Acupuncture in Australia - a review of its current position

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Historical basis of acupuncture

The use of counterirritation techniques is as old as recorded history. The use of sharpened bone and stone implements has been recorded in diverse geographical locations and amongst widely separated cultures, including the Bantus in South Africa the Singhalese in Sri Lanka, the Eskimos in Alaska as well as in China, Northern Europe and South America. In China, stone needles dating back to 1700 BC have been found at an archaeological site in Anyan, in the Honan province.

The modern day practice of acupuncture has evolved from Traditional Chinese Medicine (TCM) which according to legend commenced with Fu Hsi (B.C.2953) who is attributed with the invention of the eight Diagrams made up of broken and unbroken lines used as the basis of the I-Ching which acts as a pictorial representation of the Chinese universalistic philosophy. The elaboration of Chinese medicine was continued by the emperor Shen Nung (died 2698 B.C.) who is venerated as the father of agriculture and is reputed to have undertaken systematic empirical observation of all herbs by tasting each one in order to acquaint himself with their value.

By far the most renowned of the legendary rulers of ancient China however was Huang Ti, also known as the Yellow Emperor. Huang Ti is said to have reigned from 2696 - 2598 BC and Su-ma Ch'ien, the great historian of the second century BC, began his *Historical Records* with an account of Huang Ti, whom he defined as the founder of Chinese civilisation and the first humane ruler of the empire. Huang Ti has been accredited with the invention of wheeled vehicles, armour, ships, pottery, and other useful appliances, as well the invention of the art of writing. He is also regarded as the author of the Canon of Internal Medicine called the *Nei Ching Su Wen* (The Yellow Emperors Classic of Internal Medicine) which is said to be the oldest extant medical book in the world and remains the theoretical foundation for Chinese medicine to this day. As Ilza Veith states in the introduction to her translation of the *Nei Ching Su Wen* "The *Nei Ching,* the Classic of Internal Medicine, attributed to Huang Ti, the Yellow Emperor, is indeed a very important if not *the* most important early Chinese medical book, particularly its first part, Su *Wen,* "Familiar Conversations" between the Emperor and his physician Ch'i Po. It is important because it develops in a lucid and attractive way a theory of man in health and disease and a theory of medicine. It does this in very much the same way as did the physicians of India who wrote the classic books of Yajutvedic medicine, or the Hippocratic physicians of Greece; that is by using the philosophical concepts of the time and picturing man as a microcosm that reflects the macrocosm of the universe. The theory expounded in the *Nei Ching Su Wen* has remained the dominating theory of Chinese indigenous medicine to the present day. " [22]

Despite the authorship of the *Nei Ching Su Wen* being attributed to the Huang Ti, its antiquity has been questioned and most historians now date its origins to around the fourth century BC. It was at this time that the foundations of both Eastern and Western thought were first committed to writing, with Socrates, Aristotle and Plato laying the foundation for Western thought, and Lao Tzu, Confucius, and Gautama Buddha providing the basis for the development of Eastern thought. It was also around this time that the foundations of Eastern and Western medicine were being forged, with the formation of the Hippocratic writings *(Corpus Hippocraticum)* in the West, and the canonisation of the *Nei Ching Su Wen* in the East. These medical works are significant as they mark the beginnings of modern medicine and are the first treatises to view disease as arising from interactions between the environment and constitutional factors, rather than the actions of gods or supernatural forces.

The *Nei Ching Su Wen,* which is still used today as the theoretical basis for Traditional Chinese Medicine, is unusual for a general medical text in that it is devoted primarily to preventative measures. Rather than defining different disease entities and attempting to treat illness, the ancient Chinese physicians emphasised the healthy state which was defined as being "at one with the Tao", and having defined a state of health, it was the aim of Chinese physicians to detect any deviation from this state and correct it before disease could develop.

