disorders but not denying them.

In depression alone, we know that many suffer in silence, that there is still shame attached to the diagnosis and that it may well be the price of a creative mind — famous sufferers include Michelangelo, Van Gogh, Virginia Woolf, Charles Darwin, Abraham Lincoln, Schumann, , Handel, Milton, Coleridge, Byron, and Winston Churchill.

In post-traumatic stress disorder, we are only just coming to grips with how to counteract the effects of war, terrorism and torture on psychological well being. Unfortunately we seem to be incapable of avoiding war, and all too ready to bury not only the dead, but the terrible after-effects on those who have been involved in conflict.

Quack psychotherapy

Next door to our old practice, Saturday morning surgery was regularly interrupted by strange and disturbing noises coming from the alternative medicine practice across a laneway. This proved to be due to “primal scream” therapy being conducted there.



Arthur Janov is the name associated with so-called primal therapy. According to Janov the patient frees himself of primal pain by learning the proper way to scream. Variations on the theme abound; Daniel Casriel uses New Identity Process (NIP) to unblock whatever is blocked and Nolan Saltzman practises Bio Scream Psychotherapy. (His screaming is said to be better than Casriels or Janov's because it has more “Love” in it!)

There are many advertised ways of acquiring qualifications in psychotherapy — from university degrees to weekend courses. For hypnotherapy, Singer and Lalich note:

There are no licensing requirements for training, and no professional organisation to which therapists are accountable. You can be a real estate agent, a graphic artist, an English teacher or a hairdresser, and still call yourself a hypnotherapist by hanging a certificate on your wall that took as few as 18 hours of courses in hypnosis.

There are also many advertised ways of obtaining relief from psychological problems, including motivational workshops and the employment of life coaches who have about as much training as the hypnotherapists. People do not know what they are getting and therapists do not necessarily know what people want.

The unconscious mind

Scientific research does not support the psychoanalytic concept of the unconscious mind as the reservoir of repressed sexual and traumatic memories. There is however, ample evidence that there is a type of memory of which we are not consciously aware, yet which is remembered. This type of memory has been called implicit memory. A famous example concerns a patient who had brain damage resulting in partial memory loss. She was unable to remember recent

events and every time the treating neurologist saw her in the hospital, she could not remember having seen him before. One morning he introduced himself for the hundredth time. He held out his hand with a pin hidden in his palm, and as they shook hands, the pin pricked the palm of her hand. The next day, she again could not remember him, and met him as if for the first time. When he held out his hand she refused to shake it, and felt a fear that she could not explain. This story illustrates the existence of two kinds of memory.

In order to have memories we need extensive development of the frontal lobes, which infants and

young children lack. Memories must be encoded to be lasting. If encoding is absent, amnesia will follow, as in the case of many of our dreams. If encoding is weak, fragmented and implicit memories may be all that remain of the original experience. There is no possibility of recalling abuse or anything else in prenatal, early postnatal life or infancy. We simply don't have that capacity in the frontal lobes until the early stages of development are complete.

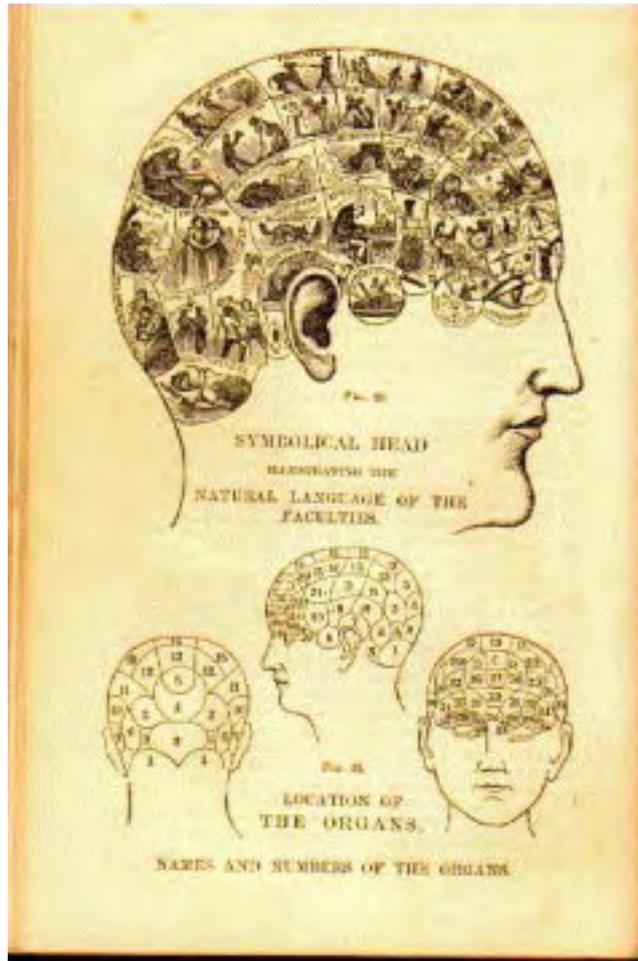
Implicit memories of abuse do occur, but not under the conditions assumed to be the basis of repressed memory syndrome. Implicit memories of abuse occur when a person is rendered unconscious during an attack and cannot encode the memory very deeply. This can happen for example, during a vicious attack such as a rape. A woman may lack explicit memory, because she was unable to deeply encode the trauma due to the viciousness of an attack, in which she lost consciousness. She may still suffer terribly from the implicit memory, lacking the capacity to recall exactly what it is that causes her such deep distress and anxiety. Not only is this person likely to suffer at the hands of the law, as women have done for countless centuries, but she is in danger of further abuse if an untrained therapist creates a false memory in the victim, abusing her yet again.

The completely unsubstantiated arguments are that all psychological problems arise from experiences in early childhood. We know that some children suffer terribly, but manage to become well-adjusted adults and that some people with relatively happy experiences in childhood suffer from psychological problems. There must be better explanations that some of the crazy notions being peddled today.

Freud himself believed that the most significant advances would be

made in the field of neurochemistry and neurophysiology. He said:

All our provisional ideas will some day be based on an organic sub-structure ... We take this possibility into account when we substitute special forces in the mind for special chemical substances.



If Freud is right, then we should expect to reach a time when psychotherapy will be based on a much more advanced understanding of the way the mind/brain actually works. This is becoming a reality and the application of scientific thinking is occurring in three different ways, one of which is of the type that Freud predicted.

The diagnostic capacity of modern medical imaging techniques many of which have been made possible by the development of powerful computers to create images in a variety of ways.

The application of the scientific method.

New methodology to combine the results of scientific studies to arrive at the best available evidence for the efficacy of any kind of treatment.

1. Evidence from imaging

As you know, ordinary X-rays do a great job of showing up bones and picking out organs which contrast with air, as the heart contrasts with the lungs, but ordinary X-rays do not pick up the brain inside the human skull.

Positron emission tomography (PET) scans detect decay of radioactive tracers in the bloodstream to form active images. PET can be used to diagnose changes in brain activity due to mental illness, drug use, or disease such as Alzheimer's disease and Parkinson's disease.

CAT scans are a step forward from X-rays because in a CAT scanner the rays pass through the brain in a narrow beam. The X-rays travel through the body at various angles, allowing cross-sectional images to be obtained by X-ray detectors arranged in an arc. They feed information to a computer that generates the scan image.

MRI scans are similar to CAT scans in some ways, but produce clearer and more detailed pictures. What happens in an MRI scan is that radio waves are used to excite atoms in the brain. This produces magnetic changes, which are detected by a huge magnet surrounding the patient. These changes are again interpreted by a computer and turned into a very precise three-dimensional picture. MRI scans can be used to detect very small brain tumours, for example.

MRI scans provide more detailed information about the brain than

CAT scans. MRI scans can be obtained from numerous different angles, whereas CAT scans can only be obtained in the horizontal plane. However, MRI scans share with CAT scans the limitation of telling us about the structure of the brain rather than about its functions.

The MRI technology has been applied to the measurement of brain activity to provide functional MRI (fMRI). This approach provides three-dimensional images of the brain with areas of high activity clearly indicated, so one has a picture of the brain while it is functioning. Functional MRI provides more precise spatial information than PET scans, and it also shows changes over much shorter periods of time.

You may be familiar with pixels which an abbreviation for “picture element”. It is the smallest graphic unit of display on a screen. Now a “voxel” is a 3D pixel, and represents the activity of several thousand neurones. One day it is predicted that we will be able to measure activity in individual neurones. In the future it will be possible to directly observe the chemical action of medication in the body, and make precise diagnoses of conditions such as ADHD.

We can now examine brain development in ways never thought possible. We now know that schizophrenic patients have activity in the part of the brain that registers sounds in the same way, whether they are hearing actual voices or reporting hearing voices. (fMRI)

We know that the prefrontal cortex (the part of the brain that helps us to assess social relationships and to plan control of social behaviours) thickens just before puberty, then slowly returns to prior state. Surprised?

We know that a person learning Braille for the first time will experience development of the cortical area that represents the finger tips. When the Braille practice stops, the area reverts to its original size.

We can now see that certain areas of the brain are involved with experiences such as pleasure. There is evidence that the pleasure areas

that are activated by erotic films are the same as those involved in addiction to drugs such as cocaine — the visual areas / limbic areas / orbito-frontal cortex and amygdala.

2. Research in psychotherapy

The difficulties of undertaking research in psychotherapy help to explain some but not all of the slow progress we have made.

Problems

- Meaningful control groups
- Uniformity of treatment
- Ethics of randomisation
- Double blindness
- Measuring long term psychotherapy.

3. Evidence-based medicine

Even when good scientific research is carried out, as it has been, there are serious challenges in combining the results of different studies that may use different methods. This is another area where the power of computers to manage huge amounts of data has enabled us to move toward a firmer base for medical practice, now called EBM. Evidence based medicine (EBM) emphasises the need to move beyond clinical experience and physiological principles to rigorous evaluations of the consequences of clinical actions.

Just because something seems to make sense, it doesn't mean that it will work. Eating the brain of a dead tribe member does not confer the characteristics of that person to the consumer.

In medicine, it was thought for many years, that premature newborn babies would benefit from being giving a little extra oxygen in the air in their humidicribs. It took some time before the connection was made between the oxygen level and the damage caused to the developing retina. Even when the research was conclusive, this practice persisted, causing needless blindness in hundreds of vulnerable premature babies, as if they did not have enough to contend with.

This may seem self evident, but it is interesting to note the vigorous opposition that has come from some doctors, who should welcome EBM with open arms. One of the reasons behind the opposition is almost certainly the fact that this is a revolution of Copernican proportions. The doctor is no longer the sun, in the middle of the health care system. She or he has been displaced by a new solar system — the sun is now the best available evidence at any given time and the doctor is just one of the planets in the system.

The evidence that this new sun represents is most easily accessed by doctors with the training to understand the evidence, but it is not limited to doctors. They no longer have completely privileged access to knowledge, and in fact, a determined lawyer, for example, should be able to obtain the best available evidence, independent of the expert medical witness in a law suit.

What do we know about psychotherapy that works?

The personality of the therapist himself or herself probably makes a greater difference than the discipline in which they trained. The evidence of the dynamic nature of the brain suggests that we can make significant changes to the wiring of the brain through practice — giving more credibility to the claims of CBT.

Factors in the patient are important, including the pre-morbid personality, early environment, intelligence and the social circumstances of the individual — family, friends, housing, etc.

The first 18 months of life are vital — and the growing brain does not need the stimulation of kindy-jimbaroo etc etc, but the gratification of basic sensory and other physical needs, such as any loving adult can supply.

Basic trust in the personal and physical world that surrounds him is the air that the child must breathe if he is to have roots for his own sense of identity and for the related

sense of his place in the world
Lynd, 1958.

It is true that the early months of life are vital, as demonstrated so tragically by the children institutionalised during the Ceausescu regime in Romania. However, the simplistic explanations of the links between childhood experiences that may not have even happened, and the personal characteristics of the adult patients who accept the validity of crazy therapies is another matter altogether. Just as there are four types of psychotherapy, there are four varieties of psychotherapist. The therapies may be orthodox or unorthodox, tested or untested. The therapists may be caring or uncaring, and their approach may be scientific or unscientific.

Why does non-evidence-based psychotherapy prevail?

Three reasons are apparent: the money, the prestige and laziness.

1. Money

Because psychological interventions are hard to evaluate, there is always someone who can make a buck out of them. Wherever there is a buck to be made, it is the investor as well as the supplier of services who stands to benefit. Here is an excerpt from a prospectus from Salomon Brothers (a Wall St brokerage firm) referring to the way it works in the US:

The psychiatric hospital industry is attractive for investors. In-patient psychiatric care is widely insured, occurs with predictable and increasing incidence and is complex enough to render cost control efforts difficult . . .

[Additional] advantages over general hospitals include the widespread acceptance of two classes of psychiatric care (high quality in private psychiatric hospitals. . . versus lower-quality care in government-owned mental health centers). (advisory to clients: The Psychiatry Hospital Industry - Industry Overview.)

Pharmaceutical companies also

stand to make huge profits from psycho-active drugs. The most amazing thing about modern drugs is that they should be less appealing than the mood-altering drugs that preceded them: A century ago, so many medicines were laced with opium that the US imported the equivalent of 15 doses to every man, woman, and child in the country each year. No sooner had opium been curbed than cocaine became popular. In the 1930s barbiturates became the drug of choice and the 1950s ushered in the amphetamines, which were prescribed for everything from depression to weight loss. This was followed by benzodiazepines such as Valium in the tranquillizer decade.

Prozac and other anti-depressants now rank among the best-selling drugs of any kind. But these drugs are much less effective than many consumers and doctors believe. The newer antidepressant drugs post only marginal advantages over placebos in clinical trials for major depression, and cause frequent and unpleasant side effects.

Considering all of the evidence, including the evidence that cognitive behaviour therapy is just as effective as pills for mild to moderate depression, it is difficult not to conclude that the pharmaceutical companies have pulled out all stops to mislead the medical profession about the efficacy of drug treatment for depression.

2. Prestige

As has been shown repeatedly, the successful guru is one who can create a world in which all of his or her predictions are fulfilled. The greatest human fears are fear of death, fear of loneliness, fear of making the wrong decision and fear of failing to lead a meaningful life. Quacks succeed by offering a sure-fire remedy for one or more of these aspects of the human condition. Religions succeed by offering a sure-fire remedy for all four. The associated prestige makes it very hard to take the path of science, where the prestige is limited to a tiny number of award recipients, and daily work is mainly

just hard slog alleviated by the joy of understanding the nature of things.

3. Laziness

This leads us to the last reason why crazy psychotherapies prosper, and that is laziness. If you can make loads of money and have loads of prestige with so little effort, then why worry about the harm you might be doing? Even the patients you harm will be grateful, although victims' families and friends may not.

The essence of a valid therapeutic experience

The goal of mental health treatment is to help an individual to grow in terms of their personal maturity and coping skills. Outcomes should include improved quality of life and improved interaction in significant social settings, such as within the family, or with friends and co-workers.

People can gain significant help from relatively objective, evidence-based therapy in an environment where they can discuss emotionally challenging issues in safety.

To give Freud his due, and despite the failings of classical psychoanalysis, the British psychiatrist Anthony Storr said in 1996:

Freud's technique of listening to distressed people over long periods, rather than giving them orders or advice has formed the foundation of most modern forms of psychotherapy, with benefits to both practitioners and patients.

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Microwave Ovens, John F. Kennedy, Anti-Semitism and Homophobia:

Or, the safety of cooking a dinner in 3 minutes flat

Author learns that there's a lot more to cooking than watching a TV chef.



David Vernon, who works at the Dep't of the Environment, is a founding member of the Canberra Skeptics.

For more years than I can remember, some relatives of whom I am very fond have been attempting to wean me from my addiction to cooking with microwave technology. They are concerned that the nutrients in my food will be destroyed by microwaves, that toxic materials will be produced by the radiation and, I suppose by inference, that my overweight 90 kg body will fade to a mere skeleton and I shall come down with terminal cancer.

Recently, I was handed a photocopied treatise that 'demonstrated' that microwaving was bad for my health and that I would be well advised to 'stop it at once' — although whether or not I would also go blind was not expressed. I decided to research the claims made in the treatise, and using this newly gained knowledge, either give up my microwave habit completely, or continue with my culinary habits.

Much to my surprise, my research led me down some very murky trails, including into the cesspit of American and European anti-Semitism, JFK conspiracy theories and Christian fundamentalism — places that I normally avoid like the plague.

The Treatise

*Health Freedom Resources
Public Awareness Bulletin #1
12 June 2000*

This excellent article was written by Anthony Wayne and Lawrence Newell. Reprinted with the permission of The Christian Law Institute.

Radiation Ovens

The Proven Dangers of Microwaves

Is it possible that millions of people are ignorantly sacrificing their health in exchange for the convenience of microwave ovens? Why did the Soviet Union ban the use of Microwave ovens in 1976? Who invented microwave ovens, and why? The answers to these questions may shock you into throwing your microwave oven into the trash.

So began the ten-page treatise that would wean me off microwave cookery.

The version of *Public Awareness Announcement #1* (henceforth PAA1) that I had been given had been written in Courier font and appeared to have been photocopied several times. Page numbers were written in by hand. It was therefore unclear whether this was a document that had been transmitted via the Internet (where much pseudo-scientific material resides these days) or whether it had been typed and re-typed and handed on. If it were an Internet publication then I would be able to find some 'context' regarding the authors and publishers and this would help identify their approach to the subject.

A search on the Internet found at least fifty sites hosting the exact treatise or a very close copy of it. Not all had the heading 'Health Freedom Resources' but all had the tagline that this very important document was written by Anthony Wayne and Lawrence Newell.

'Health Freedom Resources'

My first task was to find out about 'Health Freedom Resources.' What type of organization was it? Did it have any scientific credibility?

Health Freedom Resources Inc, based in Florida, USA, appears to be a organization run by a gentleman called Rod Radstrom who sells herbs, homeopathic remedies, alternative-medical technologies etc. As a 'free' service to its members and customers, it provides an:

... on going series of informative articles aimed at helping you improve your life and the lives of others... the articles we will select are intended to point out to our public where the 'land mines' are located and where the taped path really lies towards a harmony with life and nature on all its dynamics.

Among the fifty-seven Public Awareness Bulletins (PAB) on offer were:

#2 — *Fluoride – Cure or curse*

#3 — *Aspartame kills*

#8 — *Aluminium metal poison*

#14 — *Dangers of vaccination*

#15 — *The olive oil scandal*

#23 — *Bad MDs and Gun Control*

#57 — *Children's vaccination warning.*

Not wanting to destroy three major native forests in downloading all the PABs, I chose one (PAB23) which seemed particularly incongruous. PAB23 compares the number of accidental deaths caused by physicians in the United States (apparently 120,000pa) with the number of accidental deaths caused by gun owners (apparently 1,500pa). By dividing the number of deaths by physicians and by gun owners, Ron Radstrom states that "Statistically, doctors are approximately 9000 times more dangerous to one's health and life than gun owners." He concludes his article with:

Please alert your friends and family to this alarming threat. We must boycott the services of allopathic physicians before this gets out of hand. Fact is, 'Guns don't kill people, conventional medicine does!'

Without even checking Ron's statistics, there are two simple points to be made. Firstly, how many deaths are deliberately caused by physicians (negligible) and compare this to how many deaths are deliberately caused by guns (28,663)? Secondly, if you had colon cancer, would you go to a physician for help, or a gun owner?

Discovering the nature of "Health Freedom Resources" did not condemn the authors of PAB1 however. More research was required.

The Christian (Common) Law Institute and Anthony Wayne

According to Ron, PAB1 was reprinted with permission of the Christian Law Institute. A search on Google failed to identify such an institution. However, it did identify a Christian Common Law Institute run by Anthony Wayne (one of the authors of PAB1) among others. The Christian Common Law Institute is

hosted by Lawgiver.org, whose purpose according to its 'privacy statement' is as follows:

The Lawgiver.org network represents an ecclesia - ekklesia - of Good and Lawful Christian Men and Women assembled in the Liberty of Fellowship and Freedom solely in and of Our Sovereign Lord and Savior Jesus, the Christ. This electronic means of bringing His Gospel to all the world, including all the material posted herein, is an exclusive Domain of and in Christ Jesus as declared by His Authority as absolute Sovereign King of Kings. All Internet pages on the Lawgiver.org network are private Ecclesiastic material reserved for the exclusive use and viewing of those who are of the Tree of Life.

