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D.W. Beaven on the Dangers of Alternative Medicine

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We have frequently discussed medical topics in these essays, examining various diseases as well as the treatments used to combat them. A multipart review of noninvasive medicine is one recent example.¹ Mostly, our discussions have been confined to conventional forms of medicine. On occasion, however, as in a 1978 discussion of chiropractic, we have examined specialties whose acceptance into the mainstream has been more controversial.²

This week's essay concerns a particularly controversial topic. In a paper reprinted from the *New Zealand Medical Journal*, Donald W. Beaven, Department of Medicine, Christchurch School of Medicine, University of Otago, New Zealand, discusses homeopathy and other forms of alternative therapy.³ Beaven's perspective as a New Zealander, and his opinions on his own country's vulnerability to the attractions of alternative medicine, make for a very interesting viewpoint on this subject.

I had the pleasure of visiting New Zealand some 20 years ago, when I found myself in Christchurch for a conference of the Australia-New Zealand Association for the Advancement of Science. Although, as Beaven allows, New Zealand may be small and somewhat remote, this certainly does not mean that important research is lacking there. After our two-part essay on lupus appeared last year,⁴ for example, I heard from Graham C. Liggins, Department of Obstetrics and Gynaecology, National Women's Hospital, University of Auckland,

New Zealand, regarding research on lupus anticoagulant. This autoantibody is found in some but not all persons with systemic lupus erythematosus; it can also be present in persons showing no other clinical evidence of the disease. In pregnant women the lupus anticoagulant has been associated with a high rate of fetal loss. As is pointed out by Liggins and colleague Wilhelm F. Lubbe, the condition is treatable, and many pregnancies have been successfully brought to term with medication.⁵ In a forthcoming follow-up to the lupus essay, we will discuss this research in greater detail.

Beaven's article represents our latest effort to select reprints that demonstrate the international character of science. Other examples include a recent opinion piece on animal rights from South Africa,⁶ a study on age and scholarly impact from Australia,⁷ and, a few years back, an eyewitness account by Tomáš Radil-Weiss, Institute of Physiology, Czechoslovak Academy of Sciences, Prague, of the medical and psychological hardships endured by concentration camp prisoners during World War II.⁸ In pursuing such geographical diversity, one often encounters particularly refreshing points of view—even on a topic as controversial as the debate regarding homeopathy and other alternative therapies.

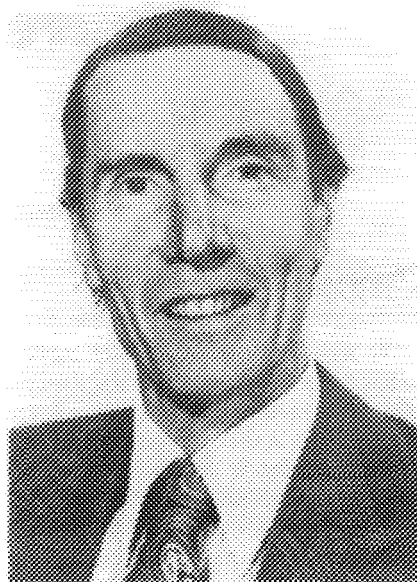
Homeopathic theory holds that disease can be cured by administering microdoses of substances that would cause symptoms of the disease in a healthy person. This form of medicine, which is practiced widely in Eu-

rope as well as in the US, was highly publicized two years ago during the controversy involving Jacques Benveniste, National Institute of Health and Medical Research, Clamart, France. Benveniste and colleagues reported results suggesting that a substance could remain biologically active at dilutions that precluded the existence of even a single molecule of the active ingredient. Their paper appeared in *Nature* in June 1988 and prompted an immediate furor.⁹ *Nature* itself played no small part in the affair, publishing the Benveniste paper with an accompanying "editorial reservation" and, in a report published in a subsequent issue, repudiating the results after its own investigation into the experiment. In March of last year we offered a follow-up on the episode, discussing Benveniste's citation record and presenting a bibliography of articles and correspondence on the matter.¹⁰

Beaven mentions the Benveniste affair in his paper, citing it as a "mortal blow to the scientific pretensions of homeopathy."³ Despite this, as he notes, homeopathy and other alternative therapies continue to thrive. One reason seems to involve the personal attention given the patient. As Beaven sees it, the skills of listening, observing, and treating the patient as a person seem to be in marked decline—except as practiced by alternative therapists. This failure of conventional primary care, at least in New Zealand, is cited as one of the factors contributing to the popularity of alternative medicine.