Placing great emphasis on the pulse, Chinese physicians aimed to detect premorbid conditions before they developed into overt pathology and since disease was seen to arise out of disequilibrium, the basis of cure was in restoring harmony. The duty of the traditional Chinese doctor was thus to instruct the patient how to remain well. Accordingly the ancient physicians were paid only while their patients remained healthy, and if a patient was to die unexpectedly the physician responsible was required to hang a lighted lantern outside his practice for a full month so that other patients would be made aware of his shortcomings.[8] This attitude is expressed in the *Nei Ching* with the following passage;

"The superior physician helps before the early budding of the disease. The inferior physician begins to help when the disease has already developed; he helps

when destruction has set in, and since his help comes when the disease has already developed, it is said of him that he is ignorant." [22]

The Eastern attitude of preventive medicine lies in stark contrast to that of the Hippocratic tradition. The Hippocratic physicians practised in a market economy where physicians were sought only after disease had become established and a physician's worth was judged on his ability to make accurate predictions, even if powerless to alter an adverse outlook. The Hippocratic tradition thus concentrated on defining specific disease entities rather than abstract notions of health, for it was only by defining the evolution of clinical syndromes that specific prognostic features could be recognised and the likely course of disease, and success of specific interventions be determined.

It has been suggested by some scholars that the complementary nature of Eastern and Western medicine has arisen through their respective use of language.[15] Eastern thought, which places much emphasis on the concept of flow and on symbolic representations of natural phenomena, is based on an intuitive language which uses ideograms and symbolic constructs. In contrast, Western thought emphasises the process of systematically observing nature and deriving rational explanations, and is based on rational languages (the epitome of which is mathematics), which utilise a phonetic alphabet and logical construction. Furthermore Chinese thought has remained fairly consistent throughout the ages, as has the Chinese language (even though pronunciation differs in different regions), whereas Western thought has undergone numerous additions, corrections and modifications as it has been translated into the dominant language of the time.

The development of Eastern medicine has taken an opposite but complementary approach to that of Western medicine. The Eastern way of thinking is holistic, and involves nonlinear logic and causal relationships rather than the reductionist theories and linear causality of Western science. These different approaches to medical knowledge can be considered to be parallels of what are commonly called the holistic and reductionist world views and although these views appear opposite, neither view can be considered more correct or more useful than the other. Reductionism and holism are merely different (or complementary) approaches, and both views are necessary when considering the many complexities of health and disease. [3]

The Practice of Acupuncture

The practice of acupuncture usually involves needles, but may also involve low level laser, moxibustion, cupping, transcutaneous electrical neural stimulation (TENS), trigger point therapy, point injection therapy and dorsal column stimulation. [2] In Australia at present, acupuncture is offered by a variety of providers including doctors, dentists, veterinary surgeons, physiotherapists, chiropractors, and various lay practitioners. Of these groups however, medical practitioners are the only ones trained to assess patients in a primary health care setting. Registered medical practitioners have extensive training in the basic sciences including anatomy, physiology, pharmacology, microbiology, pathology and immunology as well as in clinical diagnosis, methods and procedures and, when skilled in the use of acupuncture, medical practitioners are able to offer acupuncture as a treatment modality in the full context of diagnosis, treatment and management. [21]

Acupuncture is a procedure involving both diagnosis and treatment and like any other procedure, there are associated risks if used without appropriate skills and knowledge. Risks associated with acupuncture include transmission of infections such as HIV and Hepatitis B and C, etc. from contaminated needles, injury to vital structures by misguided needle placement, and the masking of symptoms preventing early detection and diagnosis. While the risk of infection can be easily prevented through the use of disposable needles or low level laser, the risk of injury can only be prevented through adequate training in anatomy and pathology. Without such training potentially serious complications may arise and death due to acupuncture has occurred in Australia at the hands of a non-medically qualified acupuncturist.

The health system in Australia is such that is not appropriate for acupuncture to be used as a complete form of medicine and thus the practice of acupuncture should be considered a 'complementary', rather than an 'alternative' form of medicine. However, while medical practitioners are the only professional group trained to act as primary health care providers and coordinate and manage all aspects of patient care, there are other registered health professionals (eg. physiotherapists) who may possess sufficient training to use acupuncture as an available modality and identify circumstances when other professional medical services are required. In this position non-medical acupuncturists should be encouraged to work in conjunction with the medical profession rather than in opposition to it, and should thus adopt the role of 'therapists' rather than 'doctors', as they are not subject to the theoretical, ethical, or legal strictures required of medical practitioners, nor are they bound by the medical board's advertising guidelines. Furthermore in adopting the role of primary health care providers non-medical acupuncturists may put patients at risk if they withdraw medications indiscriminately, mask symptoms without performing investigations to determine a medical diagnosis, or discourage patients attending registered medical practitioners and receiving preventative screening measures and immunisations.