Furthermore:

The Lawgiver.org network is not a religious organization, not-for-profit corporation, IRS 501(c)3 tax exempt status, or any other artificial or fictional organization or entity; nor are we subject to any commercial laws, the UCC, codes, statutes, administrative rules, UCMJ, martial law, or any other purported regulations and laws that are not founded of the Tree of Life. We are responsible and answerable only to the Laws of God, the Lex Ecclesia Domini.

Finally:

We are not in any way associated with, nor do we approve of, any non-Christian, non-ecclesiastic, fascist, or racist group using the Name of Christ Jesus as a means for their promotion of non-Biblical and anti-Christian beliefs and ideals.

What this actually means is hard to ascertain, but some quotes from news articles on the website highlight the views of those who run it.

On women:

To find a masculine president, one has to go back to Ronald Reagan. Before that, however, the vast majority of US presidents, Republican and Democrat, exuded masculinity and manliness. Those days are over.

Microwaves

Today, women must be appeased and catered to. They are the heads of businesses, the heads of churches, and the heads of their homes. In politics, the women's vote is usually the one that turns the election.

Women serve on military ships and in military operations.

They dictate their children's upbringing (which explains why most of them grow up undisciplined and spoiled, by the way) and have the final word on virtually all family decisions. Such a phenomenon is the sign of a nation in trouble. God's prophet warned that one of the marks of a nation under divine judgment is when "women rule over them." (Isa. 3:12)



The WMD in the kitchen?

On the American Civil War:

The alleged civil war was a war between the southern Christian Constitutional Republic of America and the northern foreign commerce merchants (mostly British) who supported the central government and their military as an enforcement tool of their desires.

On social security:

The Social Security systems also plays an important role in sealing the fate of a people ... Social Security is both a Corban which Jesus warned against [see Mark 7:11] and a corvee system of statutory labor [not unlike that slavery in Egypt] where by a portion of your sweat, blood and tears becomes the property of the State in return for the security and protection of that exclusive corporate society.

I could find no biography of Anthony Wayne on the site, but I was able to find a link to another one of his research reports entitled JFK vs the Federal Reserve. This six page paper clearly identifies Anthony Wayne as the author. In summary, it explains that John

Fitzgerald Kennedy was killed by assassins employed by the United States Federal Reserve Bank. An afterthought to the paper (possibly not written by Anthony Wayne) concludes (in the author's own words/spelling and punctuation):

This is the real reason for the JFK assassination! All the other reasons are the jew / banker controlled CIA / Secret Service mis-direction propaganda... These jew bankers have robbed White Christian Americans of TRILLIONS since at least 1913 ! Do you think they would hesitate to assassinate the US President or anybody, or any amount of people, or do whatever they had to, to keep this GIANT scam going ??? ...Because of this jew banking system, they have financed ever war in the last century, & have killed over 100,000,000 White Christians world wide ! Spread this e-mail to everyone you know & look it up for yourself... Stop believing the jew controlled media. Follow the Scriptures, & search for the truth in everything.

Just because Anthony Wayne writes conspiracy theories and may have colleagues who write grammatically bizarre anti-Semitic material, does not mean that his arguments within PAB1 on microwaves are incorrect. That leads us to our next stop, an examination of 'selected' facts within PAB1.

How microwave ovens work

Microwave ovens work by firing non-ionising radiation at food. The radiation used is called non-ionising radiation because it does not detach charged particles from atoms and hence produce radioactive elements. Microwaves are found in the electromagnetic spectrum between radio waves and visible light. Microwaves used in ovens are electromagnetic waves with a frequency of 2.45 gigahertz or 2,450,000,000 cycles per second. When a microwave hits a water molecule the chemical bonds vibrate. These vibrations increase the heat in the water, causing the neighbouring non-water molecules to warm up via conduction. Hence, unlike 'conventional' ovens where

the food is warmed up from the outside (by convection) and relies on conduction to transfer the heat to the inside of the food, a microwave (depending on the consistency of the food) heats the food reasonably well throughout.

The effects of microwaving food

Now according to PAB1 microwaving has a range of effects on food:

The friction causes substantial damage to the surrounding molecules, often tearing them apart, or forcefully deforming them. The scientific name for this deformation is 'structural isomerism'.

Structures of molecules are torn apart, molecules are forcefully deformed... and thus become impaired in quality.

Because of the force involved, the cells are actually broken, thereby neutralizing the electrical potentials, the very life of the cells, between the outer and inner side of the cell membranes. Impaired cells become easy prey for viruses, fungi and other micro-organisms.

Since people ingest this altered food,

shouldn't there be concern for how the same decayed molecules will affect our own human biological cell structure?

Cooking, by definition alters foods whether by microwave or convection. It breaks down molecules and makes them easier for the body to consume. That's why we cook foods. These 'deformed' molecules and the 'cells [that] are actually broken' provide us with the nutrients that we need to live. Indeed, our entire digestive system is set up to destroy cells into their molecular components, and break down molecules. PAB1 has set up a straw argument. Although the words are emotive — 'substantial damage', 'tearing apart', 'forcefully deforming', 'impaired in quality', 'decayed molecules' — they are simply a description of the function of our digestive system.

PAA1 tells us that microwaved food is toxic:

Naturally occurring amino acids have been observed to undergo isomeric changes (changes in shape morphing) as well as transformation into toxic forms, under the impact of microwaves produced in ovens.

As microwave energy only heats water molecules, that in turn, via conduction and convection, heat the food, any changes in molecules would occur exactly in the same way that it does in conventional cookery (up to the boiling point of water). There is less chemistry occurring in microwaved food than occurs in conventional cooking. This can be seen by the fact that microwaves do not brown foods. The high temperatures required to do the browning (ie, — chemically modify the food components to char and blacken them) are not reached in microwave ovens. Microwaves do less damage to food than boiling food in water (nutrients tend to be retained by food cooked in a microwave owing to the shorter cooking time).

PAB1 also claims that microwaved food is like irradiated food:

Radiation as defined by physics terminology, is 'the electromagnetic

waves emitted by the atoms and molecules of a radioactive substance as a result of nuclear decay.' Radiation causes ionization, which is what occurs when a neutral atom gains or loses electrons. In simpler terms, a microwave oven decays and changes the molecular structure of the food by the process of radiation.

Anthony Wayne has confused ionizing radiation with non-ionizing radiation. Ionizing radiation can indeed alter molecules by adding or removing electrons from atoms. Microwaves, coming from the non-ionizing part of the electromagnetic spectrum have no such effect. There is no radioactive decay of the food.

Microwaving and babies' milk

Baby formula manufacturers often warn parents not to warm the formula in the microwave oven. Some US agencies, according to Anthony Wayne, have stated that some nutrients and other properties of milk (or formula) may be destroyed or damaged by microwaving. He uses this as further evidence for microwave ovens being dangerous.

Warnings are given to parents for one fundamental reason. Microwave ovens do not heat food evenly. That's why turntables are used in ovens, to improve the distribution of the microwaves. Liquid milk is notorious for not heating evenly. As a parent I am well aware that I must shake the bottle before giving it to my baby, not to do so risks dreadful burns to the child's mouth and tongue. If the bottle is 'over heated' then these hot spots will destroy nutrients. Just in the same way that milk heated in a saucepan, if over cooked, will destroy nutrients. It has nothing to do with microwaving; it has everything to do with heating.

Microwaved blood kills patient

In 1989 an unfortunate woman, Norma Levitt, underwent a blood transfusion in Oklahoma, USA. The nurse, who was in a hurry to ensure that the blood was at the correct body temperature, heated it in a microwave. Ms Levitt died shortly after the transfusion.

PAB1 states:

This tragedy makes it very apparent that there's much more to 'heating' with microwaves than we've been led to believe... It's very obvious that this form of microwave radiation 'heating' does something to the substance it heats. It's also becoming quite apparent that people who process food in a microwave oven are also ingesting these 'unknowns'.

As could be expected in the USA, the unfortunate case of Ms Levitt ended up in court. According to the June 1997 edition of the *Risk Management Foundation, Harvard University Legal Report*, it was alleged that the "heating of the blood led to haemolysis (break down of the red blood cells) and this released a large amount of potassium into the blood, which proved fatal."

Like babies milk, blood heats unevenly in microwave ovens, and it is quite likely that patches of blood overheated and the cells were damaged. Again, this is not because there are 'unknowns' in the blood, but because the heating of the blood was done poorly.

The inventor of microwave ovens

According to PAB1:

The Nazis, for use in their mobile support operations, originally developed microwave... cooking ovens to be used for the invasion of Russia. By being able to utilize electronic equipment for preparation of meals on a mass scale, the logistical problem of cooking fuels would have been eliminated...

Electricity grids after battles are notoriously poor and usually nonexistent (particularly in Russia where there were very few powered villages or towns in 1941) and therefore transporting a bulky electric microwave oven is impractical. Perhaps, scarce diesel was used to run electricity generators, rather than putting it in battle tanks, so that troops could have hot cocoas? Linking the Nazis with the allegedly evil microwave is a clever rhetorical device, but completely incorrect.

Troops cooked their food over fires, even at Battalion headquarters. Cooking fuels were too hard to come by. Destroyed houses had lots of wood in them.

The microwave oven was invented in 1946 by Dr Percy LeBaron Spencer, a scientist working for Raytheon Corporation in the USA on radar applications. He walked past a magnetron one day and discovered that a chocolate bar in his pocket had melted. From small things come great technologies.

Cults and microwave ovens

PAB1 makes a big thing of 'scientific research' by Dr Hans Ulrich Hertel, a retired Swiss scientist. Indeed, three of the ten pages of PAA1 are devoted to the Hertel study. PAB1 states:

Dr Hertel was the first scientist to conceive and carry out a quality clinical study on the effects microwaved nutrients have on the blood and physiology of the human body. His small, but well controlled study showed the degenerative force produced in microwave ovens and the food processed in them... Hertel's scientific study was done along with Dr Bernard H Blanc of the Swiss Federal Institute of Technology...

After the publication of the study in the *Journal Franz Weber*, No 19, 1992, which sported a cover of a grim reaper holding out its hand towards a microwave oven, the Swiss Association of Manufacturers and Suppliers of Household Electrical Appliances (SAMSHEA) sought, and was given, a court injunction against *Journal Franz Weber* and Dr Hertel to stop them claiming that microwave ovens were dangerous. This injunction was sought under Unfair Competition laws.

Dr Hertel appealed this decision to the European Court of Human Rights and in 1998 he won, on the grounds that 'freedom of expression is necessary in a democratic society.'

While the manufacturers of a product can be expected to have a strong interest in rebutting claims that microwave ovens are not safe,

there is merit in their arguments against Dr Hertel's study. SAMSHEA's claims were based on two main issues. Firstly, that Dr Hertel's sample size of eight people could hardly be called a scientific study and secondly, that Dr Hertel's collaborator, Professor Blanc disagreed completely with the published findings, stating:

While the published figures and description of the preliminary experiment are correct, I totally disassociate myself from the presentation and interpretation of the preliminary exploratory experiment carried out in 1989, which was published without my consent by the co-author... The results obtained do not in any circumstances justify drawing any conclusions as to the harmful effects of food treated with microwaves...

PAB1 failed to note that Professor Blanc, Dr Hertel's collaborator, and arguably the more qualified member of the team, completely repudiated Dr Hertel's findings. This intrigued me, so it was back to the Internet again.

Dr Hans Ulrich Hertel is not unknown to the court system. As President of the World Foundation for Natural Science, he was convicted and fined in 1999 for violating Swiss anti-racism laws.

Some illustrative quotes from the World Foundation for Natural Science website give a feel for his views:

On the effect of electricity on the earth:

...the unnatural technologies of modern electricity and communication are increasingly affecting life's natural steering mechanisms. The unnatural technical radiation is perverting the sun's natural radiation and is thereby directly causing physical and mental illness to life.

On Jews:

Zionist-jews consider themselves to be something special and consider it their right to live at the expense of mankind and suck the planet dry like vampires. For centuries they

have drawn from everything that has life. They have no right to exist. They will find themselves starving soon enough, even while taking the food from others, for they are spiritually on a trip to a hell of their own creation whether they realize it or not.

On homosexuality:

Homosexuals are generally highly advanced people. They are as a rule, fine of stature, beautiful and of noble appearance, friendly, pleasant, gentle and of a rather spiritual nature and tend therefore often to work in the muses and spiritual professions. In order to balance their polarization - changed male-female status - most homosexuals are left-handed.

Every honest and normal human being must feel and suspect that such behaviour is abnormal and totally against morality, ethics, decency, uprightness, and purity and leads to depravity and decay. There has been nobody around up to the present time who could bring light into this highly disgusting situation.

And the World Foundation's interest in microwaves? Apparently, the "cellular phone (which uses microwave energy) is a strategy of Zion." Furthermore, "the secret world government is using mobile telephones to strongly reduce the world's population in that the signals are said to make men infertile."

An objective assessment of Dr Hertel's writings and the views of his World Foundation, shed some doubt on the credibility of his microwave oven research.

Dinner time

Having looked at the facts of microwaving food and considered the attributes of those who claim it is dangerous, I must go now and cook my dinner. It should be hot within three minutes.



Hairy Diagnosis

Early in 2003 I received a very impressive flyer from a company, Naturopathic Services, PO Box 3920 Robina QLD 4230. It offered allergy testing by either probing [non-invasively] an acupuncture point on the thumb or by my simply sending a sample of hair (plus money).

They claimed to use “modern electronic equipment” to test 260 substances, both generic and proprietary and that “medications will not affect this test.” The brochure explicitly stated that “Colours and perms do not affect the testing”, and that “Hair testing is just as accurate as testing on an acupuncture point”. This last claim I would, perhaps, agree with.

My theatre sister at the hospital occasionally has her hair streaked, so I asked her to provide two small, different coloured, hair samples, which she wrapped in plastic wrap as per the instructions, and which I did not in any way directly handle myself.

I then sent off two copies of the application form for testing of each of these two samples, one in my name at my address, and one in her name at her address, and in each case simply mentioned that the owner of the hair had hay fever.

We each received the appropriate (and radically different) test results, which are shown below. Although the two samples (albeit of different colours) were from the head of the same person, it would appear that only one substance, No 72 — carrot — was common to the two reports.

The nursing sister in question is in fact not allergic to carrots, nor indeed to anything else mentioned in either of the reports. She considers herself very allergic to most cheeses, but the three types of cheese in the report passed with flying colours. She was, however, devastated to realise that she was allergic to Lindt chocolate!

While the “test” results were totally different, the advice contained in the covering letters was almost identical, suggesting mainly avoidance of the highlighted items, and that the naturopath be contacted after 4 weeks. The one difference between the two letters was, however, startling. The form that was returned to me carried the extra advice that I check the Yellow Pages for a Naturopath who specialises in pregnancy!

This little exercise cost me \$190, since I was not able to take advantage of their “Start of the Year Special” offer in time, but I believe it would be \$190 well spent if this could be brought to the attention of the appropriate authorities in Queensland, in order to expunge a mail order scam like this. Both the sister and I would be happy to provide statutory declarations as to the veracity of the details which I have provided in this article.

(Test Results, abstracted from the forms received, are listed in the table. Column A contains those sent to the sister and Column B those sent to the doctor.)

A	B
	Fruit
Kiwifruit	Pineapple
Lychee	Dates
	Condiments
Chicken stock (Magi)	MSG (621)
Mixed herbs	Tomato sauce (Fount'n)
	Tomato paste (Leggos)
	BBQ sauce (Eta)
	Worc. sauce
	Soy sauce
	Horseradish sauce
	Gravox
	Vegetite
	Promite
	Beef stock (Magi)
	Vegetables
Carrots	Carrots
	Nuts
Pistachio	Hazel
	Meats/Fats
Canola oil	Olive oil
	Grains/Cereals
Kidney beans	White rice
Baked beans (Heinz)	Wheat bran
	Dairy Foods
Margarine (Flora)	Nuttalex Margarine
Vitasoy	Aussie soy
Ice cream (Pauls vanil)	
	Sugars
Honey	
Carob	
Chololate (Lindt)	
	Drinks
Beer	Port
Tea	Coffee
Fanta (Orange)	Green tea
	Chemicals
Softly fabric softener	Cold Power (blue)
	Hair/Fibres
Silk	
	Food Colours
	Yellow
	Others
	Cigarette smoke

The author of the above piece is Dr Cholm Williams, a prominent Sydney-based plastic surgeon, who will be guest speaker at the next **NSW Skeptics Dinner Meeting at the Chatswood Club on July 5**.

Full details will be contained in the insert in this issue (NSW subscribers only).

The title of his talk will be:

The Skeptical Plastic Surgeon: Ponce de Leon meets P T Barnum

It will cover historical and current aspects of appearance manipulation, and the way charlatanry has always been an integral part of the scene.

Homeopathic:

Martin Bland and the *Horizon* Dilution Experiment

Further insights into an important experiment

At the monthly meeting of the Canberra Branch of the Statistical Society of Australia on 29 April 2003, Professor Martin Bland of St George's Hospital Medical School, University of London, gave a talk on a homeopathic experiment which recently aired in the UK on the *Horizon* program (Nathan Williams and Rosie Schellenberg, BBC 2002) and in Australia in two parts on *Catalyst* (ABCTV). Martin, the statistician on the project, presented some very interesting detail which did not get mentioned in the TV program. This additional detail provides insight into the way poor statistics can lead to wrong conclusions.

The experiment was conducted according to the most rigorous scientific standards, under the auspices of the Royal Society, and with randomisation and double blinding at every stage. First, a homeopathic treatment was created by diluting a histamine with water one part in 100, repeated 15, 16, 17 or 18 times, so as to make it very unlikely that any molecules of the histamine remained. The control substance was made by treating pure water in the same way. The object of the experiment was to see whether the homeopathic dilution is any different from plain water in its effects on human blood. The hypothesized effects were suggested by positive results in a

similar experiment by Madeleine Ennis at Queens University, Belfast, in 2001. The *Horizon* experiment in 2002 was conducted in an attempt to reproduce Ennis's findings.

The experiment

In the *Horizon* experiment, there were 5 tubes of histamine at each dilution, 20 tubes in all, and 20 control tubes. These were split and the halves of each tube's contents sent to two separate laboratories. The assay used measured basophil activity in human blood. In each laboratory, blood samples were taken from each of 5 human volunteers. The proportion of active basophils in each blood sample was measured after mixing with the test dilutions. All measurements were done blind and in random order. The resulting 200 measurements were then averaged over the 5 subjects. The result was 40 observations, together with their 40 matching numerical labels (20 corresponded to the homeopathic dilution and 20 to the plain water).

The code which identified the origin of the dilutions was broken on camera. To make the presentation televisual, for each laboratory, the 40 labels were listed on a flipchart in two columns of 20, in order of the observations' size, awaiting a code which would match each label with either C (standing for control) or D



Borek Puza lectures in statistics at ANU, when he not designing game shows revolving around doors.

(standing for dilution). If the homeopathic dilution had some effect, it was reasonable to expect more D's than C's in the first column, and vice versa in the second. It turned out that for the first laboratory there were 9 D's and 11 C's in the first column, and 11 D's and 9 C's in the second column. This is almost exactly what one would expect if the homeopathic substance had no effect. For the second laboratory there were 11 D's and 9 C's in the first column, and 9 D's and 11 C's in the second column.

Thus overall there resulted *exactly* what one would expect if the homeopathic substance had no effect. Accordingly, Martin Bland said on the *Horizon* program: "There's absolutely no evidence at all to say there is any difference between the solutions that started as pure water and the solutions that started off with the histamine". Also John Enderby (the adjudicator for the experiment from the Royal Society) said: "What this has convinced me is that water does not have a memory."

An important trend

The above is the essence of what was shown on the *Horizon* program. What the program did not show was that there was a *time trend* in the 40

observations for each subject, possibly because of an ageing of the blood samples as they awaited processing. In particular, the results from the first laboratory exhibited a roughly cubic trend, with the first 20 values for each subject generally smaller than the last 20. Thus if the treatment had been applied to the first half of the blood samples and the control to the second half, it might have been concluded that the homeopathic dilution is different from plain water. For the *Horizon* experiment a cubic regression was used to adjust in each laboratory separately and the residuals averaged across the laboratories to give the final outcome variable. The mean basophil activity was compared between the dilutions, with no evidence for any effects.

This trend may partly explain why Madeleine Ennis's experiment in 2001 led her to a positive result and that conclusion. The *Horizon* experiment was protected against this type of error by way of randomisation. It was also guarded from other types of error by way of being double blind. It is not clear whether Ennis's experiment was double blind or the order randomised, both of which desirable practices are often absent in laboratory science.