Beaven

A third-generation New Zealander, Beaven was born in 1924. He graduated from the School of Medicine, University of Otago, and, after working in a small New Zealand community, spent four years in postgraduate studies in Europe. While there he climbed mountains and participated in offshore small-yacht racing before return-



Donald W. Beaven

ing to New Zealand briefly as a clinical tutor for medical students at the University of Otago. Subsequently, Beaven spent two years at Harvard University, during what he refers to as "the great days of George Thorne's laboratory at the Peter Bent Brigham Hospital, 1958 to 1959."¹¹

As professor of medicine in Christchurch, which is situated in the middle of the South Island of New Zealand, Beaven has always been interested in the environment, health maintenance, and the empowerment of people to receive the best information about their own health. He has worked widely with national and international groups in the diabetes movement.

He retired as emeritus professor of medicine in December 1989 to become the chairman of the Canterbury Area Health Board. This allows him the opportunity to work with persons appointed by the Ministry of Health—as well as others elected by the local citizens—in evaluating and developing new concepts of health delivery.¹¹

Beaven has authored some 250 papers and seven books. He was nominated for the Commander of the British Empire in 1988 and is one of only two living persons in New Zealand to be an honorary fellow of the American College of Physicians. He notes that he has always been a great advocate of scientific studies, information transfers, and improved communication between New Zealand and many other countries.¹¹

The dispute between the conventional medical establishment and proponents of al-

ternative therapy is unlikely ever to be resolved. Beaven's views represent one side of a complex issue. But the improvements he recommends—the upgrading of science education, greater funding for research, increased public involvement in science and health—are universally applicable and would likely bring benefits to all concerned.

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REFERENCES

1. **Garfield E.** Noninvasive medicine. Parts 1-3. *Current Contents* (41):3-12, 10 October 1988; (42):3-11, 17 October 1988; (43):3-12, 24 October 1988.
2. -----, Chiropractic—still controversial after nearly 100 years. *Essays of an information scientist*. Philadelphia: ISI Press, 1980. Vol. 3. p. 529-37. (Reprinted from: *Current Contents* (27):5-13, 3 July 1978.)
3. **Beaven D W.** Alternative medicine a cruel hoax—your money and your life? *N. Z. Med. J.* 102:416-7, 1989.
4. **Garfield E.** Lupus. Parts 1 & 2. *Current Contents* (11):3-10, 13 March 1989; (12):3-8, 20 March 1989.
5. **Lubbe W F & Liggins G C.** Lupus anticoagulant and pregnancy. *Amer. J. Obstet. Gynecol.* 135:322-7, 1985.
6. **Garfield E.** Animal rights and wrongs: an ethical view of animal experimentation from Graham Mitchell. *Current Contents* (15):3-13, 9 April 1990.
7. -----, Is science only for the young? Ray Over examines age and impact in psychology journals. *Current Contents* (51-52):3-8, 18-25 December 1989.
8. -----, Remembering the Holocaust, part 1. *Essays of an information scientist: ghostwriting and other essays*. Philadelphia: ISI Press, 1986. Vol. 8. p. 255-64.
9. **Davenas E, Beauvais F, Amara J, Oberbaum M, Robinzon B, Mladonna A, Tedeschi A, Pomeranz B, Fortner P, Belon P, Sainte-Laudy J, Poitevin B & Benveniste J.** Human basophil degranulation triggered by very dilute antiserum against IgE. *Nature* 333:816-8, 1988.
10. **Garfield E.** Citation perspective on Jacques Benveniste—dew process at last? *Current Contents* (13):3-7, 27 March 1989.
11. **Beaven D W.** Personal communication. 7 March 1990.

VIEWPOINT

Alternative medicine a cruel hoax—your money and your life?

