‘Knowing the Why but not the How’: A Dilemma in Contemporary Chinese Medicine

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Abstract
This paper explores how modernisation of Chinese medicine has transformed Chinese medicine doctors, as they like to say, from ‘knowing the how but not the why’ to ‘knowing the why but not the how.’ Through unfolding the multi-faceted connotations and associations of these proverbial formulas in the Chinese medicine field, we show the inevitable dilemma troubling many Chinese medicine doctors, who feel they are stuck between the institutional demands of catching up with the latest scientific knowledge and continuing the eminently effective features of Chinese medicine in practice. The crisis of ‘knowing the why but not the how’ demonstrates that, despite rather thoroughgoing scientisation, there are continuing conflicts between the modes of knowing characteristic of Chinese medicine and modern science, which result from the assumed hierarchy of knowing.

Keywords
Chinese Medicine, traditional knowledge, scientisation

Introduction
In parallel with the recent global movement of complementary and alternative medicine (CAM) in the United States and Europe, ever more generous funding for scientific research on Chinese medicine is leading Chinese medicine doctors in China to accelerate the production of scientifically-validated knowledge.¹ These activities not only engage them in serious dialogue with the international CAM community, but also create a higher profile of legitimacy for the practice of Chinese medicine. Such strategies and recent successes might begin to undermine the static, ‘traditional’ image that has long been projected

¹ In contrast with the American medical system, there is no strict division between biomedical M.D.s and ‘doctors of Oriental Medicine’ in China. Chinese medicine doctors in general hospitals and research institutes not only have sufficient Western medicine training and licenses to practice Western medicine, but also compete with Western medicine doctors for TCM scientific research funds. For detailed descriptions of the indistinct boundaries between TCM and WM in China, see Scheid 2002 and Karchmer 2005.
as a contrast to modern Western medicine. However, after several decades of all-out ‘scientisation’, the institutional privileging of Western scientific knowledge in Chinese medicine research has produced a deepening predicament among Chinese medicine experts. Borrowing diagnostic terms from Chinese medicine, they often describe this situation as an ‘internal deficiency’ or more specifically ‘a real shortfall within an apparent flourishing’.

In keeping with this anxiety, a recent controversial book entitled Contemplating Chinese Medicine (思考中医 sikao zhongyi) by Liu Lihong provoked contentious debates about contemporary education in Chinese medicine in China. Liu argues against the common belief that the only reliable value to be found in Chinese medicine must come from modern scientific interpretations and laboratory research; instead he argues that the scientific and philosophical values of Chinese medicine are embedded in the field’s canonical texts. He further claims that students and young doctors today have lost their confidence in Chinese medicine as a result of alienation from its classical roots in the process of increasing scientific assessment and standardisation of the field.² His concerns echo those of many senior doctors whose reflections on the effects of modernisation are quite poignant.

In interviews with Chinese medicine professors and senior doctors in China between 2000 and 2002,³ specialists repeatedly invoked a language of crisis in response to the question ‘What are the problems facing today’s Chinese medicine field?’ The most prominent concern is a decline in the quality of Chinese medical skills with respect to their clinical practice and in-depth knowledge of traditional medicine. Several senior doctors rhetorically phrased the problem as ‘knowing the why but not the how’ (zhi qi suo yi ran er bu zhi qi ran, 知其所以然而不知其然). In this expression ‘the why’ refers to modern scientific knowledge, especially of causes such as the sites of lesions, and ‘the how’ refers to the forms of existence and styles of practice of Chinese medicine, e.g. in clinical traditions and textual sources.

The comment sounds rather spurious at first because it is a reversal of and sarcastic play upon a common proverb ‘knowing the how but not the why’ (zhi qi ran er bu zhi qi suo yi ran 知其然而不知其所以然). The latter, original form of the proverb refers to dangerously superficial knowledge, mere technique without insight. For Chinese medicine doctors nowadays, however, reversing the terms of the proverb hints at a somber critique of the privileged global-scientific approach to evaluating, modernising, and developing

² Liu 2003.
³ Author Jun Wang interviewed about 50 Chinese medicine doctors from major Chinese medicine colleges and hospitals of Beijing, Shanghai, Nanjing, Chengdu, Chongqing, and Changsha during her ethnographic research in China.
Chinese medicine. The contrast between the two proverbs is very poignant, raising the most fundamental questions in Chinese medicine.

To practitioners, especially those who are aware of the textual tradition and have experience of using Chinese medicine effectively, the question of what kind of relationship Chinese medicine should maintain with Western medicine is an open and conflicted one. They are understandably troubled by the need to translate their expertise into a global idiom of bioscience and positivist materialism. Can the efficacy of Chinese medicine, they ask, only ultimately be accounted for with reference to the universals of biomedical anatomy, physiology, and pathology? Or can metaphysical assumptions derived from a classical literature—we will discuss some below—still provide a plausible foundation for a practice in which they have much confidence?

This paper provides some of the historical and social background that would be needed to fully perceive the investment Chinese medical interviewees had in this piece of wordplay. By considering the changing relation between a clinical ‘how’ and a scientific ‘why’, one can explore some of the widest dilemmas of modernisation underlying Chinese medical work in China today. Although the relationship between the philosophical foundations of any medical practice and its clinical and practical expressions is not simple, i.e. the how and the why of any medicine are never perfectly attuned, for Chinese medicine, the problem of philosophical foundations is more complex. The belief that modern doctors ‘know the why’ has resulted from the assumption of a hierarchy of knowledge, i.e. ‘knowing the why’ is more important and inclusive than ‘knowing the how’, as well as from the competitive relationship that has developed over the past century or more between Chinese classical philosophy and modern science.