Education of acupuncturists

In Australia there are no agreed standards for the practice of acupuncture or the training of acupuncturists.

At present the extent to which general practitioners practice acupuncture appears to be extremely varied ranging from only a few consultations a month to full time practice. However, as there are no educational or legal requirements necessary for medical graduates to practice acupuncture, it is left up to each individual doctor to determine, and seek out, the level of education and expertise he/she deems adequate. In the absence of accepted standards the use of acupuncture should be on the basis of 'buyer beware' and acupuncturists should be encouraged to display their qualifications

The Australian Medical Acupuncture Society (AMAS) which is affiliated with the Australian Medical Association (AMA), was formed in 1973 as a professional society for doctors with an interest in medical acupuncture. The AMAS aims to set a basic standard for medical acupuncturists by establishing a code of ethics and by setting a common curriculum for the education of acupuncturists . The society is also actively involved with other pacific Nations, namely USA, Canada and New Zealand as well as the UK to standardise the teaching of acupuncture in the Pan-Pacific region and world-wide. In order to maintain a high standard of acupuncture skill and knowledge amongst its members, the AMAS through its state branches organises frequent clinical meetings, seminars and lectures. Often these seminars are conducted by eminent overseas medical acupuncturists and these meetings are generally approved for 2 points per hour Category-A by the RACGP quality assurance (QA) and continuing education (CE) committee.

In addition to educational events, the AMAS conducts an independent fellowship exam (FAMAS), similar in format to other fellowship exams conducted by the Royal Colleges. The FAMAS exam consists of two parts; a written (part 1) and a combined oral/written (part 2). To sit for the part 1 of the FAMAS exam requires candidates to have accrued at least 100 hours of accredited time, while to be eligible to sit for part 2, candidates must have completed their part 1 exam and have accumulated a total of 250 hours of accredited time. Accredited time may be accrued through clinical experience arranged either through acupuncture clinics at large teaching hospitals, such as at the Alfred Hospital and PANCH in Victoria, or through the AMAS preceptor system whereby students can sit in on sessions with experienced practitioners. Time may also be credited for attending Australian or international teaching programs or conferences, and for providing written case commentaries and case documentation. [21]

In 1989 the NH&MRC conducted a working party to review the current state of acupuncture practice and education in Australia.[12] In its report, after praising the members of the AMAS and the Societies fellowship exam the working party went on to express concerns that;

"submissions from lay acupuncture training organisations do not indicate a content of training of standard equivalent to that of medical practitioners in the relevant subjects (anatomy, microbiology, diagnosis etc), nor has there been any independent evaluation by suitably qualified authorities in any of these disciplines of the course content and quality or the standards achieved by students."

The NH&MRC working party also suggested that;

"when acupuncture courses have been accredited it has been by administrative bodies and not by authorities able to evaluate curriculum content. Furthermore when acupuncture courses have been adopted by tertiary education institutions it has been by institutions with expertise in certain disciplines (eg. nursing, social sciences) but not in those disciplines considered by the Working party as critical to the safe and informed practice of acupuncture such as anatomy, microbiology, clinical diagnosis, therapeutics and clinical trial research. Moreover, there is no evidence that teachers of acupuncture have had adequate training in these disciplines and most significantly, there is no evidence that they have a capacity to critically evaluate existing or new knowledge in their discipline in order to determine its validity."

The AMAS fellowship is acknowledged world-wide for setting a high standard of professional knowledge and competency and fellows of the society are held in high regard by other medical colleagues both in Australia and internationally. At present however, there are no legal requirements for doctors to obtain their fellowship or other postgraduate qualifications and less than 200 doctors have attained their fellowship of the society. The AMAS however maintains that doctors need formal training to practise acupuncture effectively. To this end the AMAS suggests that medical acupuncture needs to be formally integrated into university medical undergraduate curricula, as well as becoming an acknowledged area of special interest with established minimum qualifications for postgraduates. The AMAS also agrees with the NH&MRC in advising patients to seek acupuncture treatments from suitably trained medical acupuncturists.