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This article considers the attractions and dangers of alternative medicine, particularly in the author's native New Zealand. The history of homeopathy is briefly reviewed. Failure to allocate resources to science education, basic research, and the interpersonal aspects of patient care has led to an uninformed, uncritical acceptance of alternative therapies within certain groups. Among the recommendations discussed is greater involvement on the part of the media and the public in matters of medicine and health.

Introduction

Sulphonamides, discovered in 1935, foreshadowed the demise of homeopathy. Since the second world war, we have seen an enormous revolution in the power and efficiency of pharmaceutical products. The rationing of streptomycin in the postwar years led to the brilliant concept of double blind clinical trials by the Medical Research Council in Great Britain, which eliminated tuberculosis perhaps 20 or 30 years earlier than would otherwise have been the case.¹

Amazing technological advances in pharmacology foster expectations of a cure in western societies. Alternative therapies are invoked when no instant cure is produced by medical care. There is also a real delay in the development of adequate audit and peer evaluation in this small, still neocolonial country. This is fostered by lack of commitment to scientific education in medicine.² These factors, coupled with the intense interest exhibited by the alternative therapist in the patient as a person who wants to sit and talk, have led to the resurgence of various alternative therapies in recent years.

The fundamental difference between orthodox and alternative methods is largely whether one accepts the inheritance of twentieth century scientific principles or whether one wishes, out of personal belief or unsatisfactory previous experiences, to rely solely on the placebo effect.³ Basic tenets of the scientific principle are the observation of natural phenomena and the testing of hypotheses in order to accurately evaluate the outcome. It is this opportunity to accurately measure which has so revolutionised medicine in the last 30 years. Indeed, the very success of orthodox scientific medicine in eliminating so many infectious diseases has led to an uncritical faith in instant cure.

Michael Baum, head of the clinical research group trial centre, King's College, London (1987), has said: "For the day to day purposes of evaluating scientific claims (in medicine) we still require much painstaking, laborious and, above all, honest, deductive research."⁴

New Zealanders, being distant from the centres of expansive and energetic scientific thought, are less prepared on a total per head basis to invest in research and development in medicine.

Dangers of alternative medicine

The real danger of alternative medicine is that it exploits the credibility of those often less fortunately endowed. Practitioners of alternative medicine, unfettered by regulatory standards or any established code of ethics, take advantage of minors and the credulous. Ethnic minorities, immigrants and younger people are among those who may not understand methods of access to orthodox medicine and are particularly vulnerable.

However the real dangers of alternative therapies such as naturopathy and homeopathy are that they neglect important symptoms, denying patients effective therapy. Practitioners of alternative therapies usually claim that scientific investigators, such as physiologists, biochemists, psychiatrists and physicians, have too little faith in mystical powers, magic and imagination.^{5,6}

A disturbing study by J. Leibrich, *In Search of Well Being—Exploratory Research into Complementary Therapies*,⁷ issued as a Department of Health special report, shows a major lack of critical scientific evaluation. Such quackery as iridology and colour therapy is described as "complementary therapy." There are many unscientific statements in this document indicating

that without a knowledge of basic mainstream twentieth century science and a degree of healthy scepticism, even official sources can be subverted by nonscientific concepts.

A United Kingdom study by S.J. Fulder and R.E. Munro⁸ indicated that there were 12 alternative medicine practitioners per 100,000 population of whom only 50% had secondary or tertiary education. Many had no qualifications and advantage was taken of young women who averaged 9.7 visits for a total cost of NZ\$257. A programme by the BBC in 1981 looked sympathetically at alternative concepts in health and medical care. J. Lloyd Fraser's *The Medicine Men*⁹ listed disorders treatable by homoeopathy and naturopathy as being colds, chest infections, dyspepsia, diarrhoea and vomiting, sprains and burns, backaches, insomnia, menstrual complaints, acne and eczema. The Consumers' Association, organised by nonmedical lay people in Great Britain, found that although most herbal remedies act as placebos and do very little harm, some substances are toxic and especially dangerous when taken with orthodox medicine to treat serious illnesses—thus providing an area of conflict, to the detriment of ordinary citizens: "The widespread unsupervised sale of herbal medicines leaves consumers largely unprotected, particularly from unlicensed remedies whose standard may vary. Promotion in shops often suggests health benefit, but the Medicines Act does not cover unlicensed remedies which lack adequate scrutiny."¹⁰