Long before modern science posed questions of why anything is the way it is, classical Chinese metaphysics, deploying concepts like Dao (the Way), yin and yang, and the five phases, had laid the foundations of Chinese medicine. This metaphysical logic was in place by the Han dynasty (206 BCE to 220 CE)

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4 It has been noted by a number of authors that medical practice in China has been significantly hybrid for a very long time, with ‘Chinese medicine’ incorporating European elements even long before the nineteenth century introduction of missionary biomedicine and the rise of a nationalist ideology of scientism in the early twentieth century (Karchmer 2005, Heinrich 2007, Scheid 2002). We also note, however, that the contemporary social life of medicine is characterised by a great commitment on the part of experts of many orientations to maintaining a clear distinction between ‘Chinese medicine’ and ‘Western medicine.’ Lay people also appear to be quite comfortable with a continuing distinction between the two types of practice, even when they mix, in any given treatment, elements from both. This continuing appearance of two contrasting systems of medical care in China is important in part because of the philosophical discomforts we document in this discussion.
and provided a conceptual language that informed many indigenous Chinese sciences and technologies. Classical cosmology was intertwined—sometimes only implicitly—with clinical practice in all medical work. It was only comparatively recently, really in the twentieth century, that this long-standing language of explanation encountered the crisis of legitimacy that now forms the context of Chinese medicine practice.

Of course, the lament of elders that their trainees and followers are ignorant and clumsy, as compared, perhaps, with their own teachers, is not a new phenomenon. In some classical writing, all of Chinese history has been one long decline from a golden age of perfect attunement between nature and human (non)action. But new conditions of transmitting and institutionalising traditional Chinese medicine (TCM) suggest that medical craft is indeed changing; it is little wonder that some feel this is not for the better. Textbooks and the training provided for medical interns, for example, have radically standardised and reified Chinese medical knowledge: correspondence tables linking symptoms to herbal drugs, for example, have banished both debate and creativity in the world of formulary (fangjixue 方剂学); and an infinite number of possible names for pathological conditions have been simplified to nosological tables of disease-like illness patterns (zhenghou 证候). For newly standardised patterns, moreover, there are entailed treatment protocols. These developments have unified and systematised the Chinese medical field, but a senior generation of physicians, not trained quite so systematically, worries that younger doctors are mere technicians rather than creative and responsive healers. Both of us know some rather uncreative senior doctors and some very erudite and inspired younger ones; but the concern about a declining clinical craft still makes sense.

Since the 1950s, and very intensively since the 1990s, modern scientific models and research methodologies have been deployed strategically by major TCM policy makers, i.e. the Ministry of Science and Technology, the Ministry of Health, and the State Administration of Chinese Medicine. In the past two decades, under a mandate of ‘supporting the modernity of Chinese medicine through technology innovation,’ textbooks and medical school training both teach and presume the knowledge produced in laboratory and clinical research in order to ‘buttress Chinese medicine in its clinical practice and to propose new theoretical frameworks for the known techniques of the field’. In the Guideline for the New Development of Chinese Medicine 2006–2020, Chinese medicine is expected to become one of the breakthroughs as Chinese science and technology heading forturns toward the world.5 It seems as if

5 The guideline, ‘中医药创新发展规划纲要 2006–2020’ in Chinese, was jointly released
'Chinese medical science', a new name that has been used frequently in official accounts, will gradually replace the old name 'traditional Chinese medicine' in the near future. In the eyes of Chinese medicine's most experienced clinicians, the results of this form of development are perhaps inevitable, but nevertheless far from desirable.

**Historical and cultural connotations of the ‘how’ and the ‘why’**

The origin of the proverb, *knowing the how but not the why*, is linked with a third century (Jin dynasty) scholar named Tao Yuanming (陶渊明). As a Daoist, he advocated that learning (in the form of reading) could only be rewarding and enjoyable if one was not bothering to understand the why. On the face of it this seems an odd argument. Why would a serious thinker like Tao Yuanming specifically eschew knowing why the world appears as it is? Was he too lazy or stupid to inquire into the hidden depths of knowledge? Or is it that ‘the why’ is constitutively inexplicable and self-effacing? According to early Chinese cosmogonic views attributed to Laozi (Lao-tse, about the sixth century BCE), dao, the inexhaustible generative underlying dynamic of being, itself invisible and inexplicable non-being (*wu* 无), produces all beings (*wanwu* 万物) and populates the universe. To embrace Dao is to live with relative non-action (*wuwei* 无为), or to live in accord with spontaneous, uncaused natural process. Thus for a Daoist like Tao Yuanming, knowing the *how* but not caring to know the *why* bespoke a philosophical premise that set radical limitations on language, logic, and reasoning. These limitations on knowledge and what could be spoken of, accompanied by a lively and articulate interest in the forms and dynamics of the manifest world (the *wanwu*), became important foundations for much of Chinese thought and especially, as we note below, its indigenous sciences. There are many concepts similar to Dao, still in quite common use in Chinese, that are considered essentially difficult to define or exhaustively explain; examples are *qi* (气, breath, energy, configurative force), *shen* (神 vitality, spirit, consciousness), *xin* (心 heart-mind), and *taiji jin* (太极劲 soft internal force that results in great strength). This philosophical silence about important processes extends to some feelings as well. It is often observed in the West that Chinese seem reluctant to give voice to deep feelings, such as love. Whether or not this is true, Chinese people often find

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Western ways of expressing emotions unnatural and pretentious. As Laozi asserted: 'The way that can be spoken of is not the constant way, the name that can be named is not the constant name.'

