Farewell to Chinese Medicine?

EDITOR'S NOTE: In 2006, Professor Gongyao Zhang, a professor of Philosophy from the Central South University in Changsha, China, published an article in *Medicine and Philosophy*. In the article entitled 'Farewell to Chinese Medicine', Professor Zhang said that Chinese medicine was neither scientific nor empirical. He used a number of examples to illustrate that some Chinese herbs were poisonous and to argue that some were used without any backing from evidence. In a later article published in 2009, he stated that Chinese medicine was fake science, subjective and lacking evidence. He argued that the health care systems of China should not include Chinese medicine.

Since 2006, there has been much debate on this topic in China.

AJACM received a letter from Associate Professor Zhou about Zhang's article and its impact in China. We invited two scholars, Dr Barry Butcher, an historian of Science and Professor Bin Xu, an academic of acupuncture, to respond to the article by Zhang. Each of them chose a particular angle for their response. We hope you will find these three articles stimulating.

The Future of Traditional Chinese Medicine

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ABSTRACT

China is the only country in the world where conventional Western medicine and traditional Chinese medicine (TCM) are practised alongside each other at every level of its healthcare system. TCM has a unique theoretical and practical approach to the treatment of disease, which includes herbal remedies, acupuncture, acupressure and massage, and moxibustion. As with most modalities of ethnic traditional medicines such as Ayurveda (traditional Indian medicine) and naturopathy, the theoretical and diagnostic basis of TCM cannot be fully explained in terms of Western medicine. In recent years, the Chinese government has significantly increased financial support for TCM in the hope that it is modernised and even integrated with Western medicine. However, there is argument that TCM should be abolished from the health care system in China. The future of TCM may be evidence-dependent, relying on more evidence of the effectiveness and safety of TCM treatments. Detailed pharmacology and toxicology research of all Chinese herbal medicine should also be conducted.

Traditional Chinese medicine (TCM), a pride and prize of the nation, is now faced with a tough challenge. A recent on-line petition letter written by Professor Gongyao Zhang from the Central South China University (Chansha, China) has caused a furore in China. In this letter, Professor Zhang strongly advised the central government of China to abolish TCM. Zhang strongly believes that the Chinese government needs to adopt a more practical medical system with all healthcare resources focused on evidence-based Western medicine. He criticised, 'TCM has no clear understanding of the human body, of the functions of medicines and their links to disease. It is more like a boat without a compass: it may reach the shore finally but it's all up to luck.' Thereafter, about 200 people signed their names in support of this petition. Dr Zhou-Zi Fang, a famous person who has revealed a number of academic misconducts of Chinese scientists at his popular website <www.xys.org>, claimed to completely agree with Zhang's idea.

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However, the Ministry of Health and the State Administration of TCM of China have refused this petition, 'The idea of abolishing TCM is a denial of science, an ignorance of Chinese history and dumping of traditional cultural heritage.' An official from the Ministry of Health of China, Mr Mao, has recently emphasised, 'Traditional Chinese medicine is an essential component of China's medical care system.' Many professional TCM practitioners in China also opposed the petition. Dr Yonghua Yang, a medical professor with the Human Academy of TCM, said '50% percent of his patients suffering from terminal cancer disease opt for traditional Chinese medicine treatments.' Some doctors of TCM said, 'While it is increasingly popular in the West, TCM is being criticised and ignored in China.' The traditional Chinese medical industry, with a total production value of nearly 81.026 billion yuan (about 10.125 billion US dollars), accounted for a quarter of China's overall medical industry in 2005. Mao said the Chinese government has helped develop traditional Chinese medicine and Western medicine equally in China.

China is the only country in the world where conventional Western medicine and TCM are practised alongside each other at every level of its healthcare system. TCM has a unique theoretical and practical approach to the treatment of disease, which includes herbal remedies, acupuncture, acupressure and massage, and moxibustion.[1] As with most modalities of ethnic traditional medicines such as homeopathy, Ayurveda and naturopathy, the theoretical and diagnostic basis of TCM cannot be explained in terms of Western medicine.

In recent years, the Chinese government has significantly increased financial support for TCM in the hope that it is modernised and even integrated with Western medicine.[2] China will make an effort to standardise 500 traditional Chinese medicine remedies and procedures over the next five years. The standardisation work will cover remedies, procedures, traditional medical terms and acupuncture standards, according to the State Administration of TCM (SATCM). The lack of widely accepted standards has long been a hurdle for TCM in being recognised and used in other countries. The new standards will help improve the quality of traditional medicines and make them more acceptable to other people. China currently has approximately 3000 traditional medical hospitals that dispensed medical treatment to nearly 300 million people in 2006.

