CHAPTER ONE

A Few Words about Studying and Researching Chinese Medicine

Taiji, the Great Unity,
is nothing but the laws of nature.

I. Establishing a Correct Understanding

I.1. The Importance of Understanding Theory

Chinese Medicine is as dear to me as my own skin. I feel duty-bound to study and practice Chinese Medicine, and the writing of this book derives from that same sense of duty and responsibility to Chinese Medicine. I dearly hope that this book will resolve certain problems or questions regarding Chinese Medicine. In particular, I hope that this discourse provides the reader with a sound foundation for a correct understanding of Chinese Medicine.

The thoughts in this book have undergone nearly ten years of fermentation, a degree of preparation most would agree to be adequate. However, despite my preparation, when it came to putting the pen to the paper, I was not sure where to start. It always seems as if the problems facing Chinese Medicine are too complex and interwoven. Which issues are more important? Which are more crucial, more pivotal?

From the layperson's perspective, Chinese Medicine is a medical modality best suited to the treatment of chronic illnesses, or as it is commonly expressed in Chinese: "*Xiyi zhi biao, Zhongyi zhi ben*" (西醫治標，中醫治本), meaning that Western Medicine treats superficial symptoms of the disease, while Chinese Medicine treats the root cause. But what does it actually mean to say that Chinese Medicine treats the root of disease? In current medical practice, this equates to Western Medicine being employed to treat emergent, dangerous, and serious diseases during their critical period, while afterward Chinese Medicine is permitted to help wrap up the case and provide further care. Chinese Medicine is looked upon as a modality that is only capable of treating non-fatal diseases.

To some people, Chinese Medicine is thus like the rooster crowing before the dawn. If the rooster crows, the sun rises; if the rooster does not crow, the sun still rises. That is the attitude of many, but is it really so? I consider this fundamental issue of understanding, perception, and recognition to be of critical importance.

I.1.a. The Current State of Chinese Medicine

The aforementioned attitude toward Chinese Medicine is not coincidental, nor is it without basis. In the past, there had been a number of graduating students who enjoyed coming to me to discuss their thoughts and

observations. Many of them experienced the same thing: During their four years of Chinese Medicine study at the university, they were passionate about Chinese Medicine and had confidence in its capacity to cure disease. These students also hoped to have an opportunity to show something of their ability in the final year before their graduation. But by the end of their year as clinical interns, they had almost completely given up this hope and their passion toward Chinese Medicine had practically expired. Why?

One reason was that the Chinese Medicine they saw being put into practice was not at all the sort of Chinese Medicine they had previously imagined. Regardless of whether they were in a Chinese Medicine hospital or in the Chinese Medicine ward of a Western medical hospital, what they witnessed was Chinese Medicine used as a sort of decoration. To top it off, the Chinese Medicine practitioners they shadowed had little confidence in their profession. The instant they encountered any sort of difficulty, they would frantically resort to Western medications. Or they would add a bit of Chinese medicine to the Western medical protocol, going through the motions. Those who dared to practice Chinese Medicine in a manner true to their own high esteem for the medicine became easy targets of criticism and censure. Practicing in such a way, they found themselves outside the protection of the conventional guidelines for treatment established by the institutions in which they worked.

I can remember when, just after graduation, I practiced in a Chinese Medicine hospital as a clinician. That particular hospital had a well-emphasized rule: if Chinese medicine was used to treat a febrile illness and the fever did not abate within the space of three days, then the patient must be treated with Western medicine. To this day, I still cannot fathom how a Chinese Medicine hospital could make such a rule. Why shouldn't a Chinese Medicine hospital have the opposite rule—if the fever of a patient being treated with Western medicine does not come down within a period of three days, they must be treated with Chinese medicine? Demoted to such a lowly position, how can we expect confidence in the clinical efficacy of Chinese Medicine?

Yesterday, a woman who was nearing her date of delivery came to me, to thank me in person. During the seventh month of her pregnancy, for reasons related to overwork and fatigue, she began to have abdominal pain and vaginal bleeding, suggesting the possibility of a miscarriage. She

received a round of Western medical treatment but did not improve. She was especially fearful because she had experienced previous miscarriages. A mutual friend introduced her to me for treatment.