The notion of Dao not only inspired countless poets and artists, but also had a tremendous influence in the ancient Chinese sciences, especially Chinese medicine. The idea of living in harmonious accord with natural processes is considered by Chinese medicine doctors to be the highest achievement of well-being. Because the world and human beings are constantly changing following the underlying mutuality of yin and yang (which is the expression of the dynamic Dao), we need not inquire into the causes of things, only learn to perceive and work with the correlations of their forms. In many kinds of traditional Chinese learning, an intuitive comprehension of the patterns of natural dynamics, like the understanding one might have of music, has been seen as the key to grasp the pivot (ji) of the correlations that give form to both the healthy and the ill body. Freiberg, for example, has explained the value of intuitive knowing in The Daoist Mind: 'Intuitional understanding is more reliable than knowledge, for the latter serves at best to complement the former, while at worst it confuses the mind with artificial distinctions and reifications.'

This is not to say that in the course of 2000 years of medical practice and lavish record-keeping Chinese doctors failed to systematise, rationalise, or theorise their work. In fact during the several millennia in which Chinese medicine developed as an indigenous East Asian sphere of knowledge, lively debates about proper techniques and the reasons for their desirability produced a vast archive of systematic medical thought that is still drawn on today. But Sean Lei has noted that an intuitive way of knowing came to be particularly re-valued in the practice of Chinese medicine in the twentieth century when Chinese medicine has to emphasize its own special subtlety against the literal-mindedness of Western medicine. An experiential approach to understanding and practice in Chinese medicine has also been noted by Farquhar, who found that practitioners in the 1980s referred to adept clinical skill with the term linghuo (灵活), meaning flexible, sensitive, or responsive. She explains

6 Translation: Lau 1963.
8 Freiberg 1975, pp. 304.
9 Note, however, that until the modern period beginning in the nineteenth century medicine was not often set apart as a particular sphere of expertise. Its historical development cannot be readily separated either from the history of other elite forms of self-cultivation or from very diverse modes of popular healing. See Sivin and Lloyd 2003.
why flexibility and responsiveness were more valued in Chinese medical practice at the time than rigorous explanations:

Chinese medical action is thus intrinsically temporal and activist; intervention is required in every pathological yinyang situation as the illness develops, and the state of play must often be reevaluated in the expectation that new excesses and deficiencies will develop. . . . For Chinese medicine contingency is not what threatens a course of treatment but rather what shapes it.11

These observations are consistent with Chinese science historian Liao Yuqun’s argument that the key to understanding Chinese medicine is to understand the application of the mind, yi 意.12 Yi, both a noun and a verb in Chinese, means ‘in the mind of’, ‘the mind’, or even ‘to think or entertain ideas’. Proverbs using the term and allied notions, such as ‘the heart-mind responds and the consciousness understands’ (xinling shenhui 心领神会) and ‘medicine is mind’ (yizhe yi ye 医者，意也), are often invoked by Chinese medicine doctors to justify the judgments they make in practice.

The earliest Chinese medicine text that talks about medicine and the mind is the Guoyu Zhuan (郭玉传).13 Guoyu was an accomplished imperial doctor (active around the second century CE) who adapted the proverb ‘medicine is mind’ to speak of the great degree of intuition involved in practicing medicine. He said:

To speak about what medicine is, it is the mind. The networks of the skin (cou li 脉理) are extremely delicate and subtle (zhiwei 至微). Therefore, [a good acupuncturist] follows the qi [perceptible through the needle at the acupoint] and applies sensitive techniques.14

This interesting and very classical statement suggests that for Chinese medicine doctors, presence of mind involves a kind of participation in the flow of qi, not only in the body of the doctor but in that of the patient to whom he is connected by way of acupuncture needles. Perhaps, then, mind is the point at which language meets its limit in approaching the vicissitudes of the body and disease. Shigehisa Kuriyama, in his comparison of ancient Chinese and Greek pulse perceptions, has argued that the two cultures diverged into a world of perceptions and a world of facts. Chinese doctors expressed their perception

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12 Liao 2006.
14 Couli (脉理) here stands for the qi-responsiveness of the body as a whole. Cou literally means the invisible spaces of the skin and li the visible fine lines of the skin. The original Chinese text is: ‘医之为言，意也。脉理至微，随气用巧。’
of the pulse through figurative and allegorical language, which posed tremendous challenges and doubts for a modern and European culture that valued literalness and clarity in language:

Once speaking is conceived as the expression of ideas in the mind, then the hunger for transparency becomes irresistible—though it remains ever insatiable, though we cannot peer into other minds. Does your idea of ‘undulating’ correspond to mine? We simply cannot know.\(^{15}\)

Kuriyama’s discussion reminds us of some assumptions that underlie many modern critiques. A Chinese medical approach is often criticised as an ‘overimaginative’ and ‘unreliable’ form of knowledge when it is reflected in the mirror of a modern approach committed to objective, clear, representational knowledge. But Chinese medicine professionals know beyond any doubt that their medical practices are effective, even if they are difficult to standardise and explain in biomedical language. It is the widely acknowledged usefulness of Chinese medicine therapies, especially for the management of chronic illnesses, that has not only helped this ‘traditional’ field grow and flourish in the People’s Republic of China but has begun to make it globally important as part of the CAM movement.

The defeats of imperial China by the Western colonial powers in the end of nineteenth and early twentieth centuries prompted the acceptance of Western social and political values in the first half of the twentieth century. Under this context, and as a result of the rapid rise in influence of Western science and medicine in China, Chinese medicine was often denounced as unscientific and its theory was at times characterised as pure conjecture. In regard to the profound influence of Western science, and the rise of ideological ‘scientism’ in China between 1900 and 1950, D. W. Y. Kwok insightfully observed: ‘Scientism exhibits first, a particular understanding of the power of science, second, a critique of tradition, and, third, a form of substitute religion.’\(^{16}\) Modern scientific philosophies and methodologies have been privileged throughout the twentieth century, seen as indisputable doctrines by Chinese intellectuals, most of whom believed that only scientific beliefs and practices could address the dire difficulties facing Chinese society in the early twentieth century. In searching for an integrated, competitive, and modern identity, Chinese reformers in the early-to-mid-twentieth century advocated the abandonment of traditional Chinese world-views along with the old imperial social-political structures. Chinese medical views of the world and the human body, seen at best as based on abstract, speculative, and inductive

\(^{15}\) Kuriyama 1999, p. 81.
\(^{16}\) Kwok 1965, p. 30.
methods, were held to be essentially incongruous with modern scientific views; these were, in their turn, held to be based on concrete, quantitative, and deductive methods. The attitudes Kwok calls ‘scientism’ presume that only scientific methods (laboratory experimentation, clinical trials, statistical analysis, and so on) can produce true knowledge. Therefore, ‘unscientific’ became a derisive label that Chinese medicine has had to bear since the beginning of the twentieth century. However, even for the most virulent scientific critics of Chinese medicine, its usually benign clinical effects remain undeniable.