Chinese herbal medicines may provide important and unique therapies for some diseases that result from a disrupted network in the body (eg. cancer and diabetes).[3] For these diseases, a single drug that targets a single protein molecule may not provide satisfactory clinical efficacy.[3] Most TCM practitioners now agree that TCM must be evidence-based, thus randomised controlled trials of common treatments are needed to establish the effectiveness and safety of treatments. Detailed pharmacology and toxicology research of all Chinese herbal medicine should also be conducted. As for experts engaged in the research and development of traditional Chinese medicine, they are unanimously optimistic about the future of TCM. They consider the recent challenge to traditional Chinese medicine is a result of a lack of confidence as well as misinterpretation. Dr Yuansheng Tan, a young TCM doctor said that since traditional Chinese medicine has survived challenges even more severe than this, he was sure that it will be able to cope with the latest one. At a time like this, voices like his help to make the public hopeful again about the future of traditional Chinese medicine.

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Some Thoughts on Medicine as a Science – A Layperson's Contribution to the Controversy Over TCM

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Almost fifteen years ago the late and much lamented historian of medicine Roy Porter published a typically provocative article in the Times Literary Supplement entitled *A professional malaise: how medicine became the prisoner of its success*.[1] Porter's claim was that as Western medicine had become more scientific and increasingly able to improve health and control disease and life threatening processes such as childbirth, so it had become a site of social concern, scepticism and academic attack. New medical discoveries in the second half of the twentieth century, ranging from antibiotics to immunosuppressant drugs had built on nineteenth century discoveries such as the germ theory and the role of parasite vectors. To these could be added genetic engineering and stem cell technologies promising to overcome previously incurable diseases such as Parkinson's disease and various forms of cancer. As Porter made clear, we in the West now live in a world remarkably free of life threatening illnesses, and despite the threat posed by new diseases such as HIV/AIDS we could confidently expect that the application of science would continue to guard the health of the people. So why then the attacks and criticism mentioned above? Porter himself pointed the way to what is almost certainly the correct explanation:

> Today, with mission accomplished, medicine's triumphs are dissolving in disorientation. Medicine has led to vastly inflated expectations, which the public has swallowed. Yet as these expectations grow unlimited, they become unfulfillable. The task facing medicine in the twenty-first century will be to redefine its limits even as it extends its capacities.[2]

Fifteen years on and the crisis in Western scientific medicine is as prominent as ever in both the popular press and academic discourse; stem cell research, the overuse of drugs, high hospital mortality rates, the rise of antibiotically immune 'superbugs' and a plethora of public complaints about medical malpractice and bureaucratic stuff-ups are just the start. Porter was right – for all its triumphs, Western medicine is suffering from a malaise.

I was brought back to Porter's article recently when asked if I would contribute something to the current debate over the scientific basis of traditional Chinese medicine (TCM).[3] Now let me make it clear right away that I am not a practitioner or consumer of TCM (though I did once have a large malamute dog whose spinal paralysis was much helped by acupuncture… but that's another story). I am instead a trained professionally employed historian of science who has at various times studied the philosophy of science and has taught courses with grandiose titles such as 'Medicine, Healing and Society' where I have sought to introduce students to the idea that there are other ways of seeing the worlds of sickness and health than that presented to us as part of the scientific culture in which we in the West supposedly live, breathe and have our being. It is, then, from the perspective of an historian that I approach this current debate over TCM, and it is with the history of Western medicine that I will begin in order to pose questions about the scientific nature of the various disciplines that constitute its modern form. My approach will be selective and (hopefully) provocative but nonetheless will, I think, be illuminating.

The history of Western medicine has been traditionally presented as part of the post-enlightenment agenda of progress from superstition and darkness to science and light. While the crudest of such histories are now recognised as being simplistic, and indeed often historically inaccurate, there remains in the literature a tendency to a Whiggish interpretation of medicine's history, at least in the Western world. This is particularly true of its story in the nineteenth century, where it is generally seen as taking off as a scientific endeavour as part of the professionalisation of science generally. The success of William Budd and John Snow in tracing the epidemiology of diseases such as typhoid and cholera,[3] coupled with Edward Jenner's earlier demonstration of the value of vaccination for small pox[4] were practical steps to improved public health but had limited scientific underpinning – they were the result of practical actions in the main – most notably Jenner's successful inoculation of the eight-year-old James Phipps and Snow's removal of the Broad Street pump as a means of convincing authorities that the 'cause' of cholera could be sourced to a specific water supply.[5] Gradual acceptance of the germ theory after 1860 led to antiseptics of course – though it was not known at the time how these worked to kill the germs themselves. Improvements in technology allowed for better surgical procedures, the outcomes of which were much improved with the arrival of anaesthetics in the 1840s. Again, the actions of anaesthetics

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were not explainable by contemporary science – they worked and in medicine that was all that mattered.