Martin and the team of researchers (including the famous James Randi who offered to pay US\$1,000,000 in the event of a positive result) have written a paper on the *Horizon* experiment which has been turned down by *Nature*, where the controversy began, on the grounds that the subject has moved on to the specialist literature. They are hoping for a better result elsewhere.

Editor's Footnote:

Many Skeptics who saw this *Horizon* program covering the investigation of claims made for homeopathy, contacted *the Skeptic* after the first half was aired by *Catalyst* on ABC TV. They were concerned that the teaser for the second half left the impression that we (Skeptics) might be in for a shock. We confidently predicted that the only people who stood to be shocked were the proponents of homeopathy. Of course we were proven correct when the second part went to air, but we claim no psychic prescience, nor was it overconfidence. The fact was simply that, had our friend James Randi paid out the million dollars in 2002, we would certainly have known about it before the program went to air.



An Advance Abject Apology

It is not uncommon, in journals of far lesser stature than this august publication, to make corrections of errors, usually weeks after the event and on the same page that chronicles the shipping news. At *the Skeptic*, we like to think we are above such shabby tricks, so we hereby make journalistic history by publishing an apology concurrently with, or in advance of any such errors.

The story is thus. In recent weeks, Skeptics Central Office has become the domicile of two adolescent females of the feline persuasion. As totally up-to-date and politically correct young ladies, the Misses Xanthe and Xena (yes, the No 1 Official Skeptical Grandson is going through a phase) are not



content with being mere *pets*, they insist on earning their keep (incidentally, often taking on an aspect that is an anagram of *pets*). Were this to take the form of keeping down the rodent population there would be no problem, but as each seems to imagine that she has some rare computational skills, no keyboard is safe from their attentions.

We therefore take the opportunity to warn readers that if any part of this issue appears to be in an obscure Finno-Ugric dialect, it does not represent your columnist's desire to play Mark Newbrook at his own game, rather it reflects a tragic feline inability to spell.

Bunyip

Hair Today ... Healing and Hairdressing

When next you go for a trim, make sure you don't get clipped.

Have you ever been at the hairdressers, having a quick trim and thought, wouldn't it be convenient to have my haemorrhoids healed too, all on the same premises? No? Well, there's a new craze in the sleepy town of Yandina in the Sunshine Coast, Queensland. A client may also be a patient in Angela's salon-cum-surgery, where one can have a shampoo, cut, blow dry and session of healing all at once! 'Healing Hair by Angela' was advertised in the *New Age Oracle* newsletter published in the Sunshine Coast. At first I thought that Angela might be a trichologist or a hairdresser with a whacky, esoteric, Sunshiny Coast name. A phone call to Angela quickly revealed that she does both 'healing' and 'hair', I had uncovered a 'healing hairdresser'!

History

But is medicine and hair styling such a unique coupling? Europe in the middle ages saw a new medical practitioner emerge; the barber-surgeon. The barber-surgeon engaged in bloodletting and other minor procedures, including leeching, enemas, setting fractures and lancing boils and many also extracted teeth, along with their standard haircutting, styling and shaving work. Some, more skilled, undertook the more complex tasks of excising tumours, limb amputation, cataract removal and extraction of kidney or bladder stones. Before the emergence of the barber-surgeon, monks had usually performed this work until, in 1163 at the Council of Tours, Pope Alexander III banned monks from drawing blood from humans, declaring it sacrilege.

Secular employees of the monastery, the barbers, who once assisted the monks in their surgical tasks, were skilled in wielding blades and so naturally assumed these duties. Barber-surgeons eventually established their own guilds and competed for respectability with apothecaries and physicians. Surgery was perceived as a menial task below that of a physician, although many still engaged in this work. George Washington was bled to death by his physician in 1799.

Some barber-surgeons travelled between villages, offering their services at markets and fairs, while others operated (excuse the pun) from their own shops. They advertised with a symbol that endures to this day, a red and white striped pole. The origin of this barber's pole appears to be associated with bloodletting. The original pole balanced in a brass basin, which was used to store leeches or to receive blood, while the pole itself represents the staff to which the patient held during the operation. The red and white stripes represent the bandages used during the procedure, red stripes signifying the bloodstained bandages and white stripes the clean bandages. After surgery the bandages were washed and wrapped around the pole to dry, forming the spiral pattern similar to the modern day barber's pole.

The practice of barber-surgery lasted for over 600 years in Europe, continuing until the mid-eighteenth century. Angela has revived this practice, with a twist. She claims to be able to diagnose and heal her patients, without invasion, unlike the barber-surgeons who attempted



Karen Stollznow, a postgraduate student in linguistics, regularly subjects herself to dubious health modalities for the Skeptic.

to treat people with surgical procedures in a manner acceptable and orthodox in its time. However, like the barber-surgeon, Angela has no medical training. Barber-surgeons were more craftsmen than medics, and Angela appears to be more hairdresser than healer.

Setting the scene

I arrived at Angela's home practice, where she conducted the consultation *al fresco*, in the rain. She told me a little about herself; a hairdresser for twenty years, she had been unwittingly 'healing' her clients for six years. "Without knowing it, I had been working on people's 'crown chakra', healing them through their head. Healing them with love and light". With clients reporting that not only their split ends but also their symptoms were disappearing, Angela began offering her 'healing', alongside her hairdressing services. She claims that hairdressing typically involves counselling clients and that her move to offer healing services was a natural corollary.

Granted, conversation is part of the experience of visiting the hairdresser; they are places renowned for gossip and revelations, but any advice offered is purely gratuitous — and unrelated to medicine!

After a brief chat, Angela asked, "who are you?" Affording her a glimpse into an analytical nature I responded, "In what respect? Do you want to know my age, my gender, my career, my beliefs or what?" Some circumlocution later, a visibly irritated Angela said, "I am love and light, what are you?" After I muttered a few references to anatomy and biology the questioning came to an end. It appeared that Angela's beliefs were an eclectic mixture of the most trendy aspects of Christianity, Buddhism, Hinduism with facets of Scientology and the New Age all thrown in together.

The treatment

She ushered me into her salon/surgery. It was quite a sight — at the back was the standard hairdresser's equipment, a chair and basin, another chair for styling, mirrors, tow-

els and hair products. Taking up the greater part of the room was an examination bed, as one would find in a doctor's surgery. Buddhist statues, candles and crystals abounded. Instead of doctor's surgery muzak, New Age music was playing, pan pipes, rainforest noises, waves. Beauty magazines piled high beside stacks of New Age books and magazines. The air was heady with the scent of lemon aromatherapy oil and hair colour/perm chemicals.

I was asked to remove my shoes and lie upon the examination bed. Angela wrapped me in a pink waffle blanket and proceeded to go to work, 'laying on hands'. Her 'hands on' technique was unique, as most other healers I have investigated do not directly touch their patients, and rightly so. Standing over me, she placed her hands directly on my forehead and applied a fair amount of pressure, followed by a display of glossolalia, otherwise known as 'speaking in tongues' (or nonsensical gibberish).

[The term glossolalia is derived from the Greek *glossa*, 'tongue' and *lalia*, 'to talk'. Glossolalia is a phenomenon which usually occurs in a religious context, in which the believer, in a self-induced ecstatic state, vocalises unintelligible, language-like sounds that are apparently devoid of semantic meaning and syntax, yet are taken by believers to contain a divine message. It is mainly practised by Charismatic religious denominations such as Pentacostalists, Charismatics, Quakers, Latter-Day Saints and Mormons. Early Methodists and some Presbyterians in the 19th century practiced glossolalia. It is also a favourite trick of many televangelists. Psychologists explain the phenomenon as a hypnotic trance resultant of religious excitement. From a linguistic perspective glossolalia may be learned behaviour and appears to imitate other languages known by the speaker.]

Angela appeared to be in a self-induced trance during the 'hands-on' session. She moved her hands around various points on my face and neck, then moved down to my feet and back up to my stomach. At this point, Angela went off on yet another paranormal tangent and began to do something that seemed

to be a blend of reiki, spiritual healing and psychic surgery, minus the paraphernalia. She mimicked the extraction of diseased organs, then pretending to suture her incisions! Without touching me this time, Angela's hands thrust down towards my stomach and appeared to pluck an invisible object from that area, which she symbolically threw onto the floor. Then she would shake her hands in the air, possibly to 'cleanse' them or even shake off the invisible 'blood'! Then she exaggeratedly imitated the act of stitching up her handiwork. Lastly, she performed crystal healing, laying several chunks of rose quartz crystal upon various 'chakras' and left them there for a few minutes, mumbling a mantra this time, rather than the garbled 'speaking in tongues'.

Angela concluded this bizarre ceremony in an appropriate fashion, by producing a set of 'Tibetan bells' which she rang over the various 'chakras' of my body... to cleanse the 'negative energy', of course! She rang them six times although I'd always been told there are seven supposed chakras, so maybe she missed one!

We then had a 'post-surgery' consultation. Throughout the appointment Angela had repeatedly offered me a glass of water, which I kept declining. She now made a strange remark. It had been raining heavily all day and after yet another refusal of water she said, "I suppose it's raining and there's water all around anyway". I construed this as meaning that rain water is a suitable substitute for water imbibed? Angela recommended a high daily intake of water and limited caffeine, claiming she once drank 30 cups of coffee a day!

During the chat, Angela diagnosed that I suffered from an unspecified gynaecological condition: "I feel that you have some problems 'down there' or potential problems but I think it should be okay now". To aid in this healing, I was instructed to lie down, place a rose quartz crystal on my chest each night before bed and call upon my chosen 'guardian angel' to heal me. It came as no surprise that Angela 'diagnosed' a gynaecological

Continued P42 ...

Smoke and Reflections:

A clash between a consumer and the quacks

"...for there is wrath gone out from the Lord: the plague is begun."
Numbers 16:46.



Martin Hadley, Barrister at law and Secretary of Australian Skeptics, puts it to you that you should read this.

The spread of SARS in the rural areas of China could be a grim demonstration of the limitations of 'traditional' medicines. The prospects are worrying for those who live in proximity to animals and without good water or sanitation. Meanwhile all is not well in our sophisticated society. We have made disconcerting discoveries about some of the people we should be able to trust the most — those who make the things that are supposed to keep us healthy. We find facts swept under the carpet, and medicinal ingredients swept up from the floor.

History repeats

As a demonstration that history repeats, or at least rhymes, consider the following story from 1892. The basic facts are known to every law student who has grappled with the principles of offer and acceptance in contract. The detail comes from a superbly researched paper by A W B Simpson "Quackery and Contract Law: The Case of the Carbolic Smoke Ball"¹.

The story begins in the ancient central Asian city of Bokhara. The winter

of 1888-9 was a harsh one and people went short of food. Then came the fast of Ramadan which made many even weaker. In May 1889 a nasty bug took hold and spread rapidly. Many locals died and it also hit the community of Russian ex-pat businessmen and diplomats. Just as SARS is being spread by travelling migrant workers in China today, these Russians returned home, some carrying the disease, some falsely believing they had recovered. The 'Russian Flu' was soon well established in St Petersburg and it was only a matter of time before it reached London.

A few deaths from flu were a part of every London winter but epidemics hit occasionally. The last big one in London had been in 1847-8. As well as killing 1,739 people, it temporarily incapacitated a much greater number. However, deaths from flu had tailed off to a record low by the time the Russian Flu arrived in October 1889.

After a slow start, the Russian Flu killed 558 people in the first quarter of 1890. Orthodox medicine recommended good nursing but could not identify a cure. This did not fetter the entrepreneurs who widely advertised an array of products including Brown's Bronchial Troches, R

1. *Journal of Legal Studies*, 1985.

Higgins's Ozone Papers, Beecham's Cough Pills and the patented Carbolitic Smoke Ball.

The Carbolitic Smoke Ball consisted of a rubber bulb, like the ones they used to squeeze on old car horns. Inside the bulb was powdered carbolic acid. When the ball was squeezed, some of the powder was forced through a fine nozzle, producing a 'smoke'. The user was supposed to squeeze the ball under their nose and inhale the smoke.

It was probably not a very pleasant experience. Even the makers acknowledged that it would cause sneezing but it was less demanding of the user than some of the other cures that the orthodox medicos had on offer, such as Dr Voight's rectal injections of eucalyptus oil.

So far, so good. The ball cost only ten shillings. It should not have done much harm when nothing else was going to work anyway. What got the makers into hot water was a boldly confident newspaper ad:

£100 REWARD

will be paid by the

CARBOLIC SMOKE BALL CO.

*to any person who contracts
the Increasing Epidemic,*

INFLUENZA,

*Colds or any diseases caused
by taking cold,
AFTER HAVING USED the BALL
3 times daily for two weeks
according to the printed
directions supplied with each
Ball.*

A hundred quid! Imagine what that was worth in 1892. But the makers were quietly confident:

*During the last epidemic of
Influenza many thousand
CARBOLIC SMOKE BALLS
were sold as Preventatives
against this Disease, and in no
ascertained case was the disease
contracted by those using the
CARBOLIC SMOKE BALL.*

The next part must have felt like a

good idea at the time. We will see how it turned out to be a bit of a tactical error.

£1000

*is deposited with the
ALLIANCE BANK,
REGENT STREET,*

*showing our sincerity in the
matter.*

We may never know whether that money was really there but the company certainly did not show much sincerity when a Mr Carlill put in a claim concerning his sick wife Louisa. The Smoke Ballers turned out to be spankingly bad sports. They ignored Mr Carlill's letter and a second. After a third letter, they published a Circular to sort things out. It could hardly have been better designed to put a Court off side — to get up a Judge's nostril, further than could their smoke. A fine example of the tendency people have to get themselves into a deeper and deeper mess, with scarcely a thought for the serenity of the lawyers who will have to try to sort it out.

Re reward of £100

*The Carbolitic Smoke Ball
Company, seeing that claims
for the above reward have
been made by persons who
have either not purchased the
smoke ball at all, or else have
failed to use it as directed,
consider it necessary that they
should state the conditions in
which alone such reward
would be paid.*

*They have such confidence in
the efficacy of the carbolic
smoke ball, if used according to
the printed directions supplied
to each person, that they made
the aforesaid offer in entire
good faith, believing it
impossible for the influenza to
be taken during the daily*

*inhalation of the smoke ball as
prescribed. In order to protect
themselves against all
fraudulent claims, the Carbolitic
Smoke Ball Company require
that the smoke ball be
administered, free of charge,
at their office, to those who
have already purchased it.
Intending claimants must
attend three times daily for
three weeks, and inhale the
smoke ball under the directions
of the Smoke Ball Company.*

*These visits will be specially
recorded by the secretary in a
book.*

In my considered opinion, Mr Carlill had every legal entitlement to respond along the lines of: "Secretary's special book, my bollocks..." Instead he patiently pointed out that he could provide proof of purchase and a Doctor's confirmation of the illness. The company described that as "impertinent" so it was off to Court.

The Ball had not been designed to cure influenza. It had been around for a while. Like many other products, it became a cure for the flu when the flu arrived. The product stayed the same but the claims changed to address the new opportunity. Supported by aristocratic testimonials too numerous to mention, the Ball's additional capabilities included:

SNORING Cured in 1 week

SORE EYES Cured in 2 weeks

INFLUENZA Cured in 24 hours

HAY FEVER cured in every case

CROUP Relieved in 5 minutes

WHOOPIING COUGH

Relieved by first application...

Another ad promised to cure 19 ailments, including THROAT DEAFNESS.

You might be thinking that things do not look good for the company in facing Louisa Carlill's claim. Undeterred, its Barristers came up with a

Smoke and Reflections

fine assortment of arguments to be getting along with:

- Mrs Carlill had not relied on the advertisement.
- She had not used the Ball as directed or caught the flu.
- But if she had, the Defendant had not been notified until after she was sick.
- Therefore and because Mrs Carlill had not bought the Ball direct from the company, there could be no contract between them.
- But if there was, it was an illegal gamble.
- Or, it was an insurance contract which did not satisfy certain statutory requirements – no one had paid stamp duty;

• And it was a contract contrary to public policy. (This telegraphs the argument that the £100 was not genuine compensation but was an unenforceable PENALTY!)

At the risk of being hounded out of the Skeptics by a mob wielding broken bottles, may I say that most judicial decisions demonstrate the best of common sense. This case was decided by Sir Henry Hawkins and we know he was a sensible Judge because, as always, he sat with his fox terrier Jack beside him on the bench.

Sir Henry had no difficulty in deciding that the company had made an offer, which Louisa Carlill had accepted by purchasing the Ball and following the instructions. He brushed aside the idea that the ad was obviously too extravagant to be believed.

The company had after all shown £1000 worth of sincerity. It is a succinct ten page judgement, including the facts and arguments for both sides.

The company appealed and lost that too. The reports tell us that the company was represented by the future Prime Minister Asquith, while Mrs Carlill's QC was Charles Dickens' son.

Epilogue

The Carbolic Smoke Ball Company folded a few years after the trials. Jack passed away in 1894 and received an obituary in the *Illustrated London News*. Louisa Carlill died in 1942 aged 96. To the end she was steadfast in having just the one glass of Bordeaux with lunch.



Hair Today ...

... from p39

disorder, given the high percentage of women who do, or will, suffer from such illnesses, it seems to be the alternative therapist's staple diagnosis for their female patients — a sure bet.

Angela told me that I am a 'mes-senger' in life and have:

a wonderful gift of intelligence but you think too much. Try to stop doing and start being. You will be amazed at the difference this makes. If you don't stop doing and start being you can do harm to yourself and cause cancer or other serious problems to your body.

This cryptic advice/warning reminded me of the early 90s New Age catchphrase, "I'd rather be a human being than a human doing" — a war cry of motivational therapists and car bumper stickers. I was also advised to quit smoking, not for the myriad of valid health reasons, but because this "creates holes in the aura". Angela also offered a tip for weight loss that I will now share, for those wanting to shed a few kilos. Find a photograph of yourself at a size you were happy with and ask to be "let back into that body". Angela claims she went from a

size 16 to a size 8 in under a year on this mental diet! In summing up, Angela said that "many illnesses are from a past life" and that may be the source of any given condition!

As I was leaving Angela said that I might experience some residual healing manifested as a tingling sensation. I could also expect some inexplicable body pain in various areas, "don't worry, it will go". The session ended with that and Angela insisted on a "goodbye hug".

The wash-up

The appointment lasted for just over an hour. Angela charges \$50 an hour for her services, about what a hairdresser typically charges, without the included cost of hair products! She could not provide me with an official receipt but instead wrote down the service and charge on her business card, which she signed. For \$50 the client is better off having a hairdressing service which would provide obvious results! However, I cannot discount the sincere nature of Angela and her caring, sympathetic demeanour, which would undoubtedly be of benefit to a patient who sought no more than that, either

consciously or unconsciously. Beyond reassurance and compassion I doubt that her healing services can be of any real benefit to the sick. Angela did not have any qualifications other than the usual apprenticeship of a hairdresser.

Angela's 'Healing Hair' practice was unique, although at the same time, clichéd. Her beliefs encompassed the most commercial tenets of various faiths, ancient and modern, as she would often state, "I am a god" and "we are all gods". Her therapy was a hodgepodge of reiki, crystal healing, spiritual healing, psychic surgery, chakra balancing, past lives therapy and glossolalia, with assorted other techniques added for good measure. Her speech was peppered with New Age drivel, pop psychology and buzz words. I can imagine she attracts several kinds of patients, the desperate, the curious and those in need of hair styling!

A trip to the hairdresser will never be the same again. Perhaps, next time I visit my doctor, I will ask for a quick shampoo and blow wave!



Nigerian Letters: Don't get taken

Most of us have received so-called Nigerian Letters, but here is a letter from Nigeria with a difference. We commend the writer for his courage.

I have received quite a number of mails from friends and colleagues around the world about the so-called Nigerian Letters. These mails I understand are from Nigerians and they require recipients to send their bank accounts to help transfer huge sums of money, often in millions of dollars. Unfortunately some individuals have been reported to have fallen victims, and have ended up losing their life savings to these scammers. Some have even been murdered in the course of trying to recover their money. In Nigeria these letters are not known — only those who enrich themselves through them are. There are other smart ways fraudsters prey on people's trust and make them part with their money or wealth.