After examining her tongue and taking her pulse, I prescribed Huangqi Jianzhong Tang. After the first dose of medicine, her bleeding decreased. After the third dose, her abdominal pain and vaginal bleeding stopped entirely and her appetite increased considerably. Following this improvement, she phoned her mother who lived in a northern province of China. After explaining what had happened, the first sentence out of her mother's mouth was: "Chinese Medicine really worked?" This mother's doubt reveals a mentality shared by the ordinary Chinese people toward Chinese Medicine.

This past May, I was invited to participate in a symposium on Chinese Medicine study and give a lecture titled "A Brief Discussion of Learning and Research in Chinese Medicine." After giving the lecture, a gentleman with a PhD approached me to chat. He commended me on the one hand for my passionate study and promotion of Chinese Medicine classics in this day and age, but at the same time he was also genuinely puzzled by this behavior. Among the throng of Chinese Medicine PhDs attending the symposium, there were only a few that had actually studied the classics. If one of them had a copy of the *Huangdi neijing* (*Yellow Emperor's Classic of Internal Medicine*, abbreviated below as *Yellow Emperor's Classic*) on his or her desk, it would invite ridicule. What books adorn these doctors' desktops? Invariably, we find texts related to molecular biology and modern biochemistry.

In their field, doctoral-level Chinese Medicine practitioners form an elite class. It will be their duty to modernize Chinese Medicine. For them to read books on molecular biology and biochemistry is simply good form. But why are they not interested in reading any Chinese Medicine texts, especially the medical classics? I think there is a simple answer. In their view, Chinese Medicine is nothing more than it appears to be at first glance and the classics are nothing more than what they appear to be at first glance. As far as they are concerned, it is unlikely that there is anything worthwhile to gain from reading the medical classics. There are many challenges confronting Chinese Medicine, but this disregard for the Chinese Medicine classics is the highest hurdle. These elite Chinese Medicine doctors have a bright future.

It is they who will become the leaders and policy makers of our profession. By the time these people have assumed their positions of authority, what will have become of Chinese Medicine? It is not hard to imagine.

At this juncture, it is important to raise these questions: Is the Chinese Medicine that we witness today and with which we in China are so familiar an accurate representation of what *real* Chinese Medicine has to offer? The standards of practice that we see exhibited in every facet of Chinese Medicine by these doctors, are they the true standards to which we must adhere? Where can we find the true standards of Chinese Medicine? Should we look for them in the present or in antiquity? There are various answers to these questions and from their variety, disparate attitudes toward Chinese Medicine become apparent. If Chinese Medicine is nothing more than what we witness practiced today, does it really merit such a great amount of time devoted to its study? Does it merit the energy a graduate student spends scrutinizing, scrupulously researching, and practicing it? Let me be the first to answer that last question—No, it certainly does not! Why should we be trapped in such a blind alley as that? Why should we expend such energy merely to play a secondary, and perhaps decorative, role? I am raising the question of "how to establish a correct understanding" in the hope that no one be confused by the current state of Chinese Medicine, and thereby lose confidence in what Chinese Medicine has to offer.

I.1.b. Does Chinese Medicine Theory Lag Behind Clinical Practice?

In the past ten years or more, many people have raised the following question: Is Chinese Medicine not up to the task of tackling problems encountered in the clinical setting? In any field of science, theory leads practice, and practice plods along, following the footsteps of theory. Later in this book, I discuss the relationship between theory and practice at greater length. In recent decades, why is it that Chinese Medicine has had no breakthroughs in this particular area? Why has the clinical efficacy of Chinese Medicine not improved in all this time? Whenever a patient has a high, persistent fever, the patient ultimately receives antibiotics. Why and how has this scenario become so prevalent? Chinese Medicine theory was established over 2,000 years ago. During the intervening time, there have apparently been no great breakthroughs and no great changes. Does this reflect the fact that Chinese Medicine theory is antiquated and backward, and thus

unable to furnish useful guidance for the clinical practice of this medicine in modern times?