Homoeopathy—an archaic belief system

In general, the New Zealand school system lacks scepticism and tends to suppress curiosity and critical faculties. This country could thus be a fertile ground for quackery.¹¹

In the last seven years, only two controlled trials of homoeopathy in the English literature have been found on Medline search. D.T. Reilly and colleagues¹² provoked a spate of correspondence because of their erroneous conclusions. Their trial was described as the first ever double blind control of one placebo versus another for hayfever. Only 67% of subjects remained at the end of the five week trial, an extremely low percentage for any acceptable trial. After the treatment fluid had been diluted 30 times, no detectable material remained, and the authors concluded that "vital forces" had entered the solution from succussion!

Diagnosis must precede treatment and it is usually based on acceptable scientific studies with consensus views on the physiological and pathological principles underlying health and disease. Because diseases are beginning to be detected at the molecular biological level, some doctors now

find it increasingly difficult to keep pace with scientific discoveries.

The medical profession is now attempting to prevent many of the well known diseases by measuring the earliest biochemical abnormalities in the blood before structural changes take place. Some doctors attempt to reverse these by attention to holistic health. Much of the struggle in the health sciences is uphill because of the hostility of the wider environment. Media exploitation and the increasing peddling of junk foods are examples of financial gain being made at the expense of good nutrition. This tempts some medical practitioners to dabble in unscientific practices in homoeopathy, using electrical machines and other forms of quackery.^{13,14}

Originally, homoeopathy was the concept of a German doctor, Samuel Hahnemann (1755-1843), who, in 1796, reacted to the excessive blood letting, purgation, induced vomiting, metallic poisoning and the nonscientific approach of the then medical profession. He conceived the idea of placebo treatment, suggesting that "like cures like" and went on to dilute substances (thought to be responsible for symptoms) in such minute dilutions that no molecules remained. Thus by preventing the excesses of organised medicine of those days, he provided an alternative form of treatment.

Between 1821-43 Dr. Hahnemann became successful enough to add succussion and "dynamism" under the "umbrella" of homoeopathy; this gave way to the potency theory of "vitalism" (or the spirit of the person) entering the diluted solutions to give cures. During the cholera epidemic of the 1850s, the death rate at the London Homoeopathic Hospital was 18% whereas in many of the London teaching hospitals, where blood letting and purgation were practised, the death rate was two or three times greater. With modern, scientific knowledge, however, cholera can be successfully treated (in India, for instance) with few deaths, if any, occurring.

Today, homoeopathy, with modified Hahnemann principles, survives in the less scientific communities.^{15,16} It appears to be unduly prevalent in New Zealand where the organisation of subsidies for adequate primary care is deficient. Often, patients complain of not being able to sit and talk to someone sympathetic. Taxpayers' money is no longer used to repay the acquisition and practice of the skills of adequate observing, listening and touching—which skills now seem to be the preserve of practitioners of holistic medicine.

Last summer was enlivened by a homoeopathy scandal in France when it was revealed that a gov-

ernment sponsored laboratory employed two technicians from a firm which manufactured homeopathic remedies. There are two French commercial companies which produce "mother liquor"—substances which are diluted for homeopathy.

The results were reported by J. Benveniste and colleagues¹⁷ in *Nature*, suggesting an overthrow of such elementary physical principles as the Law of Mass Action. An investigatory team reported on 28 July 1988 that the experiments were "a delusion."¹⁸ This would seem to be a mortal blow to the scientific pretensions of homeopathy.

Comment

How then are organisations such as the New Zealand Committee for the Scientific Investigation of Claims of the Paranormal able to provide some assistance to consumers? They and members of the medical profession could promulgate a review similar to that in *Which?* (the consumers' magazine in Great Britain).

The New Zealand Commerce Act 1987 provides for prosecution against fraudulent advertisers and places the onus on those who offer herbal remedies, homeopathic and other products of doubtful efficacy,¹⁹ to demonstrate in a court of law scientific facts to support their claims. In many USA states such advertisers have their credentials checked against certificates they may hold²⁰ and lists of names are published annually.