Recently I have been receiving mails — through my hotmail address posted on the internet — which I suspect must be those Nigerian Letters. Right now I have around ten of them in my mail box and I receive at least one on every two days

This one was supposedly sent from Ivory Coast. *[The text of the letters, which will be familiar to most readers, has been edited to retain only certain details. Ed]*



Leo Igwe is head of the Nigerian Skeptics Society. He can be contacted at nskepticleo@yahoo.com

*From: Mr David Tonah (Jn)
Abidjan - Republic of Cote d' Ivoire
My Dear;
With utmost regards I crave your understanding of this proposal, I am David TONAH the son of late Dr David G. TONAH the former Financial Controller of Cote d'Ivoire Telecommunication ... your assistance for the Telegraphic Transfer of sixteen million United States Dollars to your account ... what I require ... your real name and your private phone and fax numbers ... On the successful conclusion of this transaction we will offer you 7% of the total amount...*

Here is another one supposedly sent from Angola.

*MRS CHRISTAINA KONE & SON
DEAR ,
MY NAME IS MRS CHRISTIANA KONE A WIFE OF THE COL COKER KONE ... A VERY CONFIDENTIAL DEAL ... USD 18 MILLION IN CASH ... PROCEED OF DIAMOND AND GOLD SALES IN THE BLACK MARKET ... I WANT YOU TO ASSIST US RELOCATE FROM AFRICA. ... FORWARD YOUR ACCOUNT DETAILS ... WE ARE PREPARED TO SHARE 15 / 85 WITH YOU*

One thing I noticed is that all the mails have attractive and appealing subjects like *PLEASE CALL ME, A CRY FOR HELP, PLEASE TREAT VERY URGENTLY*, etc. Again the mails are purportedly sent from different African countries — Benin, Ghana, Ivory Coast, Sierra Leone Angola, etc and they are often about the transfer of money of someone killed in an armed conflict or accident. Most importantly they promise individuals who can help 20-30% of the money.

Some time ago I got this mail from one "George Mbuah". Mind you this is a fake name (everything about these scammers is fake except their fraud) The mail goes this way:

*Dear;Sir,
I am Mr GEORGE MBUAH, the MANAGER in charge of auditing and accounting section of Continental Trust Bank Benin Cotonou, Benin Republic ... my department came across a very huge sum of money belonging to a deceased person ... The said amount is US \$25.2M. I want you to collaborate with me to put a claim on this money as the next of kin of the deceased account holder, Mr Duckson Fritz. ... indicate your interest and willingness to assist us in this risk free and highly confidential transaction. On your reply, we shall discuss the sharing ratio for each party to this transaction.*

I decided to reply Mr Mbuah indicating interest in this deal. He wrote back requesting for my fax number. Unfortunately I don't have any number. And again that will also let me out. From my fax number Mr Mbuah could discover where I was operating from [I'm told scammers target foreigners or individuals living overseas, including Nigerians]. I decided to discontinue the correspondence, but Mr Mbuah would not allow me rest. Every day he was sending me urgent mails to remind me about the fax number. After a while, I thought of writing something that could still let me know more of what goes on in the crooked minds of scammers. So I wrote Mr Mbuah to assure me that this was a genuine business. But guess what? My mail bounced back. Why? I can't explain at this date.

I understand efforts are under way locally and internationally to track down these conmen and bring them to justice. But for now what I have to say is this: if you happen to receive any mail similar to the ones published above, please do not get taken. Kindly ignore it, delete it or



A Man For All Ages Pt2

More thoughts from one of our most distinguished scientists

Concluding an interview with Australian Museum Director, Mike Archer, conducted by Geoff and Richard Saunders. The first part of this interview appeared in Vol 23, No 1.

Creationism

Geoff. Speaking of creationism, would you go head-to-head with another creationist in a public debate?

Mike: I do it regularly. I do it every day at the University of NSW, as I interact with first-year biology students. I have a whole lecture on scepticism, where I talk about the concept of theistic evolution — why couldn't evolution be God's method of creation? That just brings them out from the woodwork. Every year I survey the first-year biology students and somewhere between 12 and 15% are creationists — fundamentalist creationists. So now that we have the miracle of email, those people are immediately on the blower to me, saying, "But what about this, what about that?" So I spend a lot of time still doing 'head-to-heads' with creationists. I must say I tire of it a bit because it's just recycling the same old arguments — like 'the second law of thermodynamics prohibiting evolution'. You do get tired of explaining why these arguments are spurious, but I'll never stop doing that, I guess.

G: There was recent research suggesting the possibility that the speed of light might be slowing, or has slowed. This must have given creationists a shot in the arm as the 'diminishing speed of light' has been one of their hobby-horses.

M: And it's my *alma mater*, the UNSW, putting this out. I'm not going to be critical of the research — it's fantastic — but isn't it ironic that we used to make fun of the creationists and their view that this would explain how it really is a young universe appearing to look old. We said: "Well if the speed of light has slowed down by 200 million times since the creation of the Universe 10,000 years ago, then $e = mc^2$ and that means a simple little bonfire in the Garden of Eden is equivalent to a 9 megaton blast, because you know you can't change one of these constants without impacting on the other". And yet here are the physicists telling us (and I haven't heard the scale of the slowdown they're talking about) that maybe there is something to the slowing down of the speed of light.

G: No doubt nothing on a scale compatible with the arguments of the creationists.

(Mike interjects: Not the 10,000 year-old world.)

G: But the very fact that it is being



Richard (video producer and Skeptics President) and Geoff (writer) Saunders, bothers-in-arms in the battle for reason.

talked about will no doubt give them a boost.

M: When I saw that, I sort of held my head and thought, okay, but this is what distinguishes the skeptic from the creationist. I'm not denying the evidence because it's inconvenient. I want to understand it and I do want to know what the revised scale of the speed of light is. Given stars that are hypothesised to be x-number of light years away, what does that tell us about the size of the universe? I just wanted to see what the consequences of this are, but equally recognise just because somebody has said that they have evidence that this is the case doesn't mean that it necessarily is. This will obviously be tested and I would imagine the jury will be out on this for some time until we've really got a clear picture of what's going on. There were arguments that the electromagnetic forces in the universe were not constant. This came out about two years ago and there has been a lot of discussion about this as well. I think that's exciting. It just means all the neat, tidy worlds that we presumably understood require a great deal more understanding.

G: *Well, it just shows what science is really about, rather than the popular perception that it's all set in stone.*

M: I mean, where are the people leaping out saying: "That's ridiculous! Nobody could ever prove the speed of light has slowed down!" You don't see it. All you see from the scientific community is intense interest in understanding what the implications of this research are, and that's healthy.

G: *Do you see the level of belief in creationism amongst your students being translated into what goes on in the museum with visitors? In particular I'm thinking of school groups, because of the growth of fundamentalist Christian schools. They actually bring their kids here to look at the museum?*

M: To be honest, I don't know. We often hear comments from the floor and see comments in the visitors' book about 'wonderful museum, pity

about the nonsense about evolution'. So you know they're there and you know they're visiting but, on the other hand, long ago this museum made a decision that it was not pulling any punches in this area and, while it was not going to go directly on the attack about creationism, it was not going to go softly about the issue of evolution. It was going to be out there, fully up-front about scientific evidence for the reality of how the natural world has developed, and if that goes up the noses of creationists, so be it.

I mean, in many ways, the wonderful collaboration that we have with the Skeptics and the Chinese dinosaurs is a demonstration of that. I am absolutely delighted about it because in these feathered dinosaurs we have some of the best evidences for evolution we could ask for, brought to Australia by the Skeptics, and I think this is great. Creationism is there, and if my estimates of what's going on with the UNSW biology students is indicative, the number of creationists in the community is unlikely to change. But since 1986 it has pretty well floated around that 12% level of the classes that we've surveyed. Every single year sample is between 300 and 700, so I think we're getting a fairly good measure of the fact that creationism is not on the increase in Australia but seems to be self-inoculating. There seems to be a steady reinfestation of this frontal-lobotomised world view rolling from one generation to the next.

G: *And yet these figures are quite low when you think about the situation in the USA. You obviously have a great deal of knowledge about the situation in the States; why is it that in a country that's so dependent on modern science and all the benefits that flow from it, this sort of belief has become so entrenched?*

M: I'd have to say this is one of the biggest mysteries to me in the whole world. I've heard all the arguments that it's a pluralistic society, there's no state religion, therefore there's all this opportunity for these brain-dead,

simple explanations in the universe to find root in people who think they're open-minded, but they're so open-minded their brain falls out.

I don't have an explanation for why the US is so severely afflicted with this problem. My brother lives in California, where his wife is a school teacher. I discussed this with them and they looked at me in stunned amazement. I mean, they're living in the country that regularly produces polls demonstrating that this is a fair measure of the irrational beliefs in the United States. Mind you the same people who tick off creationism are also there with angels and flying saucers. So there seems to be a lot of minds that are completely open to foggyspeak and mush. But she amazed me because she didn't believe it; it's a measure of the fact that the US is not a uniform place; in California there has never been a problem in recent years about evolution in the schools and they're very proud of the quality of education they've got.

Mind you, in 1963, when I was in California on a National Science Foundation sponsored summer school in archaeology, I was staying at a boarding house in La Hoya. The lady who managed the boarding house looked at me, her eyes popped and she ran her hands about half a metre away from my head and said: "What an aura!" I didn't know what she was on about; all I knew is she scared the hell out of me. I mentioned this to my brother later and he said: "Oh yeah, some people say basically that God picked up the eastern side of the United States and tipped it up and everything loose rolled into California". But now at least in this area, creationism, they seem to be able to laugh at the southern half of the US, which seems to be continually involved in these irrational beliefs. I don't have an answer for this. Other people may, but to me it's a mystery that a country that can produce so many bright and innovative solutions in technology can be so brain-dead.

And can you imagine an American President who didn't profess deep

Interview

religious beliefs? Many of them profess creationist beliefs. Can you imagine that happening in Australia? The laughter would just drown them out. But not in the United States.

Richard: *Do you see an analogy between the Deep South in the States and Australia's Deep North?*

M: This inversion — of course you have Tasmania to stabilise this, but I don't think it's quite so clear-cut here. It's the isolation at the peripheries that seems to lead to this phenomenon. I grew up in Appalachia in the US so I was in the heartland of ultra-conservative beliefs systems. Hence I was inoculated against the United States fairly early. I mean either you roll with it or you find you recoil in horror from it. And that's what happened to me, so by the time I came back to Australia in 1967, I really never wanted to set foot in the US again. Apart from going back to see family and to go to conferences, I avoid the place like the plague. My sister-in-law is convinced the reason I'm concerned about creationism in the US is that I'm rationalising not living there. I think it's actually is a little bit the other way around: religion which has been up my nose since I was about eleven years old, is one of the things that drove me out of the US. Australia was like a breath of fresh air when I came here. They didn't take religion that seriously.

The first time religion really went up my nose severely was in high school. I'd been selected on the American Field Service to go to Germany and I was so excited, you know, from Appalachia to suddenly go to Germany! I was told that I was selected about a week before I should have gotten the formal notification. A priest, who was a friend of mine, said "Oh, come on, I'll take you some place (he could drive) and we'll collect fossils". He knew I was interested in fossils, so while we were out there looking for fossils, he said:

"You know, Mike, on your American Field Service form where it said 'Religion', you put None. You know America will never send anyone overseas to represent it unless they have a religion". I looked at him stunned and said, "Are you telling me I have to put a religion in the box?" And he said, "Well, it's really the only way that you're going to get to Germany", and, being young and stupid, I said "Bugger that!". I left my 'none' in the box and that was it — I never went to Germany.

The power of the religious mafia through the United States started to sink into me at that point. Anyway I was happy to see the end of the U.S.



Skeptics and science broadcaster, Robyn Williams at a Museum function

Palaeontology

G: *On the subject of palaeontology, Australians for a long time have been grossly ignorant about their own prehistory. Ask them about prehistoric animals and they could probably rattle off half a dozen from North America or Europe.*

M: And they eternally confuse archaeology with palaeontology. They have no idea about it. But mostly it's the media that does this.

G: *Do you think this situation is improving?*

M: Oh yes, immeasurably, because among other things it's now in the school curriculum. Teachers long ago realised that palaeontology is an extremely powerful bridge between science and people who haven't had an interest in science. It's an easy way to get somebody excited about

the natural world and how it came into being.

But it's the discovery part that is the fun. It's serendipity, in a sense the inability to make predictions about what you're likely to find. Time and time again, as we've had volunteers on expeditions, you watch faces light up. It's magic. They smack open a rock and there's something that everybody else is getting excited about, and they found it. You know, you made a bond, there's a cemented commitment to the excitement of science that those people will have for the rest of their lives. They made a discovery. I think you're right — I think that the in-

creasing awareness in the community about palaeontology, the history of the continent, being proud about what is uniquely Australian, instead of feeling we have to apologise for it, is something that has been steadily increasing. Certainly since I became aware of these issues in 1967, there has been a major change in Australian public attitudes.

G: *Palaeontology is just such an intrinsically exciting field — it seems to tap right into people's almost childlike imagination. Just look at the queues around the block here when there's any exhibition to do with dinosaurs.*

M: Yes, *Australia's Lost Kingdoms* brought in crowds like mad, and now look at the *Chinese Dinosaurs* exhibition. We were even competing with the Olympics, and that points to another important factor — Australians really are interested in science. They just need an opportunity to get involved in it and in this case, *Chinese Dinosaurs* has had crowds around the block. We have as high attendances now as we've ever had in the museum and we're coming off a low period. It has just skyrocketed. All of a sudden, everybody is feeling optimistic around the place, that the public really is interested in the museum, and the lever was dinosaurs,

was fossils. As you say, it sort of taps into an eternally receptive part of the human mind.

Richard: *There's a strange attraction between children and dinosaurs. I remember what it was like when I was a kid. What could it be? Monsters?*

M: I guess they are monsters that are safe, in the sense that you can stand in front of something that you know could have breathed you up its left nostril. But it won't because there it is as a pile of bones. But here we have this very interesting crossover, bringing it back to the thylacine. People are suddenly thinking, at least within the context of Steven Spielberg, that maybe they're not quite that safe. Is there this possibility that science actually will get us to the point where we can bring these dinosaurs back? That adds a whole new dimension to people's minds, you know, when they're looking at dinosaurs.

As I go into work every day now, my kids grab me by the pants and say, "Dad, are you going in to do the thylacine again today?" And I say, "Yeah, yeah". "But remember, don't bring back T-Rex." And you can see there's this little concern. We've discussed this a lot and I say, "Well, what if we were to bring back a little dinosaur, you know, with chickens' eyes?" And they say, "Oh, yeah, in *Jurassic Park II* there was a whole bunch of them that ate this little girl on the beach."

Genetic research

G: *Do you have anywhere where you draw the line on genetic research? For example, at the moment, we have all the controversy about stem cell research and so forth?*

M: No, I have no qualms about that at all. The notion that these are like little orphans waiting to be adopted is one of the most ridiculous things I've ever heard. It just flies in the face of everything you understand about a stem cell. They are not people. Again it's America largely inflicting a value system on us about this.

I think it's right to think about these issues. But at the end of the

day, as Christopher Reeve has said, if anyone wants to argue against the potential value of using stem cells to deal with seriously debilitating disease, come and spend a year in this chair and then talk to me about it. We need to understand that stem cells are not human beings, there are no nerve cells, there is nothing that could conceivably be a human being in that little ball of cells. And yet with the potential of that ball of cells to improve the quality of life for people who are suffering unnecessarily and inexplicably, you'd have to be a really evil person to stand in the way of that research.

It's a complicated area, I respect other peoples' views about it, I respect the right of religious people who have ethical qualms about these issues, but I think that when you realise that the size of the embryo being talked about is smaller than a fullstop at the end of a sentence on a page, the notion that this is a human being is really an absurdity. It shouldn't be something that would stop this tissue, which is otherwise going to be destroyed anyway, from being put to these very positive uses that could have a major impact on reducing, and even conceivably down the road, eliminating awful degenerative diseases that cripple lives and make people miserable.

G: *What's your feeling about genetically modified food products?*

M: I tend to be a supporter of the right to conduct experiments that could have enormous beneficial impact. But the cautionary principle is relevant here. You need to first demonstrate that there was a reasonable prospect of nothing going wrong, of the gene jumping into an organism you didn't want it to jump into. But there's a lot of scaremongering that has been going on in the world about the so-called failures of genetically modified products, like maize in Mexico or potatoes that were supposed to produce tumours in rats that were being fed the genetically modified potatoes. Both of these studies widely cited by critics of GM foods have been shown to be based

on shonky science and unsupported and unrepeatable.

There is no evidence that there has been a problem with these genetically modified foods, or that they have produced these horrors. There is evidence to the contrary; that they have had extremely positive outcomes in countries that have otherwise had difficulty in growing crops and feeding their people. China was a classic case, where GM cotton has enabled something like 30% more Chinese farmers to actually grow subsistence crops that keep them alive. So I think we have to look at it in a global sense and say human populations are not going to suddenly plummet. Feeding people is going to become an ever-greater problem. To turn our back on GM foods for hypothetical reasons about what *might* go wrong when nothing has been shown to have gone wrong, I think is an error. I think we need to see clear evidence that there are problems before we need to worry about this. And at the moment, those problems haven't been demonstrated. When they've been put to the test, they've been found to be spurious.

R: *Finally, Mike, you were Skeptic of the Year a couple of years back*

M: I'm very proud of that, I want to tell you. I keep the picture in my room.

R: *Now, this year you have been nominated for the Bent Spoon Award. What are your thoughts about that?*

M: Oh well, life has the highs and low, ups and downs. I'd probably feel less proud of winning the Bent Spoon Award than I would the Skeptic of the Year but, hey, life's interesting*.

Geoff: *You would have been a skeptic and an antiskeptic.*

Mike: Exactly. A bit like having the Bible and the antidote on the same shelf.

Note:

* The nomination of Mike for the Bent Spoon was unsuccessful.



A Sea of Words

Tales from the historical and linguistic fringes.



Mark Newbrook, regular columnist and linguist, has returned to his native northern England, where he will investigate the origins and causes of the trouble at t' mill.

More of Wales – and Egypt!

In articles in *Fortean Times* 167 and 168, Simon Young analyses those stories about Prince Madoc and his Welshmen in the American Mid-West (the C12 version). He is critical (arguably over-critical) of some mainstream objections but — in a skeptical vein which has become increasingly common in FT — he is even more critical of the fringeys themselves. One of his main themes is the weakness of their linguistic arguments (which are of the usual kind: superficial similarities between a few pairs of Welsh and Mandan words with similar meanings). And, although Young is not a professional linguist, he is spot on here! Maybe our efforts to get our message through to the wider world are at last bearing fruit. Congrats to him, in any case!

On the other hand, David Barrett, reviewing the Sabbahs' book on Hebrew and Egyptian, Akhenaten as Abraham, etc. in *FT* 165, does not get to grips with the linguistic issues — though he acknowledges that they are important to the overall argument. If he does not know linguistics, this may be for the best; but in that case — given the importance of these matters — he should perhaps

not endorse the Sabbahs' views as strongly as he does. (See also below on this kind of approach.)

And Robert Schoch, who made a splash by endorsing very early dates for the Sphinx, has now published a diffusionist book on pyramids around the world — with the usual amateur approach to historical linguistic evidence once again! He cites only those near-fringe linguists who support him (Foster, Manansala, Ruhlen, etc.), and does not tell his readers that they are a tiny minority. In places he is just wildly wrong, for instance in deriving Latin words from 'Hindu' (not a language at all)! And in any event his comments are too perfunctory to carry any weight. Compare Wells (see below).

A dictionary for those who can't (yet) spell

Joe Thornton, who had struggled for many years to become literate, produced a dictionary of common English words, listed under spellings which he believed would be those which would most naturally occur to others with similar problems. Opposite, one finds the standard spellings. The specifics were based on wide experience and the entries were reportedly tested by means of an

informal survey of a range of suitable people. The enterprise deserves much praise; but one or two queries may be permitted.

Firstly: Thornton's scheme assumes that phonemic spelling is natural. This is a common (and not unnatural) assumption of reformers, as noted in earlier comment in this column, but it is by no means certain that it is correct. On the other hand, phonemic spelling might indeed be more natural for those with a limited learned vocabulary, as would be the case for many such speakers; they would be less aware, or at least less consciously aware, of alternations such as divine-divinity or impugn-pugnacious which are supported by more abstract spellings. Even then, however, there are inconsistencies: the same phoneme (even the same allophone, though this should not matter for non-linguists) is spelt in different ways in different words, and sometimes alternatives are given. This may reflect the results of the survey (only those variants which happened to be offered are listed); but with professional help generalisation would have been possible and helpful.