Uses of acupuncture

In general practice acupuncture has proven to be a cheap, safe and effective therapy, the main use of which is in treatment of pain and addictions as well as being helpful in systemic conditions. Acupuncture can be used either alone, in conjunction with conventional therapy, or as an alternative to pharmacotherapy when patients cannot tolerate certain medications. As many of the conditions treated by acupuncture are painful musculoskeletal conditions, acupuncture is often able to prevent the long term use of NSAIDS and steroids and thus minimise the side effects and cost of treating

these conditions. The relative safety and efficacy of acupuncture compared to other treatment modalities suggests that in many conditions acupuncture should be used as a 'first line therapy', thus keeping with the Hippocratic ethic of "first do no harm".

In addition to treating pain, acupuncture has been shown to be effective in systemic conditions as well as in treating addictions including addictions to narcotics, alcohol, tobacco and minor tranquillisers. Acupuncture has also been shown to be effective for surgical analgesia, [20] however its efficacy is such that there would appear no justification for the introduction of acupuncture anaesthesia in competition with orthodox anaesthetic techniques. Acupuncture analgesia however, may have a role when conventional anaesthesia is either contraindicated or unavailable and thus when discussing acupuncture anaesthesia the NH&MRC [12] advises that;

"it may be appropriate to allow such a modality, at the request of a registered medical practitioner skilled in its use, for consumers who request it."

World Health Organisation List of Indications for Acupuncture

Neurological disorders
Headache and migraine
Trigeminal neuralgia
Facial paralysis
Peripheral neuropathy
Post poliomyelitis paralysis
Meniere's syndrome
Neurogenic bladder
Nocturnal enuresis
Intercostal neuralgia

Musculoskeletal disorders
Acute/chronic muscle strains. Frozen shoulder, Tennis elbow, Lumbar pain and sciatica, Degenerative arthritis, Inflammatory polyarthritis.

Mouth disorders
Toothache
Post extraction pain
Gingivitis
Acute or chronic pharyngitis

Eye disorders
Acute conjunctivitis
Central retinitis
Myopia in children
Uncomplicated cataract

Gastrointestinal disorders
Oesophageal and cardia spasm
Hiccough
Acute and chronic gastritis
Gastric hyperacidity
Uncomplicated duodenal ulcer
Acute and chronic colitis
Acute bacterial dysentery
Constipation and Diarrhoea
Paralytic ileus

Respiratory system
Acute bronchitis
Bronchial asthma

Upper respiratory tract
Acute sinusitis
Acute rhinitis
Common cold
Acute tonsillitis

Cost of Acupuncture

At present the acupuncture is covered by a Medicare rebate under item 173 which includes:

"Attendance at which acupuncture is performed by a medical practitioner by application of stimuli on or through the surface of the skin by any means, including any consultation on the same occasion and any other attendance on the same day related to the condition for which the acupuncture was performed." [9]

The current Medicare rebate for item 173 ($18.30) is less than that offered for a standard consultation for a vocationally registered practitioner under item 23 ($20.40). The existing rebate system thus acts as a disincentive for doctors to practise acupuncture. However, despite this inequity, in 1992 a Health Insurance Commission study revealed that over 3000 GPs (nearly 25%) claimed rebates for acupuncture. Furthermore this study showed that the costs to medicare were much lower for doctors who had at least 50% of their income derived from acupuncture. Compared to other GPs, these doctors had one fifth as many referrals and utilised one quarter of the expenditure in radiology and pathology, as well as presumably having less prescribing.

Acupuncture is a procedure and, like other procedural items, it should be eligible for accompanying consultation items. This is especially important with regards to initial visits which usually require a long or prolonged consultation. Under the current system it would be better for doctors to give free acupuncture and only charge for a medical consultation, however under item 173 this is not legal. Many doctors who bulk-bill are thus forced to bring their patient back to commence acupuncture treatment on a subsequent date in order to receive fair recompense.