So where is the science in Western scientific medicine? Experiment, observation and theorising are certainly accepted as part of the process, but unlike the hard sciences, the biological basis of medicine means that there is what sociologists of science would define as a degree of 'slop' to be accounted for. Genes may be the basis of all biological organisms but, unlike the laws of physics, the laws of life are remarkably wobbly; medicine deals with complex individuals and while certain processes can be applied to populations with every confidence of a successful outcome – immunisation perhaps being the most obvious example – at other times either individual morphological, physiological and even anatomical factors must be considered, or dependence on fairly crude statistical analysis be relied on. Examples of the first case would be individual response to drugs, the role of allergies and so on. The second case might include the need for large epidemiological studies (which often show minute differences in outcomes). Thus, while general laws of life can be drawn up, and students taught how the body functions, for instance, in the final analysis the medical practitioner in the West as much as in the East must take account of the individual patient's situation.

Without question the greatest improvement in the health of the populace came through improvements in hygiene; the non-medico bureaucrat Edwin Chadwick's obsessive pursuit of means to provide clean water and remove excreta from the burgeoning industrialised cities led to the creation of legislative control over water quality and the construction of hundreds of miles of underground sewerage systems.[4] The application of science? Yes, the scientific theory of miasmas, the then dominant idea that disease was caused in some way through the filth and odour all too evident on the streets of London, Paris, New York and so on. Miasmas – not germs, as Chadwick and almost all his supporters were very keen to stress. On the basis of this 'failed' theory, more lives have been saved and more lives improved than almost all other advances attributed to medicine. And it should be noted here that one could apply the same 'failed' theory today in those places around the globe where water supply and the removal of human waste would reduce mortality from the 'diseases of filth' that are still among the biggest killers of young children.

Note that I am not here engaging in a process of bashing Western medicine; on the contrary I accept its spectacular successes and its scientific claims – even those it proposed in the nineteenth century which we now know to be incorrect. What I am suggesting – and this will not be news to anyone with even a passing knowledge of recent developments in the philosophy and sociology of science – is that science itself is a dynamic system of changing theories and practices. It is all very well to intone that science is based on observation, theory, experiment and repeatability and that if we take heed of all these we will end up with 'objective' knowledge of the world. Well, perhaps we might – for now. Tomorrow's 'objective knowledge' might be very different. Even in the hardest of hard sciences, physics, there have been occasions when the great men have got it spectacularly wrong, the best example being Lord Kelvin, the doyen of British nineteenth century physicists telling students in Baltimore in 1904 that all the major discoveries in physics had been made and that their job would simply be mopping up around the edges. In 1905 a post office clerk in Switzerland published something about relativity and the rest – including much of Kelvin's life work – is, as they say, history.

Few philosophers of science would now claim that there is a scientific method suitable for application to all branches of the sciences; and the 'softer' the science, be it psychology, biology or medicine (let alone any of the social sciences) the less likely are we to find a 'one size fits all' methodology. From Francis Bacon in the seventeenth century to Karl Popper and Thomas Kuhn in the twentieth, there have been heroic attempts to somehow fence off science from all other knowledge systems in order to protect its supposedly peculiar epistemological status.[4] None have convinced all, though all have their adherents. In the end we have to take our own counsel as to what we see as comprising science as opposed to non- or pseudo-science; a scary thought perhaps but we can console ourselves with the point made by the radical sociologist of science Harry Collins; insofar as any knowledge system can be said to be rational then science is probably the best of the lot.[6]

So where does this leave the current debate over the scientific status of TCM? Frankly, I'm not sure it really matters but because the question has raised so much heat (if not much light) it might be worth addressing, if only briefly here; and as an outsider to TCM perhaps I can do so, shall we say, more objectively than some of those working from within the discipline. So here goes.