Secondly, an accent of a South-East England/Australasian type is very clearly assumed. A Liverpoolian with spelling problems would not readily think of looking for grasp under grahsp. Presumably the survey had its own geographical bias. The book is a few years old, but maybe with suitable help a new edition could be produced which would address these issues.

How do you sign Aukedate?

I came upon an old (1998) report in *Fortean Times* about two tribes in Irian Jaya called the Aukedate and the Vahudate who supposedly do not speak but instead use sign languages. Some scholars believe that in the remote past, before speech developed, signing was the only mode for language; but this would be altogether unique among modern humans (except for deaf sub-groups, of course). There was a web-based discussion of the linguistic issues

which petered out when no new information emerged.

Of course, genuinely 'new' tribal groups are still located in areas such as Irian Jaya, and some of them do display cultural traits which are — or have become — unusual in the world at large. But it is possible that this particular story was simply a hoax or a mistake (one is reminded of the Tasaday). And the question must be asked: if these people only sign, how do we come by these oral names for their tribes? Naturally, sign languages do not normally encode phonology or phonetics, except sometimes as a secondary phenomenon, for non-deaf names etc. On the other hand, these could be the names in the oral language of a neighbouring group, rather like Olmec (we do not know what the Olmec called themselves, nor indeed anything else specific about their language).

Another suggestion on the web was that these groups did have oral languages but also made unusually extensive use of signing. I will see if I can dig out any more; but the trail seems to have gone cold.

Genes and languages

In this 'Post-Cavalli-Sforza Period', it has become fashionable to propose close parallels between the evolutionary cladistics of human genetics on the one hand and language families on the other. Well, these do often go hand in hand, not surprisingly; and this means that one can seek to clarify obscurities in historical linguistics through ancient genetic information, which is more readily accessed. This applies especially to the pre-literate period, where there are no linguistic details at all apart from reconstructed ancestor-forms (inevitably uncertain). But there are many cases like those of the Hungarians and the African Americans, where genetically identifiable groups have abandoned their languages, at least in some areas. Although the latest discoveries suggest that there are fewer such cases than might be imagined, it is still clear (as I have remarked before) that it is danger-

ous to press arguments of this kind too far in filling in gaps in the linguistic record.

A related danger, for non-linguists, is that of accepting the stance of extreme 'lumpers' such as Merritt Ruhlen as if it were part of the linguistic mainstream. Ruhlen is the most 'fringe' of all formally qualified historical linguists, and not even the Nostraticists agree with his coarse-grained methods.

In combination, these two errors have vitiated much work, notably an often-cited passage in Spencer Wells' recent *Journey Of Man* in which he blithely treats Dene (North America) as demonstrably related to Sino-Tibetan and as probably related to Caucasian (Caucasus). The case for the genetic links may well be good, but (like Schoch above) Wells can obtain no real support from linguistics here. He is not uncritical of Ruhlen's broader claims but has perhaps failed to appreciate the weak grounding of many of this maverick scholar's more specific ideas.

How language began...

Linguists continue to work on this complex and difficult topic; but every now and again an amateur has a crack at it, usually coming up with a simplistic and/or off-target proposal. Now a correspondent in *Fortean Times* 170 has suggested imitation of musical hallucinations (a recognised phenomenon which is coming to be understood). Well, as I told them, this could perhaps be the origin of the phonetics of speech; but it is difficult to see how such hallucinations would relate to grammatical and other more abstract patterns in language. Speech, and even more so phonetics alone, cannot be equated with language.

...and how it's acquired

In *Skeptical Inquirer* 27:2 (pp 37-41) and in his books such as the recent *The Blank Slate*, the well known psychologist and post-Chomskyan linguist Steven Pinker argues again that the latest scientific evidence supports a return to what he sees as a more balanced view of the signifi-

cance of 'nature' (genetics) and 'nurture' (environment) in the varied development of individual human capabilities and personalities. He has been accused of over-emphasising 'nature', but this may in part relate to something of an over-emphasis on 'nurture' in older analyses and in some other recent traditions of thought less informed by up-to-date scientific information.

Much of what Pinker says seems altogether reasonable, and in the last few years his line has been pushed in various general books and sections of books dealing with issues relating to the nature of humanity. However, it is important to bear in mind that many important aspects of this issue, as manifested in the various relevant disciplines, remain subject to debate (as I am sure Pinker would cheerfully admit). For instance, by no means all linguists accept that the language faculty is as 'hard-wired' as has widely been proposed in the Chomskyan world. Geoffrey Sampson's is perhaps the best known of a set of very different alternative interpretations of the linguistic evidence.

And another thing...

Flenley & Bahn, in their new book on Easter Island, imply that criticisms of the Fischer 'decipherment' of the *rongorongo* boards (for instance, those of Jacques Guy?) are motivated by undue conservatism rather than by reasonable perception of genuine problems, and that the documents can now be read at least in part. And the blurb on the book's inside jacket flap simply reports that *rongorongo* is deciphered! Not so! Scholars moving outside their own fields should be more reserved and should make it clear that they are attending to mainstream specialist expertise. And, if they do reject the orthodox position, or peer criticism of novel proposals, they must explain why. (Compare Barrett on the Sabbahs, as discussed above.)

Further exchanges

Quadrant never printed my letter rebutting Gillin as promised, nor

told me why not. And *Phonosemantics* went quiet — after some further arguments from one site-visitor supporting probabilistic treatment of accent differences. The specific method proposed would not be satisfactory as it involves the often false assumption that there will be one dominant phonemic and phonetic form in each key word, with other forms constituting a small peripheral minority. My offer to assist with dialectological information was ignored.

Some more reversing!

David Oates sent Barry Williams a lengthy paper offered as a rather belated rejoinder to the 1997 article in which Jane Curtain and I rehearsed some of the many objections to Oates' theory of Reverse Speech (RS). This paper was prepared by a RS training class in New South Wales; the main author is Chris Gabriel. It includes defence of the theory of RS, attacks on our criticisms, a report of a near-replication of our 1997 experiment carried out by the class, and summaries of earlier experiments. The RS practitioners sought publication in these pages, but the paper is obviously too long. In addition, it does not materially strengthen Oates' case. I will copy it on request to any interested readers; but here I list its main points and my further rejoinders, approved by Jane. (We also note that RS advocates continue to attribute our paper to Monash University itself. We have to suspect that they simply do not understand the notion of an academic address.)

1) The first part of the rejoinder consists mostly of repetitions of earlier pro-RS claims, with a few new claims added. As before, these claims are generally either speculative or presented without adequate justification. As far as this material is concerned, the theory of RS must still be judged implausible and not adequately supported by the empirical evidence. Some of the claims are indeed so implausible that they must involve sheer error, in some cases simply wrong transcriptions by non-

phoneticians (eg, the claim that for one speaker violet light consistently reverses to I am the Lord; we say that this is phonetically impossible and we challenge Gabriel to send us the relevant tapes). It is difficult to know what to make of Gabriel's claim that animals produce reversals, or the claim of his associate Wilde to the effect that unconscious thought processes may operate backwards in time. In some other cases which might conceivably be more interesting, eg, that of a claim regarding electroencephalogram tests which allegedly offer some support to the theory of RS, no references to the relevant reports are provided.

2) Gabriel refers to eight or more 'tonalities' which yield different reversals for the same sequence, some of which can be heard by some listeners and others by others. This (a) involves obscure/imprecise terminology (we do not know what Gabriel — who, like most RS practitioners we have encountered, clearly does not know phonetics — means by tonality) and (b) reduces the testability of the relevant claims (if this is true, one listener cannot reliably confirm or disconfirm another's transcription). In a similar vein, Gabriel naïvely suggests that lip-reading tests could prove RS genuine, but here he again betrays his unfamiliarity with phonetics. And some of his arguments are very weak, eg, where he suggests that 'mirror image' reversals prove that RS cannot depend solely on forward speech. The only 'genuine' — albeit non-significant — near-identical forward-reverse pairs involve 'phonological palindromes' such as *dad*, which are of course unremarkable. It is phonetically impossible for any other word to be its own reversal.

3) After all this, Gabriel turns to criticism of our 1997 article. We stand by the view that our own experimental results — while not fully explained — offer the theory of RS no support. However, as we noted and as we observe again below, there are other possible experiments which might be more revealing. We might consider conducting these

ourselves if we thought that the case for RS was stronger. As things are, however, we consider that the main onus to perform such experiments lies with RS advocates.

4) Gabriel's accusation of bias on our part (see also below) is ironic, given that he states that his own study was aimed at supporting the theory of RS. One should not set out to support one's prior beliefs, but rather to subject them to stern scrutiny and if possible to disconfirm them. We ourselves (as we have always made clear) did not expect to find that the theory of RS was true (how could we?); but our only bias is in favour of science and rationality. We tried to free our study of any other bias, and we believe that we succeeded. We certainly did not give our subjects the impression that we expected or hoped to obtain any specific type of result. And we note that Gabriel has not been able to cite any evidence of the effect of bias on our experiment.

5) Gabriel seems to think that linguists are naïve: eg, that we tend to assume a much higher degree of uniformity across languages and varieties of languages than we in fact do, and in particular that we tend to assume that all languages are similar to (known varieties of) English. Naturally, no linguist would take such views or adopt methods based thereon, and we did not. But there are certain limits of linguistic variation; linguistic structures are not so chaotic that 'anything goes if it suits'. And our criticisms of the theory of RS imply no such naïve stances as Gabriel suggests. Gabriel also suggests (repeatedly) that we might base our predictions and claims on written forms rather than on spoken forms, even in a context such as this which involves spoken language. Again, no linguist would adopt such naïve methods. Like many of his other comments, this comment suggests that (again like most RS advocates) Gabriel is very largely unfamiliar with the way in which linguistics is conducted.

6) Gabriel cites in his support the psychological theories of Jung. While of great interest and in no way 'fringe', these theories are nevertheless of uncertain validity, and the degree to which they might genuinely be specifically relevant to RS is unclear.

**... linguistic
structures are
not so chaotic
that 'anything
goes if it suits'.**

But, much more seriously, Gabriel cites many writers who are clearly 'fringe' to varying degrees. He places much emphasis upon Neuro-Linguistic Programming; but this approach, to the extent that its claims are novel, is not accepted as valid by linguists, nor by most psychologists. The linguistic and psycholinguistic claims of NLP advocates are at the very least much exaggerated. The 'New Age' material invoked in support of RS is even more dubious. RS advocates' qualifications in these areas are not generally recognised by psychologists or linguists, or regarded as relevant to the serious study of linguistic or psycholinguistic issues. In addition, there are various skills and bodies of knowledge, both linguistic and psychological, which anyone working in this area definitely ought to have but which RS practitioners apparently lack; one very obvious example is the set of skills and knowledge which is conferred by a good training in phonetics. We therefore stand by our comment that RS practitioners gen-

erally lack the other expertise which we would consider relevant.

7) We realise that if RS were genuine some training might well be needed in order for it to be understood or even heard. But we have found that Oates' own comments on this are inconsistent. In addition, we note that training in mainstream phonetics is useful because it is clear what is present, whereas with RS this is not so: at best, it is not clear that any genuine linguistic items are present.

8) We also grant that RS analysts may 'find' RS sequences without knowledge of the corresponding forward speech. This increases the independence (and possibly the objectivity) of their claims about RS and thus makes the claims more interesting. It would be even more interesting if several RS analysts agreed on their analyses in conditions where genuinely independence obtained (this is one of the possible further experiments to which we refer above). But, as one of Gabriel's own associates points out, even this would not itself show that the sequences 'found' really are objectively present. Indeed, it is clear to us as phoneticians that the alleged sequences in most of the examples which we have encountered are not in fact present.

In the few cases where the reversals are phonetically present, this involves only the chance existence of 'phonological palindromes' or exact 'mirror-image' sequences which would apply regardless of the identity of the speaker (as long as the accents involved were similar; see below) and regardless of the truth or falsehood of the forward messages (ie, 'constants'). However, it is not at all implausible to suppose that RS analysts — who are after all striving to hear reversals — might agree, to some extent at least, in 'finding' those sequences which most closely resemble the actual reversed sequences heard, even though these do not actually display the phonological sequences implied. Gabriel's suggestion that they would not 'find' any

reversals with clear boundaries unless these were genuine is naïve.

9) We stand by our view that the same forward sequences as spoken by different people can display only minor differences relating to paralinguistic features such as sighs and differences of voice-quality, accent and such. It can easily be shown by transcription that this is the case. All testable claims which we have seen involving large differences between RS sequences based on the same forward sequence are grounded in faulty transcription — and our own experimentation in this respect confirms our position. (It is true that a minor difference in forward speech may yield a slightly more salient difference in RS, but this cannot be a major effect.)

10) Gabriel attacks our criticisms of Oates' non-disclosure of figures and analyses for his own experiments, but our comments were based on all the material which we could obtain. What we saw was not sufficiently clear or detailed to answer our queries. Again, in discussing syllable-counts, we isolated the exact forward sequences allegedly responsible for each reversal to the extent that we could, given that Oates' discussion is itself frequently unclear. Any errors on our part relate to Oates' own wording. Oates would not respond to our direct questions on these matters.

11) We think that we were very probably right in suggesting that the fact that the RS sequences in our own study were not surrounded by gibberish would favour the hearing of the reversal — especially given that most alleged reversals do not in fact stand out from the gibberish as claimed. But we agree that this point could be tested.

12) Contrary to what Gabriel suggests, there are typically no clear boundaries or gaps (even 'tiny' gaps) between words in forward speech at normal speed. It can easily be shown that those who do not know the language in question cannot identify any such divisions, except in very slow deliberate speech. In such tests,

it is necessary to use listeners who do not know the language in question, because those who do know it know where the divisions are — or, in the rare case of a sequence of unfamiliar words, unconsciously know the phonological patterns marking the divisions — and may therefore wrongly imagine that they can hear gaps, etc.

Gabriel is missing the point when he criticises our reference to non-speakers, and indeed he himself appears to be falling prey to this very error. Given his lack of background in linguistics, he should not assume that he has any reliable knowledge of this kind about language. Later Gabriel gives a specific example on another issue involving his criteria for identifying reversals, but this is partly vitiated by error arising from his lack of expertise. And his attempted defence of an imprecise notion crucial to another criterion does not answer our objection.

13) Gabriel describes as ridiculous our comment that it is hard to see how the vastly complex linguistic and psychological systems needed for the production of RS could have gone unnoticed by scholars in the relevant fields. He draws a strained analogy with theories of the shape of Earth. But our point stands. There is (a) no good evidence that RS exists. There is no theory that suggests (b) how it can exist, or (c) why it should exist. If it existed, it would involve a large, centrally-located system, not otherwise required by the relevant processes, which would almost certainly involve one at least out of (a-c). Such a system would have become familiar by now.

14) Gabriel's criticisms of our 1997 experiment are mostly ill founded, and there are also various problems with his account of his new experiment and with the conduct of the experiment itself. Most crucially, at least four and arguably more of Gabriel's 'bogus' sequences are implausible or worse as expressions in English, and were thus unlikely to be selected. I will provide further

details on request. Little confidence can be had in the results of Gabriel's experiment, as he (over-)interprets them.

15) The paper also refers to the results of earlier 'blind tests', but these are vitiated by his poor methodology, and their results cannot be taken seriously. The impressive-looking statistical conclusions drawn by the associate consulted here simply do not apply, because the experimental materials are so slanted as to almost guarantee the favoured outcomes. The phonological sequences in the 'bogus' RS sequences are often very different indeed from those in the 'correct' sequence (ie, the sequence heard by the RS analyst), with different vowels, stress patterns and even syllable-counts. In addition some of the 'bogus' sequences are again implausible or worse as expressions in English, and are thus even less likely to be selected.

16) The associate consulted here proposes another of the various possible experiments which would be more revealing than any test conducted so far (see above): an experiment aimed at determining whether or not any genuinely new and accurate information (of a specific nature) ever comes to be known solely from examination of RS sequences. Indeed, we too suggest that RS advocates conduct such an experiment, with all suitable rigour. Skeptical organisations might be able to offer some advice here.

The theory of RS remains implausible and inadequately supported. Gabriel has not here strengthened the case for RS as a genuine phenomenon. Unless he can produce better evidence (eg, along the lines suggested above), his claims will neither warrant nor receive serious scholarly attention. If Oates, Gabriel or anyone else still believes in RS, they should address the problems which we have identified.



The Doctor is In

This issue contains many items about health issues and the continuing debate about whether there is anything of value in so-called alternative medicine.

We are delighted to offer the following stories from two medical practitioners, recounting their experiences in general practice from different eras, to help put the issues in perspective.

Bush Doctoring

Following Glenn Cardwell's article 'Water, Water Everywhere' (23:1), might I recount some personal experiences?

In the 1950s I was a medical practitioner in Monto in the Upper Burnett region of Queensland, when we had the highest birth rate per capita in Australia (until displaced by the public servants of Canberra). The district was a primary producing area having coal, gold and copper mines, five sawmills, and extensive forestry plantations in the surrounding mountains. In all, the district had a population in the vicinity of 5,000.

The farmers, graziers and timber-getters used to worry me as they drank little water even in summer and a considerable number developed renal colic. In summer I always woke at dawn, got up, put the kettle on to boil and went out to the backyard dunny (our town was not sewered). Often I would become aware of a number of cars outside my surgery entrance and men walking up and down the street grunting with pain. I would lean over the fence and ask (as if I didn't know the answer) 'What's the matter?' 'We've got the colic!' was the reply.

Asked why they hadn't rung my doorbell they answered that they

were prepared to tolerate the pain a bit longer, to let me get a little more sleep (Their wives had a baby every year to add to my sleeplessness — no pill in that era).

They usually drank only a cup of tea with their breakfast, a cup or two with lunch (if they were home) and a similar amount with their evening meal. They ate mostly salted corned beef smothered in tomato or Worcestershire sauce, and drank little or no water, as they firmly believed drinking water gave you cramps. These men were working in the heat, ploughing, mustering or swinging an axe. They usually sucked a pebble to prevent their mouth becoming dry. In that heat their sweat-loss must have been at least 5 litres or more in summer, and I knew, even in my sedentary occupation, I needed to drink at least 10 glasses of water per day to produce a reasonable amount of urine. They drank mostly bore or well water with a high salt content, if they drank any water at all. Our town supply was provided by a sub-artesian bore whose salt content would destroy a hot water system in one year.

It was even more serious when they went to the coast on holidays where they would drink copious quantities of ale, eat oysters, prawns, fish and crabs and wonder why they suddenly developed kidney stones.

I had three gout sufferers in my district, two stock and station agents and a garage proprietor. I could never persuade them to take prophylactic medication and so they frequently had attacks of renal colic or gout. One of the men had a fishing shack at Agnes Water. Often, after a cattle sale at Miriam Vale, he would go to Agnes Water for a few days of fishing or crabbing. On one occasion, when we were over for the weekend, the owner of the property came and

told me he was concerned as he knew this man had arrived. His car was parked outside his shack, but no one had seen him for days and he was afraid that he might be dead. I went down to the shack, in an isolated spot, and called. A weak voice answered so I opened the door, went in and found him lying on a bed with red, swollen gouty joints in feet, hands and elbows. He said he had been in agony for days, unable to even walk to get help and nobody had come near him. I asked if he had any medication for gout? No, of course not; to ease the pain he had been drinking OP rum and all he had to eat was mud crab!

If you can believe any person could be more stupid, it would have been my garage proprietor. This was in the days when if you bought a new car it would be ferried from Brisbane to our town by a driver who was paid £10 (perhaps), the car was then cleaned up, serviced and delivered to the purchaser.

Every time the garage proprietor made the trip to Brisbane, after dealing with his business transactions, he would lunch at a seafood restaurant, where he drank sparkling burgundy, and stay the night at the Bellevue Hotel where he again dined on oysters, crabs, prawns and more sparkling burgundy.

He would then lead the convoy of new cars out of Brisbane at about 4am, but he never made it back to Monto before he had an attack of either gout or renal colic. On most occasions I would have to drive half-way to our neighbouring town to inject sufficient morphia for his family to lift him out of that new car that he was driving home.

On another occasion at dawn my bedside telephone rang. The switch girls at the exchange always knew when I had a busy night, and if I

had, the phone would just about leap off the bedside table with a long blast, just to wake me, otherwise I might just go back to sleep again.