It is the theoretical framework of Chinese medicine, however, that has been the target of the most destructive and skeptical criticisms. Under these conditions, then, knowing the how but not the why gradually became a negative designation, losing touch with its Daoist philosophical roots and coming to refer to a dangerously superficial level of knowing in contrast with profound structural and rational knowing. Scientific critics readily used this proverb to refer to those who had not yet been enlightened by science. Despite philosophically sophisticated resistance on the part of Chinese medicine doctors, then, it came to be widely believed that although they could treat patients effectively in the clinic, they didn’t know why their methods worked or did not work.

Acupuncture is a good example: this technique combines a startling effectiveness, sometimes an ability to eliminate pain or other discomforts instantly, with an enduring puzzle for scientific evaluators. The circulation tracks posited by the classical Chinese acupuncture model have no anatomical existence. There is no structural reason why needling a point on the leg should alter sensations in the neck or abdomen. Efforts to explain acupuncture effects with reference to the release of endorphins can neither address the specificity of acupuncture effects in relation to particular points nor account for its clear effectiveness for conditions not requiring pain relief. One of the paradoxes from decades of acupuncture research by Western scientists is that an increasing number of large clinical trials have reported that true acupuncture does not significantly outperform sham acupuncture, which is at odds with the therapeutic outcomes and traditional theories of acupuncture treatment. In the absence of a biomedical rationale, acupuncture efficacy has sometimes been seen as no more than placebo effects. Although researchers have started to question the assumption that acupuncture research should be conducted and judged according to the methodology of conventional clinical trials, longstanding doubts about Chinese medicine theory—persistently seen as lacking

18 Wayne and Hammerschlag 2009, pp. 1039–44.
an adequate vision of ‘the body’—thus haunt today’s practitioners and scholars.19

Opponents of the legitimacy of Chinese medicine have attributed its clinical effectiveness to long-term practical experience (i.e. knowing the how) while they have denied that its theoretical frameworks (such as yin-yang and five phases forms of analysis) could have any rational coherence. In other words, Chinese medicine came to be seen as being completely ignorant of ‘the why’ underlying its work because all its actual ‘theories’ were false. This is a typical modernist construction of others, and many critics writing in both Chinese and English have challenged these facile dismissals of the Chinese medicine heritage.20 In addition, as Lei and Taylor have shown, modern Chinese governments (both the Nationalist government in the Republican Period, 1911–1949, and that of the People’s Republic) have been active in shaping Chinese medicine to the political and economic circumstances of modern Chinese society.

After the People’s Republic of China was established in 1949, Communist Party health policy called for an integrated new medicine whose primary concern should be serving the vast rural Chinese population. Significant efforts were made to incorporate Chinese medicine into the national health system and to resolve antagonisms that had developed between the fields of Chinese and Western medicine. Taylor argues that the appearance of today’s TCM was a direct and instrumental result of Chinese Communist Party’s imperative of serving the new PRC society under grim political and economic circumstances.21 However, from a broader historical perspective, the ideology of modernity which accompanied the PRC’s economic and political reconstruction, inevitably undermined the epistemological roots of traditional Chinese medicine.22

The ‘unscientific’ stereotypes of Chinese medicine didn’t go away when mid-century efforts to abolish the field were ended and its institutional status was upgraded; rather these stereotypes were reinforced in a new way in socialist China under the sway of Marxist doctrines of materialist science. Many of the senior doctors Jun Wang interviewed attended ‘advanced training courses’ in the 1950s. These schools were defined as ‘bridge education’, the aim of which was to help traditional doctors to improve both their political consciousness of socialism and their knowledge of Western medicine. The metaphor ‘bridge’ vividly indicates the function these advanced schools were to

22 Unschuld 1992, p. 46.
fulfill: not only were they meant to transform unscientific medicine into scientific medicine, they would also transport the ‘old’ medical personnel into the modern era. A letter to the editor reflecting the hopes and values of the time, written by a doctor seeking bridge training, was published in a Chinese medicine journal in 1952:

I am a Chinese medicine doctor and I believe from my own experience of clinical practice that Chinese medicine is definitely effective. But I haven’t been able to find theoretical reasons from the classics of why I can treat diseases successfully. And this is why I wanted to attend an advanced school. I hope I can use scientific knowledge or modern medical theory to improve the treatments of Chinese medicine.\(^{23}\)

This rather typical admission reflects the negative connotations of \textit{knowing the how but not the why}. Though \textit{knowing the how} and perhaps remaining agnostic about \textit{the why} had presumably always been desirable in the practice of Chinese medicine, around this time knowing the ‘scientific why’ came to be the modernising heart of Chinese medicine. Many Chinese medicine doctors interpreted ‘bridge’ training as a way of transforming the imperfect practitioner who ‘knows the how but not the why’ into an advanced practitioner who could ‘know both the how and the why’ of Chinese medical therapies. It is believed that once Chinese medicine doctors knew why something worked in terms of a consistent scientific theory (even one that had been much altered in its translation), it was presumed that their practice would not only become more grounded, it would become more effective. But given the deep historical differences between the two systems of medicine, this goal was not easy to achieve by Chinese medicine doctors alone.