Medicine both East and West has traditionally been seen as an art; diagnosis, prognosis and treatment, have until very recently been as much a matter of subjective experience on the part of the practitioner and patient in the West as they remain today in TCM. I would suggest that one might interpret the move away from the subjective to the objective mode in Western medicine as a prime cause of the malaise identified by Roy Porter. The sufferer is now a site of disease rather than a being with an individual personality and a social role to play. The word holistic gets thrown around with careless abandon too often these days and can become a catchcry for every oddball system of medicine, but TCM can rightfully claim to be holistic in the proper sense of the word – it takes the whole person seriously and does not reduce him or her to a diagnostic entity.

The high costs associated with modern Western medicine and the pressure for cost saving via improved throughput at the level of the general practitioner mean that any real interaction between the doctor and the patient is likely to be facile at best. Something here to be learned from the East perhaps?

Critics of TCM rightfully draw attention to its failures; wrong diagnosis, incorrect treatment, overdosing and poisoning and so on. Critics of Western medicine rightfully draw attention to its failures; wrong diagnosis, incorrect treatment, overdosing and poisoning and so on. Mud-slinging is easy, whoever is doing it and in the area of medicine it's not hard to make it stick. Where would the commercial television stations be without their current affairs programs being able to run stories of appalling medical mess-ups?

Critics of TCM also seem to have a strong case in the area of accountability, by which I don't mean at an individual practitioner level only, but as an entire system of medical knowledge. I have already hinted above that I don't really think it matters whether the underlying theory is objectively provable, but I do think it matters that the potential patients in TCM can have some way of knowing that the treatment they are going to receive is likely to be efficacious. Given the long history of TCM and its development of herbal, drug and other treatment regimes, this should not pose a problem for researchers keen to test its efficacy. This may or may not be done through the application of Western scientific techniques, depending on what it is that is actually being assessed, but if we take the overall thrust to be something akin to the evidence based approach of Western medicine, then it ought to be possible to construct a methodology suitable to analyse TCM (and bear in mind here that evidence based medicine is the product of Archie Cochrane's fertile mind in post-war Britain; it is not something intrinsic to the long history of Western medicine per se).

Let me finish on a personal note. Five years ago I was diagnosed with type 2 diabetes and subjected to some solemn lecturing by my GP on the subject of what I could and could not now do; what I should eat, what exercise I should undertake and so on. In the intervening period I have read widely on the subject of diabetes and so far as possible I have kept up with the most recent research and, falteringly, tried to follow some sort of lifestyle that improves my chances of living a reasonable life. What have I learned? That I should look for low glycaemic index (GI) foods – and there are many to choose from on the supermarket shelves so I have been assiduous in seeking them out – but wait, there's more, for it turns out according to current research that low GI foods are no good without accompanying fibre…so my assiduity in that area has been misplaced. I have learned not to eat potatoes – well, actually, recent research suggests I can, and the same goes for bananas. I learnt originally that I should eat six small meals a day rather than the traditional three; now it seems I should go back to three because the six meals a day formula applies only to type 1 diabetics. Fructose was OK five years ago; now it's as deadly as any other form of sugar, but then sugar is not so deadly apparently as it was five years ago, fats seem to be the villain just as much now. What I am trying to say here is that scientific medicine can be problematic in certain circumstances; new knowledge overturns old knowledge, to the dismay of the sufferer, and presumably to the medical researcher and GP. I doubt TCM would fare any worse or better in this respect.

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Farewell to Professor Zhang Gongyao's Ideals

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A National debate

In China, arguments between proponents of traditional Chinese medicine and critics who wish it would give way to biomedicine are not new. However, the publication of Professor Zhang Gongyao's article,[1] essentially repeating the same argument, has caused a flurry of debate. The author even launched an online petition to do away with Chinese medicine.

In the two years since the article was published in 2006, more than two hundred and twenty papers and reports published in China offered a response to Zhang's assertions. A quick search of the internet resulted in more than two hundred and forty thousand hits and more than ten books have been published in this area of discussion. It is indeed rare to have so much literature with regard to the retention or abolition of TCM within such a short time in history. Zhang's paper has led to a new wave of discussion.

Among all the discussion papers, four articles by Zhang Boli, a member of the Chinese Academy of Engineering[2–5] and other scholars essentially refute Zhang's arguments from a range of perspectives. They put the view that TCM has made a great contribution to the proliferation and prosperity of Chinese nation and the development of world civilization. They also suggested that it is narrow-minded, irrational and even self-belittling to suggest that TCM be abolished. Many other scholars also joined the discussions offering views from differing perspectives, including history of science, scientific methods, local knowledge, and intrinsic problems of TCM. None of the scholars agreed with Professor Zhang's argument. Of the ten books published, all but one defended TCM. The one exception is the Fang Zhouzi which essentially outlines a litany of criticisms of TCM.