This call was regarded as urgent as a mother from the Moonford district telephoned to say that her child was peeing blood. She was very positive about it as she was an 'Ex-Nurse'. I instructed her to bring the child and a sample of urine to see me as soon as it was convenient, usually mid morning after the milking. About five minutes later another mother (from the same district) phoned, and almost immediately yet another, and all the children were peeing blood. I became very agitated and wondered what disaster was causing this epidemic. Fortunately these calls were followed by a further two calls from other agitated mothers, one whose child was peeing green, and the next caller's child blue, urine.

It was fortunate that I didn't burst out laughing as I recalled the various initiation activities that freshers were subjected to at University Colleges. I tactfully asked what event had taken place in the district the previous day and was told the famous Moonford State School Sports. Had the children been given any special treats? 'Oh, yes', was the reply 'Special cordial drinks, ice-blocks of all kinds (and colours) and those new colourful lollies on sticks, known as 'Pick-a-Pops' and 'Chuppa Chups'. The epidemic was solved. I then had to ask the switch-girl on the exchange to connect me to all those mothers so that I could tell them the cause of their children's peculiar urine and not to worry, and not to rush into town to visit the doctor.

These 'tales' are extracts from my forthcoming book *Death of a Slaughterman' and other stories*, by "A doctor from the country", a collection of true 'yarns' most of which are worthy fare for any Skeptic.

Finally, might I suggest that we all eat less salt and sugar and drink more water.

Dr Brian O'Sullivan is a retired GP who now lives in Brisbane.

Homeopathy and the Placebo Response

As a doctor, I have always tried to keep an open mind to new ideas, but not so open that my brains fall out.

In the early 70s, I was the only medical doctor among a crowd of naturopaths to hear Dr Wong introduce acupuncture to Australia. Today I am among the minority of doctors who do not practice it. Instead, I sometimes inject local anaesthetic into painful trigger points, with superior results.

In the late 80s, I attended one of the very first Metagenics seminars on Live Blood Cell Analysis, but quickly realised it was just a gimmick to sell their products. My young GP assistant did take it up, but soon abandoned it when he found it unreliable and open to artefact.

I had earlier explored homeopathy, thinking it might work similar to immunotherapy, but came to realise it was no more than placebo, whereupon it lost any beneficial effect on my patients. The placebo power of homeopathy was brought home to me when a homeopath (and RN) told me she was getting superior results with remedies 'potentised' by an expensive machine. She would put a bottle of lactose pills in one slot, the real stuff or just a special card in another slot, press a button and presto — the instantaneously 'potentised' lactose pills worked just wonderfully. I just had to see inside this magic black box that needed no power source. Sure enough, there were two wires connecting a potentiometer to a switch, a few wires going nowhere and nothing else. When I told her I could manufacture these machines for under \$10, she didn't know what to think! Full marks to Cheryl Freeman for the good work she is doing.

Homeopathy has to be the ultimate placebo therapy. Their consultations are lengthy, every symptom and personal characteristic being explored in depth (does the patient

prefer hot food or cold, spicy or bland, warm weather or cool etc.) as the homeopath searches for a profile to match the reported characteristics of a herb, drug or poison. Then suddenly, bingo — the penny drops, the patient sees a light go on in the practitioner's head and hears the certain pronouncement that they are definitely a nux vomica, a belladonna or whatever.

Since the major factor in the placebo response is the practitioner's faith in their treatment, it is a sure winner. Because the failures seldom return but the successes do, the homeopath's faith in the healing power of the remedy is reinforced. And, unless the patient has lactose intolerance, there are no side effects to the non-ingredients either.

Contrast this with the tentative approach of an orthodox doctor:

I would like you to try this medication to see if it helps. It may make you tired, dry in the mouth, nauseous and constipated. Stop it if it gives you a severe headache.

Hardly likely to engender confidence! Even if the doctor doesn't tell the patient all the possible side effects, the insert in the package is sure to, often putting the patient off even trying the medication. Those who do take it often get the dreaded side effects — even when it is a placebo! Because patients in drug trials are warned of possible side effects, placebo side effects frequently mimic those of the real drug. Although the size, shape and colour of the pills all affect the placebo response, both for good and harm, the dominant factor is the practitioner's faith in it. No wonder we lose out to the charlatans.

Dr Wes Allen is in medical practice at Duranbah, Northern NSW



A Sober Appraisal

***The Oz Files: the Australian UFO story*, Bill Chalker; Duffy and Snelgrove, Sydney 1996. ISBN 1 875989 04 8.**

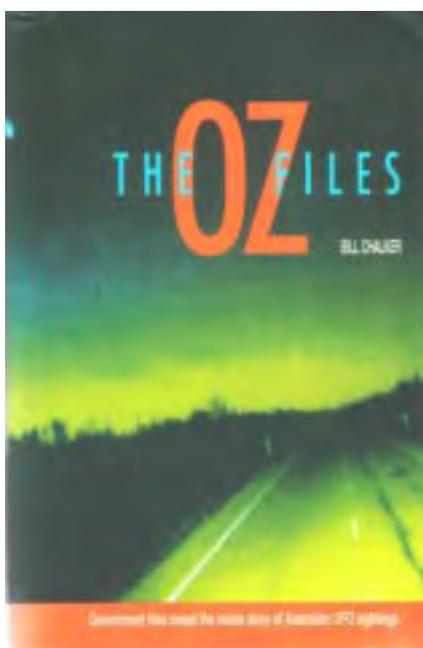
The Oz Files is a brief compendium of Australasian UFO sightings that attempts to examine these phenomena with an 'open mind'. The author, Bill Chalker, has studied UFO accounts since the 1970s and now coordinates an organisation called The UFO Investigation Centre.

Most of the sightings in the book are referenced from local UFO literature, like *Australian UFO Bulletin*, and internal reports from The UFO Information Centre. The narrative follows a chronological progression from aboriginal experiences and early settlement through to the UFO saturated decades of the post-war era.

In the chapter on aboriginal UFO encounters Chalker's open mind is at its most porous. He draws the reader through a succession of aboriginal tales that evoke the familiar pattern of alien visitation, abduction and impregnation before coyly reminding the reader not to uproot this lore from its cultural context and impose on it our fascination with UFOs. After enthusiastically quoting an aboriginal abduction account from Rex Gilroy, Australia's alternative archaeologist and polymath of the improbable, the author politely suggests further corroboration

of his source would be appreciated.

Prior to the emergence of the canonical form of the flying saucer, encounters of flying arks, ghost ships and mysterious dirigibles were documented. Between July and October 1909 there was a series of at least four localised reports of mysterious



airships in Australia and New Zealand, culminating in the Kelso airship encounter (which was later admitted to be a hoax by some of the 'witnesses'). The inspiration for the hoax was a story called "The Perils of the Motherland" in the boys periodical *Chums*. This is an intriguing prelude to later waves of sightings that coalesced with the contemporary themes of popular culture, though Chalker takes little interest in this Zeitgeist effect.

As a chemist, Chalker is comfortable disputing the purported material evidence of UFO encounters, such as Pinkney and Ryzman's discovery of 'alien honeycomb' (later revealed [by Skeptics patron, Dick Smith] to be terrestrial fibreglass). He also has a reasonable knowledge

of meteorological and astronomical explanations. What is absent from the book is an analysis of psychological explanations such as mental illness, hallucinatory experiences and illusory effects.

A case in point is the 1959 Boiano sighting from Papua New Guinea. Thirty-eight witnesses reported seeing a disc with four legs projecting out of its base and several occupants on its deck. This object appeared to be moving through the air at a height of 100 metres. A plausible explanation was that the observers witnessed a false horizon and interpreted a well lit fishing vessel as an aerial craft. Chalker is dissatisfied with this explanation because the principal witness 'was sure that the object he saw was at a 30 degree elevation in the sky'. This kind of circular reasoning suggests a poor understanding of perceptual psychology.

In the early 1980s, Bill Chalker gained access to various RAAF files on UFO investigations. Overall, Chalker eschews government and military conspiracy theories and characterises the RAAF's prevailing attitude as one of overt disinterest which led to investigations being conducted in a cursory manner.

Although Chalker states that his aim is to apply scientific scrutiny to the research of UFO phenomena, there does seem to be a tacit approval of paranormal beliefs throughout the book. While he relegates conspiracy theorists to the fringe of UFO enthusiasts, his occasional references to paranormal explanations are made without a hint of disapproval.

While *The Oz Files* is not a detached and dispassionate work of scientific scholarship, it does provide an informative and referenced account of Australasian UFO reports without the fringe lunacy and conspiracy theories that characterise much of this literature.



Chris Guest labours to distort public hospital statistics for a local health authority. He eagerly awaits a better offer from the alt med industry.



Junior Skeptics

We invite younger, school-age, Skeptics to contribute items, reviews, etc to this new feature.

UFO SCI-file; Alan Watts, Scholastic

I saw a UFO once. We were driving in the country one night when a bright green light raced across the sky quickly, before disappearing. It was an object, it was flying, and I couldn't identify it (maybe because I was only about eight at the time), so it was most definitely a UFO. Dad said something about rocks and ice and green lights, but he couldn't prove that it wasn't a space ship. I've been told that Thomas Jefferson didn't believe in rocks falling from the sky, and he was a smart man.

This book is beautifully laid out, as most books published by Scholastic are. I had some problems with it, though. First of all, on the cover is says "the truth behind Unidentified Flying Objects", and the word "truth" is underlined. That leads the reader to believe that there is some actual truth inside the book. On each page there are little "SCI-facts" (The Macquarie Dictionary defines 'fact' as: what has really happened or is the case, and, something known to have happened). The first "SCI-fact" is "There have been millions of UFO sightings worldwide in the last fifty years". Okay, that still works as a "fact". On the next page, it says "UFOs can do things no plane or even jump-jet could do". Oh, dear. That isn't really the case. The next two pages' "facts" are about the sizes of UFOs and something called "Mother Craft". The sad part is that not only



aren't these things facts, they're not the worst ones you'll find in this book.

The author certainly gets points for covering a wide range of topics - "UFOs do exist", "What shape are UFOs?", "When did UFOs start?", "UFOs over Mexico", "Famous UFO places", "Contactees" and "What if I see a UFO?". But why doesn't he give us the important information, things that would go under headings such as "What else could these things be?", "Are some people nuts?", "Can photos be fake?", or, in the words of a certain gold Logie-winning TV presenter, "What the..?"

What I find most annoying about this book is that the information is presented in a way that makes one believe that there is concrete evidence proving that UFOs do exist. Exact descriptions of aliens? Well, I'll have to believe in aliens now, this guy seems so sure of himself!

Greys" are described as being "small - less than five feet - have grey skins, very large heads compared to their bodies, and enormous almond-shaped eyes. They only have holes for ears and noses. Sometimes, they have only three or four fingers which may be webbed like those of a frog. They may even have webbed feet. They have been described by the more human-looking ETs as 'our soldiers'.

Give me Triffids any day - At least John Wyndham wasn't trying to pass them off as real.

They even talk about crop circles ("SCI-fact: Crop designs are too big and complicated to be the work of hoaxers"). As well as seeing a UFO, I have seen a crop thing (I must be very attuned to alien activity, or something). We were on holidays and had just had lunch at The Pub With No Beer at Taylor's Arm. (Dad, being the Skeptic that he is, sought the evidence for there being no beer and

asked for one. He got it. Still, the pub's name held more truth than this book.) As we left the town, we saw a pattern on the hillside in different coloured grass. It said "TOBY", so straight away we knew the name of the alien who had been there. We have no evidence of the Crop Toby, because, for some mysterious reason, the camera wouldn't work. Not that that matters, of course - this book proves that, to be believed, you only need to say you've seen something.

I got my hopes up when I read the heading for the last part of this book - "On being a sceptic". "Cool!", I thought - finally, we're going to hear some sense.

Or not. The short conclusion seemed to do nothing but confuse the definitions of 'sceptic' and 'cynic'. (Sceptic: one who questions the validity or authenticity of something purporting to be knowledge. Cynic: a fault-finder). It says, "Unfortunately, you will often find that sceptics have never read the evidence. You should be a thinking sceptic, one who does not believe or disbelieve until they have read the evidence". Not only does he claim that people who don't believe in UFOs don't look at the evidence before coming to a conclusion, he claims that he has looked at it, which from this book seems to be an obvious lie - he talks about the authenticity of photos that were proven hoaxes years ago. How could anyone who seriously searched for the truth regarding UFOs not discover that?

I found this book very condescending to children. It was written as if the reader had an unimaginably low IQ, and only gives evidence supporting the existence of UFOs - not letting the reader decide for themselves, as Mr Watts urges them to do in the conclusion.

This book is published by a company called Scholastic. The fact that this normally very good publishing company would print this upsets me, and I find it sad that people who know the definition of "scholastic" (of or pertaining to schools, scholars or education) might believe that this would be a good book to be read in schools. Toby would be insulted.

Belinda Bowditch



Belinda Bowditch and Gillian Brown

Eyespy - Eye Files; Scholastic

Eye Files is one of those books intended for children, published by Scholastic. It's 32 pages long, and each page contains an article of study upon some kind of paranormal claim or sighting. An interesting read, but there are some aspects of the book that I really, as a Junior Skeptic, did not find very funny.

The book has two main types of study: Dossiers and Reports (Official, Confidential, Field or Closed). Dossiers are studies on famous people, whose fame was attained from claims of psychic powers. The Reports are all on strange incidents or findings or sightings that have happened and are still (mainly) unsolved and open for inspection.

There were three dossiers in the book, but the one that caught my eye was on Nostradamus. As many of you know, Nostradamus is incredibly famous for being perhaps the best fortune-teller in the world. He apparently predicted the rise and fall of Hitler and Napoleon, the bombing of Hiroshima and Nagasaki, and the Great Fire of London. I beg to differ about the fire of London. Nostradamus would always predict the future in quatrains, using a bowl of water on a brass stand, like a crystal ball. The English translation of the Great Fire Quatrain, No 51, goes like this:

The blood of the just shall be wanting in London,

Burnt by thunderbolts of twenty-three the Six(es),

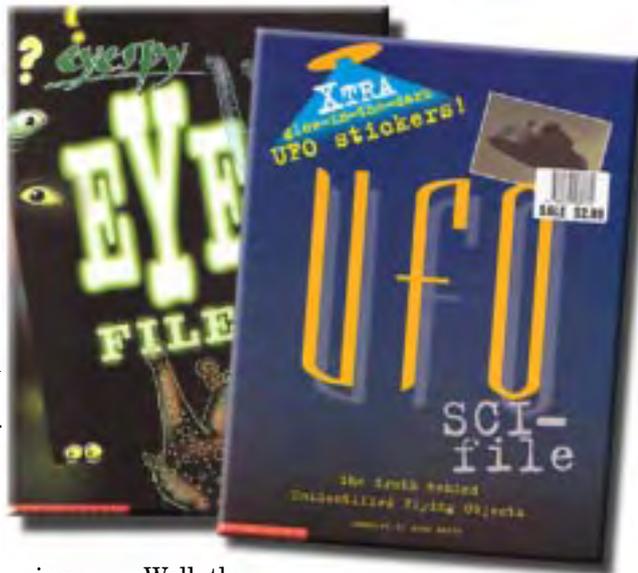
The ancient dame shall fall from (her) high place,

Of the same sect many shall be killed.

James Randi took a look at this. He says that it could indeed have been the prediction of the Great Fire, but the Quatrain fits in a lot better with something else that was actually going on at the time. Queen Mary I (Bloody Mary) of England was burning Protestants at the stake. The events in accordance to this time in history fit very well into the quatrain. Better, in fact, than the event the quatrain is famous for predicting.

James Randi suggests that Nostradamus might have worked this event into his prediction, and that chance made it seem fitting 111 years later, in 1666 when the fire occurred.

Eye Files, which was published in 1996, says that Nostradamus also predicted that a third world war would occur late last century, a dictator would emerge from China and a horrible battle would take place in the Northern Hemisphere. He says that Russia and America would form an alliance and fight against China, and that the Northern Hemisphere would experience a terrible famine as a result of this war.



Well, the Americans are still as American as ever, the Chinese are still functioning much as before and the entire northern hemisphere is as well-nourished as it was before, so I would proudly claim that Nostradamus was wrong. And also perhaps, in his life, he was wrong more often than he was right, like all those other fortune-tellers out there.

Some of the reports in this book are quite amusing, and there are about five of them I could have reported on, however I decided to stick to one; the UFO crash at Roswell.

Here are the claims. It happened on July 3, 1947, when a fella, William Brazel, reported a crashed ship on his property. The craft was reported to have been made of a type of material the military had never seen before, and inside the craft were the remains of three bodies, badly damaged from the crash. People who saw the bodies

later described them as being humanoid, with large heads, dark slanted eyes, arms of different lengths and tentacle-like fingers with suction cups at the tips.

The story then goes on to describe how everything was hushed up by the government. The story is all very well, but it was the "Official Explanation", that caught my eye. This is what it said:

All the people who had the opportunity to observe the wreckage and the bodies, including scientific experts, came to the same conclusion: an alien ship crashed that night. To this day, what happened in Roswell is the strongest evidence we have of the existence of life in outer space. The question remains, however, why did the government keep the information a secret so long?

And this is my incredibly unofficial explanation to this investigation: All the people who had the opportunity to observe the wreckage and the bodies came to very different conclusions: some of the people believed it was an alien ship, whereas others thought that this was probably either made up entirely, or some other object had crashed. If the information from Roswell is the best evidence the author can come up with, then he/she's either losing her touch, or didn't have any touch to begin with. The government probably kept it a secret because it wasn't anything special. Thank you, and good night!

I must say, though, this book was very entertaining: I laughed so much that I cried. Anyway it's only one of many books that are out there, that talk about these kinds of strange happenings. More professional books than this one sound very convincing. What gets me angry is that the author, of this book and many others, claims that scientists could not run tests or anything like that; they could only conclude that this was an alien spaceship. Scientists don't do that. Perhaps the authors should research more before trying to feed those kinds of stories to us.

Gillian Brown

Forum

Doors, Doors, Doors

Dr Robert Peard

School of Mathematics, Science and
Technical Education

Queensland University of Technology

The interest generated by the original article on Monty Hall's dilemma, or the Three Door Problem, and subsequent responses including Roland Seidel's article (22:4) and Borek Puza's analysis (23:1) have prompted me to write a few words on the problem and the issue of misconceptions in probability, the unreliability of our intuition in this field.

Probability

Most people are surprised to learn, for example, that in a group of 30 people the probability of two having the same birthday is about 70%, since this result is counter intuitive. A recent Ripley's *Believe it or Not* cited the case of a baby girl born in the USA on 7 Dec, the same date as her mother and grandmother, quoting the "incredible" odds of less than 1 in 48 million (mathematically correct). Clearly many would think this an incredibly unlikely occurrence. However, given the population of the USA, if we consider the probability that somewhere some child will be born on the same date as a parent and a grand parent, we find that even over a relatively short period of time, this is nearly certain to happen. The only "believe it or not" situation would be if this didn't happen. The misconception here is in not understanding what the problem is. Borek Puza makes the point admirably with regard to the Three Door Problem that we must first understand the conditions of the problem.

I teach a class in elementary probability to BEd (primary) students at QUT. Like many teachers, I have used this problem as an example of the difficulties associated with teaching probability, and in particular the unreliability of our intuition in this field. The correspondence you have generated on this topic has demonstrated clearly what has been well documented in the literature: the misconception is counter intuitive, extremely resilient, and not confined to naïve subjects (See, for example Borovcnik & Peard, 1997, and Shaughnessy, 1992).

Simulation

It was interesting to note that many of your correspondents resorted to simulation before accepting the solution. Simulation can lead to a correct solution to many problems in probability; in some situations a simulated solution is much easier to obtain than a theoretical one. For example, to calculate the probability of having an opening hand in a game of bridge using theoretical probabilities would be an extremely complex problem. With modern computers, though, or even with enough players playing the game, a simulated solution is a relatively easy matter. However, the process of simulation does not necessarily lead to or improve any understanding of the situation. In *The International Handbook of Mathematics Education*, (Borovcnik & Peard, 1997, p. 376) the authors cite the simulated solution to "Monty's Dilemma" (The Three Door Paradox) as an example of where a correct solution is readily obtained through simulation, but without this resulting in any improved understanding of why.

I, too, have used simulation to demonstrate the solution to the problem with my own class. However, as students of probability they require more than just the answer. They want to know why, and, as many of your readers have already discovered, the result is counter intuitive and very difficult to explain. Students of more advanced probability can more easily recognise the situation as one of conditional probability and apply Bayes' Rule to obtain a solution (This is the analysis given by Borek Puza in his Appendix 3). However, this option is not available to my students of elementary probability, nor is it to many of your readers or the general public.