For a time between the 1950s-1970s, much hope was pinned on research into the unification of Chinese and Western medicine (\textit{zhongxiyi jiehe} 中西医结合).\(^{24}\) The initial unification personnel were primarily Western medicine doctors who studied Chinese medicine (西学中) in the 1950s and 1960s.\(^{25}\) Their scientific research sought to work less at the level of proving the

\(^{23}\) Shen 1952, p. 13.
\(^{24}\) Unification of Chinese and Western medicine was the primary way of developing medicine in Mao’s China. After the end of the Cultural Revolution in 1976, a new state policy emphasised developing ‘three roads for medicine’ i.e. Western medicine, Chinese medicine, and unified medicine. Each form of medicine has developed through more or less independent institutional structures since then, but unified medicine has not flourished. For a detailed history, see Wang 2002.
\(^{25}\) During the 1950s, thousands of Western medicine doctors were trained in Chinese medicine full time in courses ranging from three months to three years. Subsequently, they participated in both scientific research and clinical practice on the unification of Chinese and Western medicine (Zhao 2007).
effectiveness of Chinese medicine therapies than synthesising the theoretical foundations of the two systems. Examples are projects on ‘using cAMP/cGMP to explain the physiological and pathological basis of yin-yang effects\(^{26}\) and ‘researching the [structural] nature of the kidney (肾本质) and other Chinese medicine organs.’ However, alongside these efforts to provide Chinese medical entities with biomedical counterparts, a more successful form of unification research was taking place, in clinically oriented projects. Most clinical research at this time focused on improving the treatments for certain common diseases, including both acute and chronic conditions. For example, successful research projects within unification medicine (using both Chinese and Western medicines) developed techniques for treating acute abdomen (急腹症), small board setting techniques for upper limb bone fractures (小夹板固定治疗上肢骨折), herbal treatments for high blood pressure and cardiovascular diseases (高血压和心血管疾病), and therapy for hemorrhoids and hemorrhoidolysis (痔疮和痔漏) (Chinese Health Year Book 1978–2005).

It is interesting to note that early unification medicine focused more successfully on the how than on the why. Researchers from both medicines at that time of mobilisation to ‘serve the people’ were more concerned with maximum clinical effectiveness than with the mechanisms that might be taken to underlie the combination. The task of ‘knowing the why’ with any degree of comprehensiveness was deferred, passed on to future generations of doctors.

From 1956 to 1965, twenty-two colleges of Chinese medicine were established nationwide. The curriculum of these colleges at first reflected the same themes as ‘bridge’ education and unification medicine had. An increasing number of policy makers and members of the general public came to believe that the old problem of ‘knowing the why’ would be solved by a college education that included a significant proportion of training in the Western biosciences. Somehow, the new experts themselves would embody a coherent synthesis. This strategy for the development of modern Chinese medicine was soon interrupted by the outbreak of the Cultural Revolution in 1966, and modern college education in the sciences was not restored until 1978, when Deng Xiaoping came to power.

\(^{26}\) cAMP/cGMP are both cyclic nucleotides of cells, and respectively stand for cyclic adenosine monophosphate [cAMP] and cyclic guanosine monophosphate [cGMP], which are the two most important ‘second messengers’ involved as a modulator of physiological processes, such as regulating neuronal, glandular, cardiovascular, immune mechanism, nervous system, cell growth and differentiation. In general, Chinese researchers concluded that cAMP and cGMP have a similar yin-yang regulating relationship in which cGMP performs yin and cAMP performs yang.
The contemporary dilemma

During the 1980s and under the influence of Deng Xiaoping's famous economic 'opening and reform' (gaige kaifang 改革开放) policy, summed up in part with the slogan 'achieve the four modernisations,' Chinese citizens enthusiastically engaged in the revival and rebuilding of academic activities and structures. The Chinese medicine field also experienced a complex revival, even including a celebration of 'traditional' knowledge. A master’s degree program was set up for the first time at the Beijing College of Chinese Medicine in 1981 and in other colleges of Chinese medicine at about the same time. PhD programs were begun in the later 1980s.

As Judith Farquhar witnessed while conducting fieldwork at a major College of Chinese medicine in the early 1980s, the early reform era saw a very influential ‘epistemology and methodology’ (renshilun he fangfalun 认识论和方法论) movement in the Chinese medicine field that critically explored 'modes of thought' (siwei fangshi 思维方式) and valorised the scholarly and clinical experience of senior doctors. For nearly two decades (from the 1980s through the1990s) senior Chinese medicine doctors enjoyed an exalted status in some circles under the new official rhetoric of ‘inheriting and carrying the heritage forward’ of traditional Chinese medicine.

However, since the mid-to-late 1990s, the heritage of senior doctors, including their highly praised clinical skills, knowledge of the classics, and personal cultivation in traditional arts, has lost much of its importance, as scientific skills are being re-valorised in the new era of globalisation and Chinese medical modernity. Volker Scheid points out that since the 1990s, the highest priority for China and Chinese medicine has been to 'get on track with the world' (跟世界接轨), to integrate into the networks of the emergent global economy and medical market. This popular imperative has again reshaped Chinese medicine:

In practice, this meant that regulation, standardisation, and bureaucratisation acquired a new urgency... [M]ultiple directives were passed that defined national standards in diagnosis and treatment: research mirrored on scientific paradigms became the only acceptable way.