The practice of acupuncture represents an area of special interest requiring similar training and expertise as minor surgery or psychotherapy. Furthermore as well as additional training the practice of acupuncture requires more surgery space and more time per patient

than conventional consultations. Medicare rebates should reflect these increased demands and thus the AMAS suggest that rebates for acupuncture be at least equal to that of a standard consultation and that for initial consultations it should be permitted to attach a consultation item with acupuncture in accordance with the AMA schedule of fees. The AMAS also suggest that Fellows of the AMAS should be recognised as Vocationally Registered and thus attract a higher rebate for their services in accordance with Fellows of the RACGP. Such moves would encourage more doctors to consider using acupuncture in their practice and would act as a financial incentive for doctors to undertake advanced training in acupuncture and thus achieve a high level of clinical competency and efficacy.

Modern Theories of Acupuncture

Many theories have been proposed to explain the mechanism of action of acupuncture. These range from the theory of Traditional Chinese Medicine (TCM) couched in the terms of Chinese cosmology, to modern neuro-humoral theories invoking complex nerve pathways and neurotransmitter release, as well as theories invoking bioelectric, biomagnetic and embryological phenomena. [3, 5] So far however, all Western theories on acupuncture are incomplete and while TCM theory claims to be a complete one, its concepts have not yet been integrated into the Western scientific framework thus rendering it incomplete from a scientific viewpoint. In 1989 after investigating the scientific basis of acupuncture the executive committee of the National Health and Medical Research Council concluded that; "the relief of pain by acupuncture can be explained in terms of neurophysiological mechanisms. These mechanisms depend on an intact and functioning peripheral and central nervous system, can be induced without using the full range of traditional acupuncture points and are similar in mechanisms associated with narcotic analgesia. In addition to a neurophysiological effect on pain, acupuncture has a powerful placebo effect."[12]

While the neurophysiological basis of acupuncture is now well established on the basis of endorphin and other neurotransmitter involvement, the diffuse noxious inhibitory control system (DNIC) and the gate control theory [3], the existence of acupuncture points is often questioned, for no consistent structural correlates for them have been identified. It appears however that acupuncture points may be functional, rather than structural entities, and this is confirmed by the finding that acupuncture points can be defined electrically as points of low electrical resistance.[1,10,18] The functional nature of acupuncture points is also evident from the fact that there is an extremely high correlation between acupuncture points and musculoskeletal trigger points which are points of focal muscle tenderness that can be identified using a pressure algometer or palpation, and which are found to have a local twitch response to mechanical stimulation. [11,16]

While functional correlates of acupuncture points have been shown to exist, sceptics often point out that the acupuncture meridians have not been objectively identified. Most acupuncturists however would maintain that acupuncture meridians are a conceptual tool, such as the lines of latitude and longitude on the earth, and thus while they are useful for navigating a specific territory, to search for anatomical correlates of the meridians would make as much sense as digging in the ground to look for the equator. Recently however there has been the suggestion of objectively defining the meridians using techniques capable of imaging functional, rather than structural relationships. Studies utilising radioactive tracers have shown that certain tracers appear to migrate along the acupuncture meridians [6] and electrical impedance studies have shown significantly lower impedance along the acupuncture meridians compared to surrounding skin. [17]

There are many different clinical trials on acupuncture in the medical literature, however while the gold standard for clinical trial research is the double-blinded, randomised, placebo-controlled, cross-over trial with defined outcome criteria and sufficient numbers of patients to minimise type 1 and type 2 errors, none of the trials on acupuncture are able to meet this standard. [23] Clinical trials on acupuncture have many inherent methodological problems and published trials generally fall into four different groups; 1) Anecdotal or uncontrolled studies; 2) trials using a no-treatment control group; 3) trials using an alternative treatment control group; 4) placebo controlled trials which may either use a nonacupuncture placebo group such as bogus TENS, or a 'sham acupuncture' placebo group where needles are placed in points considered to be 'non-acupuncture points'. [14, 19]

The methodological problems associated with clinical trials of acupuncture are numerous. These include the fact that in order to have reproducible results a standardised treatment approach is needed. Acupuncture however is considered a 'holistic' therapy, and most acupuncturists tailor their treatments to the needs of individual patients and may even use different points as treatment progresses. Furthermore due to the nature of the treatment, double blind conditions are virtually impossible to achieve, as to perform true acupuncture requires that the therapist know the nature of the treatment. Other methodological problems include the choice of control groups, agreement as to the location of 'true' acupuncture points, the need for large numbers of patients in order to detect a statistical differences between groups, and the requirement of having objective yet multi dimensional measures of outcome.[7,14, 19]