Assumptions

To understand the problem, we must first understand that there are numbers of assumptions made. This is often the case when attempting to analyse problems in probability. The assumption of assigning equal likelihood to the outcomes of an event is one that is not always justified. This is, in many instances a misconception, and with regard to the Three Door Problem, is really the crux of the issue. We see this in its simplest form when, for example, young children are asked: "In a class there are 12 girls and 16 boys. The teacher puts the name of each child in a hat and draws one out at random. What is the probability of the name being a boy? Many children (and adults) will answer 1/2, arguing that it can be either a boy or girl and that these are equally likely.

A more subtle example is the situation where we ask a group of people to select a number from 0 to 9 'at random'. There is a tendency to assume that each of the 10 digits is equally

likely and that about 1/10 of the group will choose each. People are often surprised to learn that the numbers 7 and 3 are much more likely than any of the others. Unlike drawing numbers from a hat, people do not select at random. Even when we assign probabilities to tossing coins or rolling dice, we make assumptions of equal likelihood based on the symmetry of the materials used, which may not be correct. However, in the absence of other information, in symmetrical situations, it is reasonable to accept equal likelihood.

Misconception

The Three Door Paradox is in fact an example of the “equally likely” misconception. There is a natural tendency when the two doors remain closed to assign an equal probability to each, *viz* 1/3. There is no justification for doing this, it is simple the intuitive thing to do. We have seen that simulation produces a frequentist probability of 2/3, and the mathematical analysis of the problem as stated yields a conditional probability of 2/3, but can we explain this more simply? I have found the following argument reasonably acceptable.

We know that the sum of the probabilities of the outcomes of any event must always add to unity. In the drawing of names from a hat, for example, the probability of a boy plus that of a girl must add to one whether or not they are equally likely. The probabilities of the doors containing the prize for the contestant selecting at random might be 1/3, 1/3 and 1/3 for each door, but for Monty they are 1, 0, and 0 (he knows where the prize is). The assumption of 1/3 for the contestant might be incorrect. The host may have a preference for placing the prize in the centre box for example and the probabilities could be 1/4, 1/2, 1/4. However, again in the absence of other information it is reasonable to assume equal probabilities and having selected a door at random to assign to this selection a probability of 1/3. Now we know that Monty will open one of the other two doors. He will never open your door, he knows where the prize is and employs this knowledge in his action. This action will thus result in

a change of probabilities for the other two doors, but cannot affect the 1/3 probability of your door. The new probabilities then become 1/3 (yours), 0 (the open door) and ? for the other. This must be 2/3 since the sum of the three is 1. I have found that not everyone accepts this explanation immediately, probably because the result is still counter intuitive, but for many it does provide an explanation that simulation does not.

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Where to start

*Herbert Niesler
Arana Hills, Qld*

When Roland Seidel introduced us to the three door problem, I was amazed and convinced of his answer. With the ongoing discussions I have finally realised that this is a brilliant example of how the probability issues get caught up in, and confused by the protocol of the experiment. It's a classic magicians sleight of hand situation. Any answer that includes 1/3 or 2/3 is wrong.

To explain my point I will break up the experimental protocol into steps (based on the original article page 30 of 18:2) and show where the probability problem actually starts.

The probability problem has not started

1. Game show players, you have three doors to choose from, one hides the prize.
2. You choose a door.
3. The host says, “just before we open that door I will show you one of the others”, opens a door showing no prize.

The probability problem starts here

4. “Do you want to change your choice?”.

The first three steps have no bearing on the outcome of the problem. After step three, your choice is from two doors only. One has the prize and the other hasn't. At this point you also are able to change your mind on which door to choose, so the earlier choice has nothing to do with the choice you will make now. No matter what choices are made during steps 1 to 3, you will always have a 50% chance of getting the prize at step 4.

The trick is in making you think that it is actually a three door problem, when in reality it is only ever a two door problem. When you get to step four there are only ever two doors to choose from and your earlier choice has no effect on the probabilities that apply from this step as you are making a totally independent choice at this time. This is where the probability problem truly starts.

So what do all those complicated probability calculations in previous issues tell us? You can spend a lot of time and effort on a problem, if you don't understand properly what it is you are trying to analyse. I think there is a message in that for us all.

Incentive

*Jean-Pierre Favre
Bungendore NSW*

I have read the profuse articles about the Monty Hall's three doors problem and as usual with statistics can't make any sense of any of it. I'm sure the eminent writers are all correct but consider this:

What I would like to ask is that, in order to make the problem more interesting and possibly understandable, you now use 1000 doors and put a Ferrari behind only one of them.

The player is then asked to select a door behind which he/she thinks the Ferrari is located. Knowing where the Ferrari is located, I will then proceed to open 998 doors behind which there is nothing.

Forum

Should you change your mind and switch or should you stick to your original choice?

Also in the TV game 'Who wants to be a millionaire', if when presented with a 4 choice question the answer to which you haven't got the faintest, could you try to pick one at random and then take the 50/50. In the event that your selection is still on the board when two possible answers have been removed, should you then switch to the remaining one or stick to your original choice? (Personally I would go through the whole list in a loud voice and listen for the appropriate cough!).

More doors

Fred Flatow
Monterey NSW

In the last issue, Borek Puza (*Forum*) spends four pages and 6 Appendices trying to befuddle us with statistics. I have found it is often easier to comprehend what is happening by considering an extreme example.

Let's assume there are 100 doors. The contestant chooses one door (a chance of 1/100). The host then opens 98 empty doors. Given a chance to change his mind and choose the other remaining door, the contestant obviously increases his chance (by a factor of 99 in this case).

In general, if the number of doors in "N", the contestant, by changing his mind increases his chance by a factor of N-1.

An open and shut case.

And more

John Turner
Toronto NSW

Maybe a last word on the three door choice? Anyone given the option of choosing two doors rather than one would choose the two door option. There is 100% chance that one of the two doors will be empty so that the experimenter opening an empty door is like the magicians swirl of his cloak

or the wave of his wand; it is irrelevant. When given the opportunity to change the client is being given the opportunity to pick two doors rather than one so that over a large number of trials the client will win about 2/3 of the time if he or she changes.

Yet more

E. Hartley
Rye VIC

I'm no mathematician, but it seems to me that the outcome(s) can be described as follows:

The prize is behind door 1 and:

A. I choose door 1

I am shown door 2 (or 3) to be empty

I change to door 3 (or 2) and lose.

B. I choose door 2

I am shown door 3 to be empty

I change to door 1 and win.

C. I choose door 3

I am shown door 2 to be empty

I change to door 1 and win.

Now I can't arm wrestle numbers with Borek Puza, but unless my fingers need recharging, I make that 2 wins out of 3 instead of the 1 win out of 3 I would have if I didn't change.

The same reasoning would apply *mutatis mutandis* if the prize were behind door 2 or door 3.

Editor's Confession

In this puzzle, I find that I always agree with the last person I hear from, which probably makes me a probabalistic nincompoo. It certainly confuses me.

Apropos which, unless someone comes up with an absolutely irrefutable, novel (and easily comprehensible) answer to this problem, or can show the effect that closing and opening doors has on the way water runs down the plug hole at the South Pole, this correspondence is closed. Future correspondence on this matter may be addressed to the editors of *Creation Prayer News*, *Rugby League Week* or the *Poultry Breeder's Gazette*, but PLEASE not to *the Skeptic*. Ed.



Skeptics getting involved. See stories on following pages.

Getting Involved

In the past we have tried to bring our readers information about events organised by the various state Skeptics groups — it was always an enterprise fraught with frustration for editors driven by deadlines and, sadly, it didn't really work. The Skeptics web site www.skeptics.com.au is now playing host to a number of branch home pages (and more are under construction), which should help people keep abreast of activities. Failing that, and as there are always Skeptical activities going on, we urge readers contact their state bodies using the addresses shown on the title page of *the Skeptic*.

As a quarterly national journal is not necessarily an appropriate platform for items which are purely parochial or topical, we urge the state movers and shakers to keep their home pages up-to-date, not only with notices of meetings to come, but also with reports of what went on. We are, of course, always delighted to publish original presentations by speakers at various state functions.

In the following columns we will try to give a brief flavour of some of what has been going on around the country, using abbreviated reports from what Skeptics have told us.

Victoria

Vic Skeptics is undertaking a number of activities in the near future, including public meetings, The Great Australian Science Show, Science Talent Search, STAVCON and Primary Science Teacher's Conference.

We recently shifted our Public Meetings venue to The Whitehorse Inn Hotel Hawthorn, where we kicked off with an excellent presentation by Chris Krishna-Pillay, Manager of CSIRO Education (Victo-

ria), on the health of science education in our fair state. Among the many cogent points he highlighted were:

- science has an important place in the primary curriculum. It is necessary to engage and satisfy the natural curiosity of the child from an early age, and good teaching requires revisiting and reinforcement of concepts as the child develops.
- primary schools which give science proper consideration in their curriculum are often highly successful, with children finding science fun and relevant.
- scientific literacy remains low among primary teachers, and there is a lack of initiative to remedy this situation, with confusion between astronomy and astrology being cited as a common problem.

Ken Greatorex, Secretary

NSW

NSW Skeptics has an established and successful programme of Dinner Meetings at the Chatswood Club.

The next meeting, featuring prominent plastic surgeon, Dr Cholm Williams speaking on dubious practices in cosmetic surgery, will be on Saturday, July 5 (see insert for further details).

Recent NSW activities have included the following.

Being There

Notes on the Answers in Genesis meeting, advertised as a public meeting, held at Bonnet Bay Public School on May 25.

- It was a religious service, with prayer, a hymn and lots of time given over to why one should repent, etc. Bad form for a public school;
- In the agenda, there was no provision for question time (surprise, surprise);
- There were no scientific arguments, points or evidence adduced for creationism, purely ones made on religious grounds. For instance, when asked to give one bit of evidence for creationism, the AiG people simply attacked evolution, ignoring repeated requests for evidence for creationism. In the end they held up the Bible;
- AiG speakers have clearly been trained to pick holes in science in general and evolution in particular, but as they show little or no knowledge of science, their arguments would only appeal to the scientifically illiterate (sadly too large an audience);

- Science was attacked repeatedly, using false and fraudulent data, eg, reiteration of the common (and blatantly false) mantra of creationists that radioactive dating processes are fatally flawed;

- Richard Dawkins was attacked again and again. Although it was long since comprehensively exposed in *the Skeptic* (18:3 and 18:4) as unscientific rubbish,



Noah's Ark: woodwork excellent; argument pathetic.

Activities

the notorious *Frog to a Prince* video was frequently cited as evidence as to why evolution is wrong;

Things became more interesting when ABC Science reporter, Dr Paul Willis (himself a palaeontologist), stood up and introduced himself. He pointed out the many half-truths and deceptive statements in the presentation and offered the use of an independent third-party science lab to test some of the claims about a young Earth. The speaker said that any lab that was not run by a creationist organization was not to be trusted. AiG seems to have a persecution complex.

Richard Saunders; Malcolm Cluett

Psychic

At the behest *Today Tonight*, I attended a performance by “the most accurate psychic in the world”, Talieha (I think). (She might be, but that doesn’t say much, and I had never heard of her before the performance.)

- Before the performance, I had time to wander through the waiting audience and eavesdrop many conversations. People were chatting about other clairvoyants they had seen, family matters, personal information etc. Had I needed to, I could have stunned many of them later on with my impressive insights.

- Talieha did a pretty good job with her version of cold-reading, but it took a long time. She did readings for about 2 hours, with each person getting about 5 minutes.

- The brief TV report only showed the positive reactions from the audience: “That’s all true.” “She was really accurate.” “Everything she said was right.”, but plenty of others gave negative reactions that were not broadcast.

One further entertainment was our visit to the regular *Mind, Body and Spirit* exhibition held at Darling Harbour. These have been going on for years and the only changes seem to be in the *New Age fads du jour* that feature. In the wake of the cataclysm that recently struck the alter-

native medicine industry, we were rather amused by one stand offering various “non-chemical” shampoos and the like, as shown in the photograph below.



Keeping the evil chemicals at bay

I end by making a plea. If you have the chance, please make the effort to attend public meetings, gatherings and performances from “the other side”. Reading about it is one thing, but living it gives you a far better understanding.

Richard Saunders

Musings on museums

Museums are educational institutions. They expose us to things that would normally be impossible to see without extensive travel or a time machine. One thing we expect from museums is a commitment to the truth. We have the right to think that the stuffed animals in natural history museums really are examples of what these animals look like. In a science museum, the science should be based on real research and knowledge except where examples of pseudoscience are displayed to make a specific point. (Every time I go to the Australian Museum I am pleased to see a sign saying “Evolution is a fact”, put there to answer anyone who complains that the exhibit about evolution is not “balanced”.) The objects and artefacts in historical museums are assumed to have a provenance that connects them to

the people, places, events and times being described.

On the equinox in March 2003 the Liverpool Regional Museum held a function called the *Celestial Celebrations and Autumn Equinox*. It featured palm readers, astrologers, tarot readers and other nonsenses associated with the superstitions surrounding such significant days of the year. The day marked the culmination of an exhibition of occult nonsense called *Stars Cards and Charms; enter the Mystical Realms*, and at first I thought that the equinox event might be a good-humoured way of highlighting the silliness of all this and an appropriate date had been chosen just for the purpose of the story. In fact, the museum seemed to be taking this seriously, and the event was promoted and run by the Pagan Awareness Network and the Astrology Association of

NSW, both of whom had been involved in the ongoing exhibition.

A group from the Australian Skeptics thought that it might be fun to have a stall, where we could bend some spoons, do some cold reading, a bit of tarot, maybe dowse for some underground torrents, and generally practise our occult, “magical” skills. Unfortunately we were rebuffed, and it was disturbing to be told that this was because the museum “would prefer it if the day could just focus on the mystical issues raised by the exhibition and provide a space where these ideas can be celebrated in a supportive environment”.

It is not the purpose of a publicly-funded museum to provide a “supportive environment” for superstition and witchcraft. The museum may profit from this exercise, and that is good because it will provide funds for future collections and exhibitions, but this has to be balanced against the harm done by allowing people to infer that there is some validity to superstition, simply because it appears to have the imprimatur of an organisation which should be devoted to the spreading of knowledge and truth.

Peter Bowditch



Theories of Everything: Science TV in Sydney

Many people may not be aware of it, but there is another free to air TV Channel in most cities — Community Access TV on Channel 31.

I browsed it one night and was surprised to see Mike Archer from the Australian Museum being interviewed on a science based show, *Theories of Everything*.

I had only seen bits and pieces of the show before, but it seemed that it was worth emailing the presenter, David Tow, to ask if he would like to interview Australian Skeptics. His response was enthusiastic and within the week, David was at my house with cameras and lights to tape a show. Along for the fun were Alynda Brown and Peter Bowditch. The Skeptics were given a great run and even managed to destroy a few spoons. After the show I offered my services as producer and spent the next 10 hours editing the interview.

Two weeks later, Ian Bryce was in the hot seat and Colin Keay has also appeared.

In Sydney, tune in on Sunday nights to catch the show. You can get details on tuning your TV for Channel 31 from www.channel31.org If you would like to comment or offer ideas, write in to questions@theoriesofeverything.com

Richard Saunders

The *Theories of Everything*, science/philosophy program running on Channel 31 Community TV Sydney, had its genesis in Bar Italia, Leichhardt two years ago.

I have been a regular customer in Bar Italia, one of the original Italian coffee bars on the Norton Street strip, for over 10 years. I used, and still use, it as a combination office, think space and social centre. It's a laid back bar and a haunt for all types of eccentric characters, including myself.

I had just completed my *magnum opus*, *Meta-evolution: The Future of Life* (now available on Amazon but also freely on www.future-of-life.com) after 6 years on-and-off hard labour. It's a big picture and fairly radical thesis about the generic evolutionary process.

At the time another eccentric character, Tom Zelinka, previously a producer on ABC JJ, was regularly reading history, particularly related to the American Civil War. After some months we got to chatting and I discovered that he had transmuted to programming manager for the nascent Ch 31.

One day I suggested that he should include the occasional science

book in his mix of reading material. This idea was greeted with some disdain but I persevered and eventually was able to persuade him to read one or two general science books about the cosmos. He then asked for several more references — Tom was hooked.

He went on a science binge, reading at least a book a week and finally insisted that I create a half hour science show for Ch 31, which I did.

I soon discovered that creating a credible half hour of science on different topics every week, mixed in with interviews, when not IT consulting was not a simple task. Still, I was committed and began to evolve a formula based on the big picture research I had originally completed for my book. This included, for example, sometimes developing a theme such as the latest theories of the mind or life or cosmos over several programs, but always examining the implications of the science within a social or philosophical context.

The current successful association with Australian Skeptics looks like being a very fruitful addition to the scope and popularity of the program, particularly in conjunction with the expert editing support of Richard Saunders.

David Tow

Other Activities

Among other projects sponsored or supported by Skeptics groups are:

National

The Australian Skeptics Eureka Prize for Critical Thinking

For schools or school children

Science Talent Search (Vic)

Young Scientist Awards (NSW)

Scientist in Residence (Qld)

Oliphant Awards (SA)

Questacon Mathematics Quest (SA)

Crossword No 16 Answers



We are still having trouble with the Crossword and there will not be one in this issue — we hope to have it sorted out by the next issue. We also note with sadness the recent passing, at 87, of Lindsay Browne, the doyen of Australian crossword compilers.

Winner of competition 16 is Ian Petersen of Berowra, NSW. We have sent him his book prize.

Letters

Enviroskeptic

Janetta McRae
Kambah ACT

Having just read *The Skeptical Environmentalist*, I was interested to observe Ian Lowe's criticism in *the Skeptic* (22:4). After all, it is such a controversial approach to the subject that I expected there would be a number of reasoned and informed rebuttals of some (at least) of Lomborg's claims. Unfortunately, Professor Lowe did not provide any.

He begins with the cardinal sin of attacking the writer rather than the writer's arguments. Now, economists may be on a par with snake oil merchants and would-be sellers of large, metal bridges (although Richard Lead might have some quaintly idiomatic remarks on that line), but attacking your opponents' credibility in order to undermine his arguments is not a seemly way to begin.

Professor Lowe accuses economic models of being shaky, but praises climatic models for being "tested against the real world". However, as Lomborg points out, *any* computer model will only reflect the information put into it, which is why, for example, most computer models which assume a CO₂ increase of 1%, rather than the current rate of 0.58%, are not actually reflecting the "real world" (Lomborg p 279). Professor Lowe also fails to mention that there is not just *one* model of global warming, but many, each with a different outcome depending on the information fed into it.

Many of Professor Lowe's assertions

must be of the kind that galvanised Lomborg into writing the book in the first place. For example, in the third column on page 62, Lowe states that at a recent conference "... over 1000 of the world's leading scientists ..." painted a picture of unrelieved gloom, making such statements as "... the extinction rate of species is believed to be accelerating...". Scary stuff. But where is the evidence? Using the same statistics available to the "world's leading scientists", Lomborg comes up with an extinction rate of about 0.7 percent in 50 years — unacceptable because it is higher than the normal background extinction, but much lower than the oft repeated claim of "40,000 species a year", a figure hazarded by Myers in 1979 and repeated unquestioningly ever since.

Professor Lowe derides Lomborg's claim that wealth leads to an improvement in environmental conditions. I don't know why, since it is the wealthy nations who have the most to say about the environment and have done the most to "clean up their acts". (Melbourne is no longer known as "Smellbourne", nor Edinburgh as "Auld Reekie" and Sherlock Holmes probably wouldn't recognise London without the fogs.) Our higher standard of living has led to better health, longer lives, better education and more leisure time, so we can rush around telling the developing nations to "do what we say", rather than "do what we did". Your average third-world resident is much too busy trying to stay alive to give much attention to the fact that burning fossil fuel is likely to pollute the atmosphere (and give them a fatal lung disease into the bargain).

One of the most important statements Lomborg makes (and he makes it a number of times, probably because he was aware that he would be pilloried for questioning current orthodoxy) is that the world is not an ideal place, but it *is* improving. Why then do people insist on painting pictures of unrelieved gloom? Is it because they believe that others will listen to them if they make things sound very much worse than they are? Unfortunately, this over-dramatisation is likely to produce only negative outcomes. Firstly, panicky reactions to what appears to be a serious problem often lead to expensive and ultimately unsuccessful attempts at solutions. Secondly, if you continue to cry 'wolf', people will eventually stop listening to you, even if you finally do tell the truth. Thirdly, faced with what seems like a hopeless task, many people will simply give up and think, "To hell with the environment! The world's coming to an end, I may as well enjoy myself while I can!"