Most graduate students in the universities of Chinese medicine nowadays spend most of their time on scientific research, using methods such as animal models, molecular genetics tests, and statistical analysis. Scientific methodology, many of the younger generation argue, can be used to help develop Chinese medicine in the same way as it is presumed to have helped Western medicine in history (though we wonder whether the complex relationship between experimentation and established knowledge in history has really been
so simple). In *Chinese Medicine and its Modernisation Demands*, three researchers on Chinese medicine, writing in English, encapsulate these modernisation beliefs in today’s global Chinese medicine field:

> TCM modernisation has become necessary and urgent. Modernisation of TCM means the combination of TCM with modern technology, modern academic thought, and modern scientific culture, in which the most important point is to elucidate the active component of TCM, especially the material foundation of compound prescriptions and their pharmacodynamic mechanisms. Technology of analytical chemistry (HPLC, HPCE, HSCCC, etc.) and molecular biology (patch clamp, gene clamp, gene chip, fluorescent probe, DNA TUNEL assay, in situ hybridisation, etc.) are useful tools to realise the modernisation of TCM.

To many modernisation advocates, science and technology are the undeniable solutions to problems presented in the development of Chinese medicine. In other words, after the program of unification with Western medicine was more or less abandoned in the 1990s, Chinese medicine embarked on the ‘road’ of integration with ‘pure’ science and technology. What seems to be imagined, however, is a full translation of Chinese medicine concepts and entities into those of global bioscience.

But these scientific endeavors have brought few benefits, and arguably much confusion and disorganisation, to Chinese medical traditions and practices. The irony of the reversed proverb, ’knowing the why but not the how,’ targets the new generation of Chinese medicine doctors who increasingly seek to demystify ‘the why’—filling the category with a biomedical body and scientifically validated data about it—but who don’t know much about the nuances of clinical practice. In reality, most doctors think Chinese medicine is undergoing a dreadful decline of its living tradition of clinical skills and classical knowledge. The failure to know ‘how’ evokes other questions about what it could really mean to know ‘why.’ Is science, for example, really able to answer the question of why Chinese medical therapies work as they do? Reflecting on their field over the past two decades, many doctors have been suspicious of the program that seeks progress through science, though they have not always felt free to express their views openly. Among interviewees, a dean of a university...
His questions arise from the results of massive amounts of scientific research, especially that recently done by international pharmaceutical companies in search of new drugs for managing chronic diseases. He draws attention to the fact that the scientific mechanism behind herbs and herbal medicine formulas has never been clear or really verified, due to methodological difficulties. In classical theory, the actions of Chinese herbs are defined by ‘four qi and five flavors’ (siqi wuwei 四气五味), attributes of drugs that can vary with a variety of processing procedures, combinations with other drugs, and geographical regions of origin. Chinese doctors using herbs in real clinical settings are described as ‘generals deploying soldiers’ (用药如用兵) on a battlefield. In other words, whether herbs/soldiers are useful or not depends largely on how they are used by strategists. The dean’s rhetorical questions ultimately reveal the incompatibility between two rationalities: the styles of thought and knowledge production that still differentiate Chinese medicine from modern bioscience. These are, thus, key questions underlying the central dilemma of the field.

Much recent research on CAM, especially on herbs and natural plants, poses similar questions and expresses similar doubts about the feasibility and outcome measurements of conventional scientific methodology. For example, long time CAM researchers Walach, Jonas and Lewith point out that double blind trials, initially created and used by the pharmaceutical industry to test single components of chemical drugs, are by no means suitable to test the therapeutic effectiveness of Chinese herbal formulas and other alternative

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29 For example, traditional Chinese medicine doctors prepare herbal remedies with whole herbs instead of herbal extracts (as in pharmaceutical labs). However, natural herbs are not recognised as drugs by the Food and Drug Administration, which requires that a drug be identified as a single chemical entity (Wu 1995, p. 172).
therapies, due to the complex nature of whole herbs. However, under the hierarchies of scientific discourse, other rationalities, such as the ancient metaphysics and holistic views that underpin Chinese medicine, provide no ground of comparison. They can only be disbarred from contributing anything to medical explanation.

Of course, we should keep in mind that not all younger Chinese doctors fall into the category of those who ‘know only the why.’ The scholar/doctor Liu Lihong mentioned above belongs to the younger generation of Chinese medicine doctors. The majority of Chinese medicine doctors work in less privileged clinics and away from the major cities. They have little access to scientific journals or other sources of up-to-date research in their field. It does not follow, of course, that they therefore know better how to practice Chinese medicine with nuance and responsiveness. However, as Karchmer, Zhang, Scheid and others have shown, elite doctors’ practices and the institutional development of scientific knowledge have made a significant impact on the practice of Chinese medicine in general, so even ‘rural’ doctors have been formed within a scientistic environment some critics would call degraded.

A case study

Dr. Luo, a clinician and an editor of a Chinese medical journal, told me that her graduate training was spent in a lab instead of in the library with the classics of Chinese medicine. She entered a University of Chinese Medicine in northeast China as a PhD student in the Huangdi Nei Jing (Yellow Emperor’s Inner Canon) Department in 1997. Under her supervisor’s instruction, she and her classmates designed a research project on the ‘constraint’ syndrome (yuzheng). This illness category is often vaguely translated as

31 In contrast to how they have been perceived in China, Chinese herbal remedies marketed in the USA have been denounced as ‘unknown’ and ‘risky’ for American consumers. For example, it has been argued that because of the lack of quality control from the FDA, adulteration, substitution, and contamination are possible or even likely in Chinese herbal products (Sardesai 2002, pp. 343–8). There have indeed been some scary episodes of abuse of Chinese herbs in recent years. One example is the use of large doses of ephedra 麻黄 for weight loss, which has apparently caused kidney damage. Because such cases have been linked to a lack of regulation and recognition of Chinese herbs as drugs by Western health care administrators, and to abuse by practitioners or users, critics argue that Chinese herbal medicine as a whole should be eschewed.
32 The Inner Canon department is not just a scholarly department concerned with this 2000-year-old text and its redaction; it is responsible for certain types of clinical and scientific research stemming from the ‘fundamental theory’ contained in the Inner Canon.
depression in English in order to fit into Western medical terminology. In Chinese medicine, whether yuzheng is equivalent to depression is a controversial question. In Chinese medical diagnostics, the syndrome tends to be seen as the result of liver qi stagnation (肝郁气滞), a physiological state that cannot be translated into biomedical etiologies for ‘depression.’ Notwithstanding the oft-noted incompatibility between the names of diseases in Chinese medicine and in Western medicine, the Chinese medicine zheng (differentiated syndrome) and Western medicine bing (disease, illness) are combined, or mapped over one another, in many research and clinical practices. In Dr. Luo’s project, yuzheng was assumed for all practical purposes to be equivalent to depression.