The question of whether or not Chinese Medicine theory has fallen behind what is necessary for clinical efficacy is an inevitable one. Does the relatively deficient clinical usefulness of Chinese Medicine as it is practiced today and the low expectations clinicians hold for it, point to a core theoretical deficit? My own view is entirely contrary to this or any low estimation of Chinese Medicine. On the contrary, I believe that Chinese Medicine theory is not at all backward or lagging. It is actually far ahead of its time. It shares this quality with a number of other traditional arts. The famous philosopher of modern times Liang Shuming said that China's traditional culture, such as Confucianism, Daoism, and Buddhism, could be classified as anthropologically precocious cultural constructs. I believe that Chinese Medicine is equally precocious, and that it matured to such a degree as to make it advanced even in present times. Within the system of Chinese Medicine theory, the problem of lagging behind the requirements of clinical practice is absolutely non-existent. If one says that Chinese Medicine theory lags behind clinical practice or that Chinese Medicine theory cannot offer guidance in the clinical setting, then I would ask: Does one really have a firm grasp of Chinese Medicine theory? Regarding Chinese Medicine theory in the *Yellow Emperor's Classic*, exactly how much of it have you comprehended? Do you understand it 100 percent? If you do not understand it 100 percent, how about 20 or 30 percent? If you have not grasped even 20 or 30 percent of the content of the *Yellow Emperor's Classic* (and there are those who have practiced Chinese Medicine their entire life and still are unable to distinguish yin from yang), how then can you declare that Chinese Medicine theory is deficient? A superficial and overly simplistic understanding of Chinese Medicine theory predominates in the modern world. Chinese Medicine is regarded the way a peasant from the mountains is regarded by the sophisticated Chinese urbanite. What is wrong with simplicity though? Simplicity is the highest accomplishment. Only by returning to simplicity can we return to authenticity. If you have yet to truly understand Chinese Medicine theory, or at the very least to have attained what resembles an understanding of Chinese Medicine theory, what basis do you have to determine whether it is primitive or advanced?

The previous question is a serious one, for if it goes unanswered, we

cannot understand how the present crisis of Chinese Medicine has come about. What has brought about the low standards to which we hold Chinese Medicine in the clinical setting? If we mistakenly see these low standards as evidence of deficiency within the theoretical framework, and seek to find problems within the theory itself, then we will indeed lag behind!

I remember when, shortly after completing my undergraduate study, I was doing a clinical internship in a teaching hospital of my university. We received a female patient with pneumonia. The patient was 60 years old, and at the time she entered the hospital, her temperature was 103 degrees Fahrenheit. Her white blood cell count was near 20,000, with 98 percent neutrophilia. X-rays revealed a large shadow over her right lung. From a Western medical perspective, this patient was, almost without doubt, suffering from a serious case of pneumonia. It is dangerous when an elderly person suffers from serious pneumonia. However, since I was so green, and since the inexperienced often do not shy from adversity, I was eager to try the curative abilities of Chinese Medicine and chose to treat this patient with Chinese herbs. I diagnosed her situation as a case of lung heat. And so I prescribed a Chinese herbal formula intended to clear her lungs of heat pathogens. However, to my dismay, two hours after ingesting the medicine, the patient experienced a bout of diarrhea. Subsequent doses of the formula caused diarrhea at closer and closer intervals, until the patient had loose bowel movements within ten minutes of ingesting the herbal decoction. What came out of her looked just like the medicine she had drunk. Three days after being admitted to the hospital, her fever had not decreased one bit, and her other symptoms were not ameliorated.

According to hospital regulations, if her fever did not abate by the following day, we would have to begin administering Western pharmaceuticals. At this point, I may have been even more worried than the patient. I hurried off to the office of my mentor to beg for advice. After introducing the case to him, he pronounced that this was a case in which Taiyin and Yangming syndromes were intertwined. Yangming was hot and Taiyin cold, and so Yangming heat must be cooled, but the cold Taiyin could not handle the cold nature of the decoction and so the formula caused the patient to have diarrhea. The Taiyin and Yangming of this patient must be treated separately, yet without neutralizing each other. The original formula to cool Yangming should be continued and administered orally, while Lizhong

Tang plus Sharen should be ground into a powder, mixed with liquor, and applied with heat to the acupoint at the patient's navel to warm Taiyin. I hurriedly set about following his advice. At around nine that evening, I applied the topical medicine to the patient's navel. About an hour later, I had the patient again take the decoction I had previously prescribed to her. To my surprise, there was no diarrhea this time. The next day on morning rounds, I found her temperature had returned to normal, and she reported that during the night before her other symptoms had improved dramatically. To treat this illness, not a single Western Medicine drug had been used. In the course of the following week, the fluid in the patient's lung had been completely reabsorbed and she left the hospital.