Lomborg's claims have been fiercely attacked by many environmental scientists. What disturbs me is that much of the criticism is highly emotive and not backed up by much in the way of evidence. There seems to be a determined attempt to gag him, so that his embarrassing claims will not be heard. Yes, his critics have reputations to lose — but if they wish to keep these reputations and retain the respect of the general public, they will have to come up with some calm, rational arguments. Otherwise we will simply lose faith in them and the environment will probably be the loser.

Bible codes, etc

T W Allen
Duranbah NSW

As a new subscriber, I would like to make some comments. I greatly appreciated Martin Hadley's dissertation on 'Religion, Faith and Skepticism' (22:4), but feel that he has taken the New Testament Gospels too much at face value when he says "Pilate, with typical Roman sensibility, was all for letting Jesus go". Modern historians seem to be in no doubt that Pontius Pilate was a brutal tyrant who wouldn't hesitate for a moment before crucifying any suspect leader of a rebellion. The Gospel writers deliberately sanitised Pilate to curry favour with their potential Roman converts, shifting blame for the crucifixion of Jesus onto the Jews, who had rejected their message. For 2,000 years the Jewish people (deemed 'Christ-killers') have borne the catastrophic cost of this little diplomatic exercise!

Gary Bakker (Theology, Philosophy and Psychology (22:4 p61) wants to 'do away with philosophy' and replace it with semantics, science and psychology. I wonder what he proposes to do with all the PhD's — would they all become SSPD's?

I was recently given the book *The Truth Behind the Bible Code* (Macmillan 1997) by Dr Jeffrey Satinover, a Jewish child psychiatrist before studying physics at Yale. He claims that many sceptical mathematicians and statisticians at Harvard, Yale, etc have been at a loss to explain the remarkable decoded predictions, extending right down to modern times, in the Hebrew Torah. There is a graphic prediction of the holocaust, for instance, even naming Auschwitz and Eichman! The author, betraying gross ignorance of how the Torah (a mish-mash of at least five authors) came about, attributes these miraculous codes to single authorship by the legendary Moses. Significantly, every prediction 'discovered' by this growing band of enthusiastic fundamentalist Jewish scholars is retrospective. The book does not stick its neck out with a single future prediction! I wonder if

your erudite linguist, Mark Newbrook, (whose extensive use of parenthesis frequently stresses my less-evolved neurones) is aware of this body of 'scholarship', and can enlighten us?

Editor's Note

For the latter question, look at: <http://cs.anu.edu/~bdm/dilugim/torah.html>

the web site of Prof Brendan McKay at ANU, who is widely recognised as the leading scholarly investigator of the fallacies of the Bible Code. **Ed**

Prayer

Alan Moskwa
Kensington Park SA

Kevin McDonald writes an excellent personal view of prayer in *the Skeptic* (23:1 p26-27). Agreeing with him completely, I too, "have yet to see a single example of proof that praying has done anything to change the inevitability of various events in the lives of my fellow humans." But they are coming close.

An interesting study I read a year or so ago in the *British Medical Journal* (which I have currently misplaced and so am unable to cite) demonstrates a remarkable outcome of intercessory prayer on the health of patients in the Intensive Care Unit of a hospital. It was carried out in the late 1990s on the group of patients — get this — *retrospectively*. The researchers obtained the records of several dozen patients who had been treated there some ten years earlier!

Without checking the outcome of their illness, he randomly assigned them to two equal groups. He then gave a list of names of one group to a local church, and the congregation prayed for these people to get better — without knowing that their illness had occurred a decade earlier. The other half was not prayed for, and acted as a control group.

After the prayers, the researcher looked up the case notes to find out what had happened to the patients. Lo

and behold! He discovered that the group who had been prayed for had a (marginally) better survival rate and a significantly better morbidity — spending about half the total time in hospital (which varied between 30-150 days) of the other group. He was unable to explain this result satisfactorily, but reported it as an interesting experiment.

Well, I was raised a good Roman Catholic, so I knew the answer. God is omnipotent and omniscient, ie, he is all powerful and knows everything! (*Just like an editor, then? Ed.*) This means that, when these patients were seriously ill in the 1980s, He would have known that they would be prayed for in the 1990s, so obviously he interceded on their behalf *pre-facto*.

What does bother me about this is the limit of His largesse. Why did He not save more of them? The mortality rate was not significantly different, even in the time spent in hospital was halved.

Secondly, does it mean that the Jews are truly God's people? This study was carried out in Israel! What would happen if the study were to be repeated in a Christian or Muslim setting? Or even a Catholic or Protestant setting?

It obviously needs more research.

More prayer

John Stear
Coombabah QLD

Reading Kevin McDonald's excellent article "Let Us Pray" (23:1) I'm reminded of a prominent Gold Coast City councillor who, last year, joined the increasing calls for the Almighty to intervene in the Gold Coast's awful and prolonged drought.

The good but gullible councillor stipulated that prayers should be offered within the precincts of the Gold Coast's principle water reservoir, the Hinze Dam, rather than generally up and down the Gold Coast. To justify this requirement she referred to the *Gold Coast Bulletin* of 11 July 2002 in which it was reported that the faith-

Letters

ful had gathered at the Mackay showground to pray for rain. Following their prayers the Almighty sent a downpour that flooded the showground and left the rest of Mackay dry as a bone.

Perhaps H.L. Mencken was right, when he said, "The creator is a comedian whose audience is afraid to laugh."

Darwin

*Sydney Bockner
Crafers SA*

In Helen Lawrence's very fine review of *Darwin* by Desmond *et al* (23:1) she mentions Darwin's psychosomatic illness. Biographers, she states, portray him as a "weak willed hypochondriac". Darwin had multiple symptoms over many years, but his illness was misdiagnosed, and he was not a neurotic.

It is now recognized that he suffered from Chagas' Disease. This is a parasitic disease due to trypanosomiasis. The trypanosome parasite affects the heart, muscles, brain and liver, producing recurrent fever, anaemia, enlarged liver, spleen and glands. The parasite is spread by reduviid insects and mosquitos. Darwin probably picked up the infection during some of his tropical travels.

Homeoskeptic

*C W Williams
Hornsby NSW*

Having just seen the second of the *Catalyst* programmes, with a thorough debunking of the claims of Homeopathy by James Randi and others, a thought comes to mind.

If water has such an extraordinary memory, why doesn't every molecule of water in the whole world, since the time it first was formed from atoms of hydrogen and oxygen, remember every

single compound that it has come in contact with?

If that is the case, and if the memory of water worked, we would surely expect to see the most diabolical plethora of sequelae to its use as a therapeutic agent in humans.

Given that all the water we drink comes from evaporation, and most of it from the oceans where the water is succussed continually, we should all be thoroughly immune to any water borne diseases of any sort.

Atheist agenda

*Bob Entwistle,
Dunedin NZ*

Helen Lawrence (Skeptic, 22:4 p46-48) has strange ideas about "an atheistic agenda". My position as an atheist is perfectly secure and doesn't require an agenda. My view, and, I suspect, the view of many atheists, is that every question concerning the structure and origin of the physical world will yield to scientific study, if not this century then the next or the next. Even if progress in understanding slows to zero at times it would be pointless to admit defeat and accept that things are so because god made them that way. The very fact that religion, as distinct from religious scientists, has made precious little if any contribution to our understanding of the physical world should be sufficient reason for this.

The idea of a god who designed and built a universe and set it running is more bizarre than any of the theories of the beginning of the universe which are currently keeping physicists off the streets. We are at once led to ask "who taught this guy to build universes?" Is there an even bigger operator behind him? How irrelevant can you get? And when it comes to an all-loving god do we recall that, in Dawkins' words, "all creatures are dinners or diners"? Some chefs are impervious to the suffering of their material, eg, ichneumon wasps have the nasty habit of paralyzing their spider victims so that their

young when hatched find themselves surrounded by fresh, living, food — does the spider so victimised feel that god loves him? Add to that the raft of poisonous natural substances, animal venom, etc, and ubiquitous natural hazards and diseases to which we are prone, and the misery in which a large proportion of the world's population continue to exist, and we can only conclude that someone out there doesn't care about human or other animal suffering or, more probably, doesn't exist.

Linguaskeptic

*Mark Newbrook
Wirrall UK*

Comments on three letters in 23:1.

1) Daniel Stewart (pp 65-66)

Maybe Stewart works with a definition of 'science' which is considerably wider than any that I know. Some of his remarks suggest this. But, if this is not the case, he will find that most philosophers and philosophically-aware scientists will continue to disagree with Gerrand (22:3, p 66) and with him. In fact, as I have remarked before, those who do proclaim that there is no realm outside science are, as it seems, contradicting themselves. If Stewart really disputes this, he should explain his case.

Of course, ethics is not **altogether** outside the scrutiny of science, and if **that** is all that Stewart means to deny, his point is harmless. Scientists can answer some important questions about the psychology of ethics and associated matters; no one should dispute this. But the core issues of both metaethics and ethics proper, which are also undoubtedly important, cannot be answered in this way. And in fact Stewart, inconsistently, seems to concede this himself ('Scientific method cannot decide which ethical principles we should follow'). I suggest that in fact he has no coherent objection to my position.

2) Jack Hamm (pp 64-65)

As this otherwise useful letter shows,

it is unwise to look in non-specialist dictionaries for the senses of technical words. Anyone who wants to take part in this discussion but does not know what *scientism* or *metaethics* means needs to study the relevant part of philosophy. (Part of my complaint against Gerrand is that he presumes to discuss philosophical issues without having done just this.) I offer here rather rough definitions:

Scientism: *the view that science is the only legitimate way of studying any intellectual issue — and that any ostensibly non-scientific issue must therefore be either recast as a scientific one or treated as incoherent or illusory.*

Metaethics: *the theory of the status (as opposed to the content) of ethical statements; metaethical issues include (a) whether or not (any) ethical statements are objectively true or false, (b) whether such statements are logically grounded in more empirically testable statements about the world, in the will of God, etc.*

3) Lorraine Delaney (p 65)

It is good that the writer has learned some Greek, but she should be careful to get the details right. For instance, *agnosis* is not a verb but a noun

The importance of 'a'

P.L. Riley.
Blacksmiths NSW

In Letters (23:1) Mark Newbrook states that atheists do have a belief in spite of the 'a'.

A **theist** is a person who believes in a god or gods.

An **atheist** is a person who is without belief in a god or gods.

An **agnostic** does not believe in a god or gods which makes him an atheist. If he did believe he would be a theist.

A person who is without belief in anything cannot be asked to provide proof of his belief.

A theist claims that a god exists. An atheist says that there are no gods and justifies his position on the grounds that no evidence for a god is available. Such a common sense approach is used by everybody in their daily lives but for most of the time the beliefs are acted upon without consciously thinking about them.

I don't believe there is life on other planets but Mark claims not to know if life exists on other planets — I don't believe the Liver birds flap their wings either, but that has nothing to do with atheism! (Mark will appreciate that joke.)

In the *Oxford Pocket Dictionary*, 1966 edition, atheism is defined as "Belief that there is no God." [Note capital G.]

In correspondence with Oxford University Press it was agreed that a better definition of atheism is: "Without belief in a god or gods", thus avoiding the dictionary suggestion that atheists have a belief and consequently, sometimes, asked to prove it. No doubt (?) the definition will be "corrected" in the next edition.

My original letter on "The importance of 'a.'" seems to have created quite a stir, but that is good, eh?

Evolution

Herbert Niesler
Aran Hills, QLD

The concept of evolution has long been constrained by the environment it was originally discovered in. Hence it has been dominated by biology/ecology related terminology which has stopped its identification as a much more general phenomenon. By identifying the key general characteristics that lead to evolution, it is possible to see that it may well be a very pervasive phenomenon.

The three characteristics that I see (there well may be more) are:

1. It applies to an identifiable entity. That entity can be a cell, an animal, a group of animals, a language, a cult, a

government department, a body of thought and so on.

2. The entity has to be able to sustain itself. If there are losses, those losses can be made up for in some fashion. Animals reproduce, cults recruit new members, a body of thought has new ideas added to it, and so on.

3. The entity is responsive to its environment. It changes to adapt to pressures applied to it, so as to maintain itself. Cells and animals are well known for biological adaptation, groups of animals adapt their behaviours, cults change their beliefs to try to make themselves more survivable, languages change to remain useful, a body of thought discards ideas that are considered useless and takes on ones that are more useful.

From a generalisation like this, the evolution of religions seems inevitable. In fact, religion can also become a sub-component of the evolution of how humans understand the world around us. You have an evolutionary sequence that takes us from superstition, through religion to modern scientific thought. Each step along the way gives its possessors greater understanding and control over the world around them, hence greater reproductive success.

With this generalisation of the concept of evolution I can almost convince myself that it may be easier to identify the areas where evolution doesn't apply, rather than list the area's where it does.

Conversion

Gary Goldberg
Silver Spring, MD USA

Tory Shepherd [23:1] either does not regard Judaism as "a major world religion" or has some evidence of which I am unaware that it engages in "coerced conversion". In fact, Judaism does not proselytize (except some Orthodox sects which try to convince other less-religious Jews to become more observant) and even discourages conversion.

Letters

Belief

John Wolczko
Gold Coast, Qld.

I was very surprised to read Tory Shepherd's article on page 61 of the Autumn edition (23:1), in which she uses the phrase "I don't believe" a number of times. The phrase "I believe" is the greatest con ever devised by man because if you believe you don't have to prove anything. It has been used to hoodwink, confuse and terrify gullible people for millennia right to this day. As such it should not be used in our dictionary, for we always question the truth or soundness of any opinion or accepted idea and require proof upon which we either become convinced or not but never believe.

History as science

James Gerrard
Kew VIC

"History needs to be a science" was the concluding theme of Jarad Diamond in his renowned book *Guns, Germs and Steel - A Short History of Everybody for the Last 13,000 years*. This need was exemplified in a recent debate between Keith Windschuttle, author of *The Fabrication of Aboriginal History* and Pat Grimshaw, Professor of History, before a packed audience on "White Settlement in Australia: violent conquest or benign colonisation?" in Melbourne (5/3/03).

Windschuttle reached the conclusions expressed in his book by seeking the facts from examining all the available evidence, a scientific approach. Grimshaw and fellow non-scientific historians, such as Henry Reynolds, approached the subject with minds already convinced and then either selected or fabricated evidence to support their view. Windschuttle could only find 117 Tasmanian Aborigines killed in the early decades of Tasmanian colonisation, versus 180 white settlers, not the many thousand Aborigines as claimed by Reynolds and others. He also said there was no gue-

rilla warfare by the Aborigines, only some small gangs, led by two Aboriginal bushrangers from the Australian mainland, attacking isolated white stockmen.

Windschuttle's claims in his book of false facts and fabrications by Reynolds and others were not disputed by Grimshaw (who claimed she was not an expert on Tasmanian Aboriginal history) nor have they been by Reynolds or other historians. Grimshaw's main contention was that the Aborigines had been dispossessed of their land by the white colonists.

Windschuttle pointed out that Australian Aborigines had no concept of possessing land (the Mabo decision was about Torres Strait Islanders who **did** have the concept of land tenure) and the British government, when they colonised Australia from 1788

had two hundred years of American experience of looking after the indigenous American Indians.

The British were also strongly influenced by the Enlightenment that proclaimed the equality of all humans, so that governments formed in Australia were committed to looking after the indigenous Aborigines.

Today the best way to help Aborigines is to help them receive an education such they can benefit from our dominant modern culture. Presently many Aborigine communities are going backwards with less education, breeding alcoholism and male violence.



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Divining Video/DVD Now Available

It was 1981 and a kid I use to know (with the same name as mine) raced to the TV to watch one of his favourite shows on Ch 7, *Great Mysteries of the World* with Scott Lambert. This time the show featured a story about testing water divining and starred a certain well-known Dick Smith. There was another man involved, a man with a white beard and glasses, who jumped about doing magic tricks and bending spoons. (It's odd how little James Randi has changed over the years — does he keep an ever-ageing portrait in the attic, perhaps?)

The scene moves forward eight years and the TV is tuned to Ch 9 and *A Current Affair*. More water diviners, more tests, a slightly older looking Dick Smith and a group calling themselves Australian Skeptics. Although the diviners were not the same as the ones on *Great Mysteries*, they could have been!

Another time, another place, and I find myself in 2002 watching yet more water divining tests, this time 'live', at the Mighty Mitta Muster. And this time I was behind the camera making my first documentary.

A final time jump lands us at Crestwood High School (Sydney) in 2003 as Ian Bryce, Alynda and I address a science class and video the proceedings. The topic? Water Divining!

The good news is that we have been given kind permission by Dick Smith and *A Current Affair* to use their videos. Dick had recorded the 1981 test as *James Randi in Aus-*

tralia, which was what was shown on *Great Mysteries*, but this posed some unique problems. It was recorded on 2 inch magnetic tape and after much searching by Barry Williams (another man with a white beard) and I, we discovered that the only company in Australia still with a machine capable of transcribing that old tape into a modern format

Stefan Sojka, is *The Great Water Divining Video*.

Although they probably did not realise it at the time, the 1981 Dick Smith/James Randi test was a moment of historical importance. It led directly to the formation of Australian Skeptics and also began our long association with the phenomenon of water divining, which, of all the paranormal claims that we have been asked to test, is by far the most

common. It is also probably the most widely believed of all such claims in Australia, though our tests can find no validity for it.

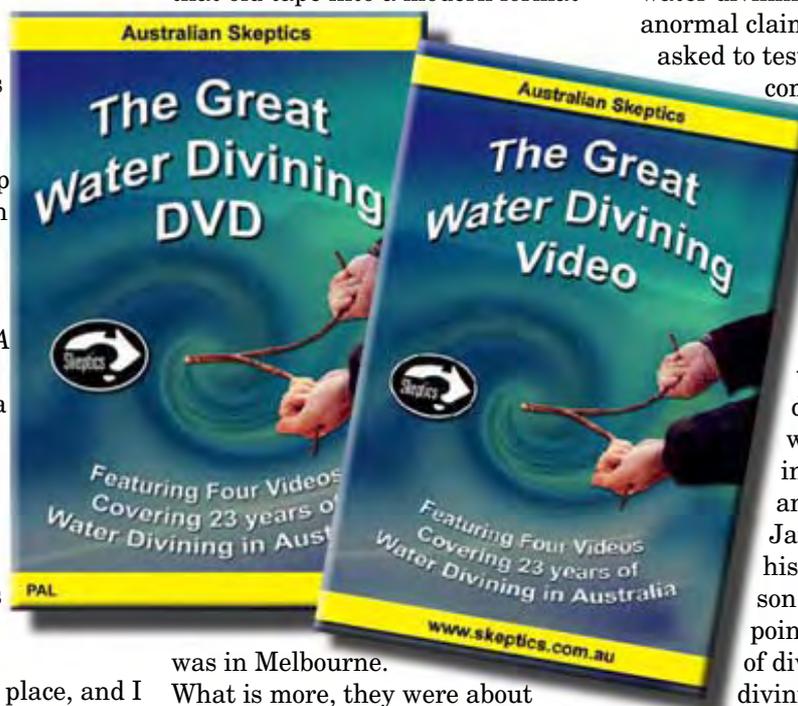
The video takes a fascinating look, over a period of 23 years, into the world of the water diviner. It is packed with observations and insights from diviners and Skeptics alike. See James Randi make one of his finest appeals to reason and the skeptical point of view. See all sorts of diviners using all sorts of divining rods in hopes of winning the tests. Hear some

amazing excuses for failure. See Dick Smith's changing hair style!

Richard Saunders

The Great Water Divining Video and DVD are now available directly from PO Box 268, Roseville 2069 or our on-line shop at www.skeptics.com.au.

At \$25 (Video) or \$35 (DVD - with extra features, including scene selection and photo albums), this is one collection no Skeptic can afford to miss.



was in Melbourne.

What is more, they were about to relocate and there was a possibility the machine would no longer be in use. We got the tape there in time (just), but then it was found that the original tape was beyond repair — disaster! However, I was able to digitally restore another copy, recorded by Barry as the program went to air all those years ago! The result, together with the Mitta documentary and an introduction including Crestwood High School and interviews with Dick Smith, Barry Williams, Bob Nixon and others, plus an original musical sound track by