According to the Inner Canon, or Nei Jing, yuzheng is a yin syndrome, and thus should be rectified by applying some form of counter-acting yang. Therefore, doing acupuncture on yang channels is often a first principle in the treatment of depression. Luo’s research aimed to demonstrate that this simplified version of classical theory could be confirmed with a scientific methodology. Her experiment had two components: first, to determine if depression was consistently classifiable as a yin syndrome (thus reducing the infamous variability of Chinese medicine diagnosis, its sensitivity to the vicissitudes of place, time, and person) and second, if it was, to test the success of treating this stabilised condition via one consistent method of yang channel acupuncture. For the second component they chose the du meridian (督脉), the governing (yang) channel of the human body, as the research focus. They located the acupuncture point baihui (百会穴), the crossing point of all the yang meridians on the top of the head, as the key treatment point on the du meridian.

The experiment was done on white mice. The first step was to generate a ‘depression model’ in the mice. They put the mice in a noisy environment and then forced them to swim in icy water. After repeatedly undergoing this torture for a week, these mice were believed to have a depression syndrome, as manifested in their changed eating habits, movements and other behaviors. Then the ‘depressed’ mice were divided into one control group and several other groups for comparison. For example, group one was treated with

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33 Arthur Kleinman argued in the 1980s that due to the somatopsychic cultural view of self and body, depressive disorder, which is the most common diagnosis in American psychiatrist clinic, was rarely used by either patients or doctors (both Chinese and Western medicine) in China: ‘Depression…was the result, not the cause, of pain, a medical not a social psychological problem.’ (Kleinman 1985, p. 468).

34 This gesture also incorporates a huge assumption, that the mouse body has channels of qi flow that are exactly analogous to those of the human body. Acupuncture researchers acknowledge that this is a problem, but it doesn't prevent them from using animal models in their scientific research.
acupuncture on a *yin* channel, group two with herbal medicine, and group three was treated at the *baihui* point. A control group of ‘depressed’ mice lived normally without any treatment. After two weeks of treatments and no more torture, the results showed that the group with acupuncture on the *baihui* point recovered from depression the fastest. Based on the data from this successful experiment, Luo’s thesis about the validity of ancient knowledge from the *Nei Jing* was confirmed. Her project qualified as ‘modern research on Chinese medicine theory.’

Although Luo thinks that the laboratory skills she learned in graduate school could be beneficial to her future work and ‘knowledge structure’ (知识结构), she doesn’t think that the findings will benefit the general knowledge or practice of Chinese medicine. In this case, her results were not surprising; they were consistent with traditional knowledge, so nothing much was added to Chinese medicine therapies. Even if the results had been inconsistent with Chinese medical theory, it would have been impossible to adjudicate which way of knowing was correct, because Chinese medicine theory is still supported by its clinical efficacy, and because there were so many distortions of clinical medicine built into the laboratory research design.

People sometimes say that when scientific research gives results inconsistent with TCM, traditional knowledge will be called into question. However, in the past two decades, clinical practices designed to accord with scientifically valid guidelines have shown no particular advantage over more ‘traditional’ forms of practice. This point was brought up by most clinicians interviewed, but not because they didn’t trust scientific method; rather they made this point in order to dismiss the fake scientific research that is encouraged by institutional policies and guidelines. Dr. Luo spoke of the doubts she had about the research, owing to the fact that nothing she learned about scientific methods did anything to improve her clinical effectiveness. Her research verified the existing ‘why’ of Chinese classical theory, the *yin-yang* logic that suggested using *yang* channel points, such as *baihui*, to treat *yin* syndromes. This knowledge, however, cannot be simply and directly translated into clinical situations. ‘Knowing the how’ does not merely refer to simple clinical formulae or rote skills. It specifically refers to knowing how to apply the multi-faceted resources (classic theories, published cases, teacher’s experiences, etc.) of Chinese medicine into ever-various clinical moments.

Many scholars have spoken of a unique mode of knowing in Chinese medicine, and elaborated their observations of Chinese doctors’ skills of synthesising theory and practice in clinical settings.35 Zhang has further argued that the

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dialectical relationship between inheriting and developing knowledge is the center of Chinese medical continuity:

Theory or knowledge understood in this sense is not a representation of any abstract underlying truth or objective principle and therefore is not typically amenable to the absolute judgment of right or wrong. It speaks about the success of a particular moment with all its contingency and temporality. It becomes truth or useful knowledge when it becomes relevant to one’s own moment of practice and thus becomes an integral part of the process of creating that moment. An individual physician then becomes a center or a transmitter that is both inheriting and developing [Chinese medical] knowledge and bringing the past into the present and the future.36