A review of randomised trials on acupuncture [7] has shown that successful response rates vary from 30%

for placebo groups, 50% for sham acupuncture groups, and 70% for true acupuncture groups. This review suggests that sham acupuncture cannot be considered an adequate placebo, but rather a 'poor form of acupuncture' and that the use of a sham acupuncture group requires large numbers of subjects to be able to detect a significant difference between the groups (130 patients are needed in each arm of a trial for a p value of 0.05). As most trials do not employ such large numbers of subjects the authors were forced to conclude that

"the majority of published reports have a very low power for distinguishing statistical differences between treatment groups" [and hence] "one cannot necessarily conclude from trials which produce statistically non-significant results that acupuncture (when compared with placebo for example) is ineffective."

It is generally acknowledged amongst practitioners that the main mode of action of acupuncture is through stimulating homeostasis. This no doubt involves neurally and chemically mediated phenomena. However while the neurophysiological basis for acupuncture is well established, acupuncture has also been shown to decrease red blood cell viscosity, white cell count, carotid arterial pressure and peripheral vascular resistance, increase free fatty acids, gamma and beta globulin levels, the phagocytic index of white blood cells and the blood glucose level as well as enhancing the release of serotonin, histamine and kinin components. Acupuncture also affects the autonomic nervous system and skin temperature as well as electroencephalograph, electrocardiograph and electromyograph readings. Acupuncture has also been shown to produces multiple effects on defence and immune mechanisms including raising the titre of a variety of specific and nonspecific immune substances such as bacteriolysins, agglutins, opsonins, antibodies and complement components.[21] The above findings are indeed significant however while these findings can be seen to provide evidence suggesting *how* acupuncture works they do not explain *why* acupuncture works.

Traditional theories of acupuncture

Traditional Chinese Medical theory provides a comprehensive explanation of why acupuncture works. This theory however is couched in the conceptual language of Chinese cosmology and philosophy [4] which employs such concepts as; *"Tao"* (infinite order), *"Chi"* (life energy), *"Wusieng"* (five evolutive phases), *"ko"* and *"sheng"* cycles (constructive and destructive cycles) and *" Yin"* and *"Yang"* (complementary opposites). When expressed in Chinese terminology it is difficult for Western minds to appreciate their significance, yet these concepts can all be found to have parallels in Western science.

The concept of "Tao" can be compared to the mathematical concept of absolute infinity which, like the Tao, is seen as inherently incomprehensible. The concept of "Chi" which the Chinese consider as a form of 'vital energy' can be compared to the concept of 'information' in thermodynamics which is also considered as a form of energy, and which is measures in terms of 'bits', or joules per degree kelvin. The Chinese view of disease aetiology whereby diseases are seen to arise from a blockage in the flow of Chi can thus be seen to parallel the second law of thermodynamics which describes a tendency towards disorder in an isolated system.

Further parallels between Eastern and Western concepts can be found as the 'ko' and 'sheng' cycles (constructive and destructive cycles) can be seen to parallel the concepts of evolution and entropy, and the concept of "Wusieng" or '5 evolutive phases' can be compared to the five phases information passes through during computation, which consists of a program, language, interface, processing and long term memory. Finally the concept of Yin and Yang can be seen to parallel the quantum theoretical concept of complementarity. In fact Niels Bohr, one of the founders of quantum theory included the Yin/Yang insignia in his family coat of arms along with the statement that "opposites are complementary" .

While the Chinese were not greatly interested in gross anatomy or precise structural relationships, they did place much emphasis on functional ones and this is evident from the emphasis placed on taking the pulse. The reading of the pulse plays a prominent role in both the Eastern and Western traditions, however whereas in the West information from the pulse is now analysed scientifically using specialised equipment such as the ECG, in the East pulse diagnosis (sphygmology) was developed into a great art which was used by the Chinese to place a persons state of being into a theoretical and cosmological context.[15].

It is claimed that the art of pulse diagnosis can detect a vast range of pathological and premorbid conditions, however to become competent in this art requires many years of intensive practical training and the subtleties involved have been compared to a orchestra conductor listening to a symphony and detecting when a particular string on a particular instrument is out of tune. Thus while few present day practitioners would claim to be expert in pulse diagnosis, the art of sphygmology remains an important aspect of both Chinese medical theory and practice.