This experience left a lasting impression on me, such that in the next ten years, whenever a patient did not respond as I had hoped to a particular prescription, I never suspected Chinese Medicine or Chinese Medicine theory to be the culprit. It is worth rethinking the contemporary understanding or perception that Chinese Medicine theory lags behind clinical practice. Once our doubts are dispelled, we will be prepared for the theoretical propositions set out in this book. In the future, when our prescriptions fail, we can seek the shortcoming in our own clumsy understanding rather than blame Chinese Medicine theory. In my own experience and that which I have observed, the vast majority of problems do not stem from theoretical shortcomings but from failures in our own understanding.

I.1.c. An Excursion into Twentieth-Century Physics

An irrefutable relationship exists between theory and practice, and likewise a clear relationship between theory and clinical application. This point is well illustrated by the role that physics played in the technological development of the twentieth century. At the conclusion of the nineteenth century, classical physics had already produced incredible intellectual achievements. Many believed that classical physics constituted the ultimate, and most comprehensive, theoretical explanation of reality. Physics's honeymoon with cosmology was rudely interrupted at the beginning of the twentieth century with the establishment of the special theory of relativity in 1905 and the subsequent general theory of relativity, and with the discovery of quantum mechanics shortly thereafter. There were fundamental changes in our knowledge of the universe at every level. This retooling of our perception

of how the universe is structured and behaves led to a revolution in the development of technological applications, ranging from space travel to atomic energy to microelectronics. These changes affected all of us in an undeniable way and are all directly related to changes in theory. Within the framework of the classical physics of the nineteenth century, space travel, atomic bombs, and even modern communication devices would have been inconceivable.

Looking back on the technological advances of the past century, the importance of theory and how it governs the application and development of technology is obvious. Can the contrast between the technological advances of the last century and the lack of clinical efficacy of Chinese Medicine as it is currently practiced be the grounds on which we can suppose that Chinese Medicine theory is backward?

We arrive at the crucial question: Just how inclusive is classical Chinese Medicine theory? How far do its theoretical framework and precocious nature extend? Does it still have anything to offer in terms of guidance to the present-day clinician? This is what is important, not the fact that it was created some 2,000 years ago. If we can determine that this theory is definitely backward and that it is indeed unsuitable to the modern age, then we should destroy it without any hesitation, and establish in its place a something equivalent to the "theory of relativity." If this theory is not backward, and if within the framework there is already a "theory of relativity" as well as "quantum mechanics," why should we get rid of it?

At present in Chinese Medicine circles, there is a strange and even frightening phenomenon: a steady weakening of the teaching of the Chinese Medicine classics. Nowadays, the vast majority of Chinese Medicine schools have converted courses on the Chinese Medicine classics into electives. Venerable institutions in Chengdu and Nanjing that formerly stressed the importance of studying the classics are equally guilty of conforming to this trend. Is this progress? I doubt it. What is being substituted for classical Chinese Medicine theory? Have some fatal flaws been discovered in the theories that have served Chinese Medicine practitioners for decades? The classics remain the nucleus of Chinese Medicine, its very foundation. As such, the classics must remain an absolutely obligatory subject of study. How is it that we can turn the study of the most essential and fundamental facet of our discipline into an elective? Is there anyone who would contest

the fact that a modern text such as *Fundamentals of Chinese Medicine* (Zhongyi jichu lilun) is anything more than a shadow of the *Yellow Emperor's Classic*? In present times, popular opinion favors such modern textbooks over the classics and deems them adequate replacements for their ancient predecessors, when in fact *Fundamentals of Chinese Medicine* and the *Yellow Emperor's Classic* are on completely different levels. They are so far apart in terms of quality that they should not even be mentioned in the same sentence!

Theory requires practice in order to be fleshed out and fully realized. This is the appropriate relationship between theory and practice, regardless of whether we are talking about physics or medicine. In modern science, the value of theory is obvious. Enrico Fermi's work on quantum theory is an excellent example. The average person cannot understand quantum theory or the theory of relativity. In the history of Chinese Medicine, there have been a number of brilliantly successful practitioners of classical Chinese Medicine theory, such as Zhang Zhongjing and Bian Que. Bian Que used the theory found in the classics to become a physician able to bring those past the brink of death to life again. Zhang Zhongjing's intensive study of the classics eventually led him to become a sort of medical sage. We can appreciate the real value of classical Chinese Medicine theory from the accomplishments of Zhang Zhongjing and other famous physicians of history, just as we gain a true appreciation for modern physics from famous physicists such as Enrico Fermi.