The Beattie commission has suggested that science instruction in the school system be substantially upgraded, enabling those leaving at 18 or 19 years to have a more critical understanding of modern science.^{21,22}

To improve provision for clinical trials it will be necessary and certainly cost effective for the University Grants Committee to allocate more funds for the employment of more clinical pharmacologists in the New Zealand medical schools; their number is scandalously low when compared with countries of similar size such as those in Scandinavia.

In order that the medical profession can gain wider public support for an urgent increase in funding for research, more of the lay public must be involved in medical research organisations, audit committees and area health boards. That way, claims and counter claims from alternative medicine practitioners may be fully evaluated in the public setting.^{23,24}

To expose fraudulent practices, the media should have qualified medical reporters. Editors should ascertain that the fundamental principles of biomedicine are fully understood by their staff.

Good investigative journalism requires an informed view of all aspects of any argument. With more funds allocated for the appropriate investigation of charlatanism, prosecution under law would follow.

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References

1. Harris E L & Fitzgerald J D, eds. *The principles and practice of clinical trials*. Edinburgh, Scotland: Livingstone, 1970.
2. Beaven D W. Delivery of health care systems. (Beaven D W & Easton B, eds.) *The future of New Zealand medicine*. Christchurch, New Zealand: Peryer, 1974.
3. Mez-Mangold L. *A history of drugs*. Basle, Switzerland: Hoffman-La Roche, 1971.
4. Gowans J. *The Harveian oration: prospects for medical research*. London: Royal College of Physicians, 1987.
5. British Medical Association. Report on alternative medicine. *Lancet* 1:1223, 1986.
6. Board of Science and Education. The potency theory. *British Medical Association. Alternative therapy*. London: British Medical Association, 1986. p. 43.
7. Leibrich J, Hickling J & Pitt G. *In search of well being—exploratory research into complementary therapies*. Wellington, New Zealand: Department of Health, 1987. Special Report 76.
8. Fulter S J & Munro R E. Complementary medicine in the United Kingdom: patients, practitioners and consultations. *Lancet* 2:542-5, 1985.
9. Fraser J L. *The medicine men: a guide to natural medicine*. London: Thames Television International, 1981. (Television programme.)
10. Herbal medicines—safe and effective? *Drug Ther. Bull.* 24:97-100, 1986.
11. Clinical Oncology Group. New Zealand cancer patients and alternative medicine. *N. Z. Med. J.* 100:110-3, 1987.
12. Reilly D T, Taylor M, McSharry C & Aitchison T. Is homeopathy a placebo response? Controlled trial of homeopathic potency, with pollen in hayfever as model. *Lancet* 2:881-5, 1986.
13. A false phoenix. *Brit. Med. J.* 291:1744-5, 1985.
14. Alternative medicine. *Lancet* 2:116-7, 1986.
15. Jones L. Alternative therapies—a report on an inquiry by the British Medical Association. *Skeptical Inquirer* 12:63-9, 1987.
16. Morice A. Adulteration of homeopathic remedies. *Lancet* 1:635, 1987.
17. Davenez E, Beauvais F, Amara J, Oberbaum M, Robinson B, Miodenna A, Tedeschi A, Pomozraz B, Fortner P, Belen P, Salate-Landy J, Polteva B & Benveniste J. Human basophil degranulation triggered by very dilute antiserum against IgE. *Nature* 333:816-8, 1988.
18. Maddox J, Rosell J & Stewart W W. "High dilution" experiments a delusion. *Nature* 334:287-90, 1988.
19. Simon A, Worthen D & Mitas J A. An evaluation of iridology. *JAMA—J. Am. Med. Assn.* 242:1385-9, 1979.
20. National Council Against Health Fraud. NCAHF opposes accreditation of naturopathic education. *NCAHF* 11(4), 1988. (Newsletter.)
21. Trumbull G, Beronson. Alternative medicines and therapies and the DHSS. *J. Roy. Soc. Med.* 80:336-8, 1987.
22. O'Connor G. Personal aside, confidence trick. *Med. J. Australia* 147:456-9, 1987.
23. Pepper C. Quackery: the need for federal, state, and local response. *Skeptical Inquirer* 12:70-4, 1987.
24. Ruffenach G. The bitter pill of health fraud. *Nat. Bus. Rev.* (Wellington) 12:18, 1988.