Much uncertainty remains as to the mechanism of action of acupuncture. However it is important to acknowledge that it is not necessary to know the mechanism of action of a therapy in order to use it effectively. This is in fact the case with most modern pharmacotherapeutic agents, anaesthetics and even some surgical procedures. Although it may not be necessary to have a precise knowledge of the therapeutic action of a particular therapy, it is necessary

to establish that a proposed intervention is without harmful side effects, and is at least as safe, or safer than, other modes of therapy for any given condition. It is also necessary to determine whether there are any potential long term side effects or adverse reactions on subsequent generations. Any therapeutic modality should also be relatively consistent in that treatment responses can be predicted within prescribed limits thus permitting the rational selection of therapies for clinical use.

Acupuncture fulfils all of these criteria and thus deserves a respected place in modern day clinical decision making and practice. Furthermore in elucidating the mechanisms of action of acupuncture new insights into human pathophysiology may be expected as this involves the integration of many diverse areas of knowledge. It should be remembered that five years before endorphins were discovered in the West, the Chinese had performed experiments that had shown the existence of these neurochemicals as a result of performing research into acupuncture.

When investigating the theoretical basis of acupuncture much remains to be learned from scientific enquiries. However there is also much valuable knowledge contained in the ancient Chinese texts and traditional practices. When attempting to translate traditional Chinese practices into a modern day scientific setting however there are many pitfalls, and as the renowned historian Joseph Needham states;

"In evaluating acupuncture through the works of representatives of the present day practitioners in the western World some reserve should be exercised for the following reasons; (a) very few of them have had reliable linguistic access to the voluminous Chinese sources of many different periods, (b) it is often not quite clear how far their training has given them direct continuity with the living Chinese clinical traditions, (c) the history in their works is liable to be minimal or unscholarly, (d) their familiarity of theory are generally very inadequate, (e) they tend to adopt a too simplistic assimilation of classical Chinese disease entities to those of modern western medicine, (f) the cardinal importance of sphygmology [pulse diagnosis] in Chinese differential diagnosis is almost ignored, and (g) their works are naturally so much influenced by modern western concepts of disease aetiology and pathology that they seem not to practice the classical Chinese methods of holistic classification and diagnosis. Not everyone with a modern Western medical training can immediately perform all the traditional-Chinese therapeutic feats. Pulse diagnosis, for example, as well as a very organistic psychosomatic approach, is a fundamental feature of this traditional art, which after all depends on much subtle theorising, not of course in the modern style, but not nonsense either." [13]

The future of Acupuncture

Acupuncture has over the past 5000 years proven to be a safe and effective therapy which is currently used by nearly 25% of Australian GPs. Much research however remains to be done at both a basic science and clinical level to come to an understanding of its mechanisms of action yet this is only possible if people are trained in both acupuncture and research methodology. Important steps toward this end have recently been made with the recognition of the academic basis of general practice, involving the training of GPs in research methods, and the introduction of formal training in acupuncture to medical undergraduates. These measures insure that in future there will be a growing number of well trained people able to perform high quality research into the scientific basis of acupuncture.

It is generally recognised that just as there are two sides to the brain, there are two approaches to knowledge; rational and intuitive, subjective and objective, holism and reductionism. Neither of these views however has a more privileged position than the other and a balanced world view requires input from both. The approaches of Eastern and Western medicine represent two such views and thus by combining these views a more balanced and coherent medicine results. Thus, just as Western-trained medical acupuncturists are able to combine the best elements of both Eastern and Western medicine in their practice, modern research has been able to blend ancient wisdom with modern technology to produce new effective therapies. Already there are hundreds of thousands of patients world-wide who have benefited from the new techniques of acupuncture anaesthesia, TENS, laser acupuncture, auricular therapy, and electro acupuncture, and as research continues these techniques will no doubt be refined and perhaps others developed. The ability to integrate Eastern and Western ideas has been commented upon by Capra who suggests;

"We are heading towards a new synthesis, a new naturalism. Perhaps we will eventually be able to combine the Western tradition, with its emphasis on experimentation and quantitative formulations, with a tradition such as the Chinese one, with its view of a spontaneous, self organising world." [3]

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