Not long after the quick responses to Zhang's critique of TCM, he was quoted in the Xiaoxiang Morning News saying, 'I have never talked about the abolishment of Traditional Chinese Medicine'….'My so-called goodbye means that it's advisable for Traditional Chinese Medicine to return to civil society; we should make it as our emergency, or last choice, instead of removing it completely'.[6] However in another of Zhang's polemics published in his blog he invokes Confucius as a way of engendering support for his assertions, arguing that Confucius did not believe in shamans,[7] the implication being that TCM is not far from being a form of witchcraft. The article has been viewed more than 16 000 times and commented on by about 2600 visitors during 2006–2009. More than 90% percent of the visitors were opposed to Zhang's views.

During a speech entitled 'Why do I Claim to Remove Traditional Chinese Medicine from Chinese Health Care System'[8] at the second International Conference of Oriental Medicine Present and Future in Seoul in January 2009, Professor Zhang cited a study by Changchun University of TCM, saying that by 2008 the population that blindly believed in the effectiveness of TCM had declined from 88% to 58%. We were unable to access Zhang's cited source for these statistics. On the contrary, we found that a survey conducted in January 2007 reported that in Jilin province in the northeast of China, 58% of the people surveyed believed that TCM was very effective and could treat the root syndrome; 25% thought that TCM was effective for chronic diseases but not for acute diseases.[9] These data display a completely different picture from Zhang's assertions.

As an acupuncture educator and researcher, I haven't felt the significant impact of these discussions, whether it is positive or negative, on my clinical practice in China. TCM hasn't suffered much on account of the 'farewell' incident. The general feeling of TCM doctors in China is that the public need for TCM treatment has increased rather than decreased.

TCM Research in China (2006 – 2020)

Furthermore, research in TCM is valued highly by the central government and the Chinese government is devoting substantial amounts of money to further the promotion of TCM in China till 2020. For instance, the 'TCM Theory Special Program' established in 2005 has invested RMB 70 million each year. Currently there are four acupuncture projects underway: 'Acupuncture Specific Feature Research' with an investment of RMB 14 million; 'Acupuncture Anaesthesia Research' with RMB 23 million; 'Research of Moxibustion Basic Principles and Application' with RMB 11 million; and 'Meridians and Points Therapeutic Effects Research'.

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The Eleventh Five-Year Plan has also funded many TCM research programs. One of these projects is 'Discovery of New Drugs'. It includes transformation of Chinese herbal medicine species, research into Chinese herbal medicine standards, and discovery and evaluation techniques of new Chinese herbal medicine and a total of RMB 500 million has already been invested. In addition to these nationally funded programs there are also many programs funded at the provincial level. Some are also privately funded.

The State Administration of TCM has commenced feasibility studies on the application of TCM key laboratories and the construction of research-based TCM hospitals. In 2008, the central government published ten items of 'Standardized Manipulations of Acupuncture and Moxibustion'. In the same year, the Chinese Association of Acupuncture-Moxibustion completed four programs including 'Research Plan of the Advantages of Acupuncture-Moxibustion' and 'Clinical Practice Guidelines for Acupuncture and Moxibustion'. The latter involved clinical practice guidelines for the following five diseases: depression, herpes zoster, dysphagia of apoplexy, migraine and Bell's palsy.

The growth of TCM also impacts on education. In recent years, the People's Medical Publishing House has published forty 'Teaching Materials for National Higher TCM University's Post-Graduate Education'. These texts include basic, classical and clinical aspects of TCM and Chinese herbal medicine.

An increasing number of students have enrolled in TCM programs and at least five TCM universities have more than ten thousand students, including Nanjing, Chengdu, Guangzhou, Tianjin and Heilongjiang Universities of TCM.

In China, support by government funding authorities and private enterprise is substantial. TCM is healthy and developing rapidly in China. The overwhelming response to Zhang's assertions suggest that his opinions fail to accord with educators, researchers, practitioners, government funding authorities and critically, the consumers of TCM – the general public. One positive consequence of Zhang's opinion could be that the TCM community extend itself and continue to demonstrate the value of TCM in China and in the rest of the world.

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