Any such ‘relevant moment’ for true knowledge is absent in the experimental animal lab as Dr. Luo and other doctors try to verify classical theories. Therefore, we can further argue that ‘not knowing the how’ indicates a much bigger realm of lack than the mere deterioration of clinical skills among the young. It is a pity that the validity problems involved with scientific research designations and outcome measurements in Chinese medicine research have not yet been substantially discussed by Chinese medicine doctors nor seriously considered by policy makers in China. For example, using sham acupuncture for control groups in acupuncture trials has failed to prove that ‘sham needling’ actually is sham intervention. The problematic results of much scientific research are largely due to the ignorance or neglect of the fact that Chinese medicine including acupuncture and herbal medicine do not work in the same way as surgery and pharmaceutical drugs. In another words, without knowing the how, one cannot embark on knowing the why. Otherwise, knowing the why is irrelevant to what is studied. This explains why Chinese medicine practitioners think scientific research is useless in practice. More importantly, ‘knowing the how’ refers to the pivotal capacity to forge a link between the past and the present, between classics and clinical reality, between inheriting older generations’ experience and developing one’s own clinical styles. The sarcastic play of the proverb, ‘knowing the why but not the how,’ highlights this poignant situation in the field: the more today’s Chinese medicine doctors have sought the authority of science to explain why Chinese medicine works, the less they are able to treat diseases by composing the most effective herbal or acupuncture prescriptions, as most of them feel the senior doctors of the past were once able to do.

Conclusion

In the above sections, we have traced some of the historical outlines of a contemporary dilemma facing Chinese medicine: prevailing institutional scientific research has produced the disconcerting phenomenon of doctors who know ‘why’ certain treatments work but not ‘how’ to deploy treatments in a broader sense. *The how* (qi ran 其然) in Chinese literally means ‘as it is’, therefore, ‘not knowing the how’ indicates that the present modernisation of Chinese medicine has led to complete ignorance of what Chinese medicine is (as it is), particularly in clinical practice, the lifeline of its effective existence. *The why* (qi suo yi ran 其所以然) in Chinese literally means ‘why it is’, ‘knowing the why’ thus specifically refers to ‘knowing the scientific why,’ implying, most directly, a material substrate such as the anatomical body. In other words, any traditional *why*—such as a contingent state of play in yinyang dynamics—needs to be validated by a scientific *why* as we have seen in Dr. Luo’s experiment of acupuncture therapy on a depression syndrome standardised in mice.

The perceived failure to know ‘how’ evokes several questions about what it could really mean to know the scientific ‘why’. Can modernised methods really explain why Chinese medicine works? Can the metaphysical theory of Chinese medicine be interpreted with the concepts and objects of scientific theory, methods, and thought? For Chinese medicine doctors, because scientific research deliberately grafts Chinese medicine into science, the more research is done in this way, the less likely we are to understand why Chinese medicine as it is actually practiced works in reality. Therefore, ‘knowing the why but not the how’ becomes ‘knowing neither how nor why’. Although this sounds like a historical joke, it is perceived by the Chinese medicine community as a crisis. Given the centrality of common-sense efficacy to the rhetoric of the field, the possibility that hardly anyone any more knows the craft of medical practice embodies a serious threat to the continued existence of Chinese medicine.

But today’s most senior luminaries in Chinese medicine have indeed led the field to an uncertain stage: on the one hand, the forces of scientisation, modernisation, and standardisation have reshaped Chinese medicine and devalued a large part of the medical heritage, if only through neglect. On the other hand, the widening gap between the old and new, a rich local tradition and a global modernity, has created a grave problem for the authenticity and efficacy of Chinese medicine. Although the laboratory science and research skills of the younger generation of doctors might be catching up to international standards, the efficacy of their clinical practice is often felt to be going downhill.
Medicine is mind’ reminds us that a doctor’s clinical efficacy not only draws from techniques and experience, but is inseparable from the insights of the classical texts and historical schools of thought in Chinese medicine.

A book by three ‘older generation’ leaders of the Chinese medicine field, Cui Yueli, Zhu Guoben, and Li Zhizhong, Musings on Chinese Medicine (中医沉思录 1997), seriously reexamines the situation and policies of contemporary Chinese medicine. Most of the authors gathered in this edited volume point out that Chinese medicine is going through a dangerous stage of confusion. Fu Jinghua (傅景华) and some like-minded doctors argue that the collective desire and effort to make Chinese medicine a standardised and systematic medicine has produced an unexpected result. They allegorise this process with reference to Zhuangzi’s fable of Hundun, or Chaos. The death of Hundun as a result of the attempts of his friends to reform his body figures the crisis of Chinese medicine. These friendly efforts have sought to make him just like something the wider world can recognise as normal. Fu and others suggest that Chinese medicine, like Hundun, is going to die as a direct result of the well-intentioned work of modernisers who have sought to legitimate Chinese medicine through science. The metaphor of Hundun has become an emblem of the dilemma in the Chinese medicine field. For Chinese medicine doctors, ‘knowing the how’ incorporates and presumes its own rationale; they wonder whether a scientific attitude really requires inspection into the mechanisms of ‘why’.

The question at stake is whether traditional knowledge, even with its effective clinical practice, can survive in institutions that accord so much priority to scientific knowledge. Is scientific knowledge at the cellular level (e.g. cAMP/cGMP) more real and meaningful than classic metaphysical concepts (e.g. yin and yang) to interpret the Chinese medical body? What is the true value of scientific knowing if it breaks down a body of knowledge which is understandable as a complex practical whole? For Chinese medicine doctors before the modern era, it would have been absurd to ask the question ‘at base, what is Chinese medicine?’ However, today, this question is forced upon everyone: not only scientists and alternative medicine consumers, but Chinese doctors themselves.

37 To explain the lack of detailed or consistent articulation about the structure of the human body and procedures of disease diagnosis, some writers on Chinese medicine have resorted to the ‘black box theory’ of cybernetics, a term for a system viewed primarily in terms of regularities observable in its input and output characteristics, while deliberately neglecting the procedures and mechanisms ‘inside’ the box (Cui 1997).
References