I.2. Chinese Culture As Recognized by Professor Yang Zhenning

On December 3, 1999, renowned physicist and Nobel Prize winner Yang Zhenning accepted an invitation from The Chinese University of Hong Kong to participate in a series of lectures on the "Culture and Science of China" held by New Asia College. During this lecture series, Professor Yang used sets of Chinese couplets to illustrate the distinctive features of Chinese culture. Professor Yang is one of the great physicists of the twentieth century, and has a degree of accomplishment in classical studies as well. Yang Zhenning's understanding of traditional culture can be summarized along the following lines: First, traditional culture sought universal principles but modern science seeks natural laws. According to Yang Zhenning, traditional culture did not seek natural laws, but modern science does. "Traditional culture sought universal principles, not natural laws," and this is what

underlies all the differences between the two. Well then, what is meant by these universal principles? Professor Yang described "universal principle" as a sort of "spirit" or "state of consciousness." Should this be taken to mean that these do not exist within modern science?

Secondly, Professor Yang believes that, within traditional culture we find only the inductive method, but no logical deduction. In science, there are two methods of obtaining knowledge: the inductive method and the deductive method. The inductive method collects a number of conclusions regarding observed phenomena and arrives at an "induction": a definition, a universal principle, or a general law from a number of particular instances. Although these two may at first glance appear dissimilar, they share commonalities. The inductive process proceeds from the external to the internal. Logical deduction is another important method. This process is extremely rigorous. For instance, from one we may proceed to two, from two to three, and so on. This process can only proceed in a careful, sequential way. Present-day science possesses the inductive method as well as the logical deductive method, but logical deduction is its identifying feature. According to Yang Zhenning, within traditional Chinese culture there is only the inductive method and no deductive method, and this is what divides the traditional from the modern.

The third point made by Professor Yang is that traditional Chinese culture lacked formal experiments and a natural philosophy. A great number of people believe that Chinese Medicine and its teachings constitute a type of natural science, or better put, a sort of natural philosophy. Professor Yang, on the other hand, in his lectures, takes traditional Chinese culture as an example of one that is lacking in a natural philosophy, directly disagreeing with the observations of many others.

In modern science, experiments are extremely important. Without experiments, modern science can hardly move an inch. Even if we extend our observations to scientific classification, we find that this is the case. At the time I was a doctoral student, there was an unwritten rule governing doctoral students: if one wished to obtain a doctoral degree, one would have to perform experiments in one's research. I owe my good fortune that I, as a doctoral candidate, never had to do any experiments to my supervisor. In Yang Zhenning's opinion in the history of Chinese Medicine, there are no experiments. We do not find the Yellow Emperor asking Qi Bo: "This

yin yang theory of yours, how did you arrive at it? Did you experiment with any white mice to arrive at this theory?" Certainly not. So we can say that it is indeed true that in Chinese Medicine or in other traditional sciences, there are no experiments in the modern sense of the word. And that, on the whole, is Professor Yang's understanding of Chinese culture.

I.3. The Structure of Traditional Theory

I am mentioning Professor Yang's understanding because it is representative of how most people see our medicine and other aspects of traditional Chinese culture. Does it describe the deeper implications of traditional culture? Personally, I think not. Traditional Chinese culture has many facets, but Chinese Medicine is arguably the most representative branch. Below, I will therefore use Chinese Medicine as an example to make a series of points concerning my perspective on traditional culture in general.

I.3.a. What Are "Universal Principles"?

First of all, the question we must answer is: What are these "universal principles" of traditional Chinese culture? When traditional culture diligently sought these "universal principles," was it merely due to a certain "spirit" or "state of consciousness" or did it include the concepts of "spirit" and "state of consciousness"? We can first investigate the concept of "universal principles" from the perspective of the Chinese character used to convey this idea. The book *Explaining Writing and Analyzing Characters* (Shuowen jiezi), a Chinese language dictionary dating back to the early second century, defines the character for "universal principle" (*li* 理) as "that by which jade is carved."

After being mined and collected, each piece of jade was carved and polished, worked at meticulously, and slowly took the shape of what was desired, becoming a work of art. The original meaning of the character for "universal principle" referred to this sort of process. In the eyes of the ancients, what was the finest and densest material? It was jade. Why was jade so cold and clear, and so very fine and smooth? It was because the veins and grain of jade are so exquisitely fine. Everyone is familiar with the story of Butcher Ding from the *Zhuangzi* and the saying that goes with that story: "When Butcher Ding cut apart an ox, in his eyes the ox was already in pieces." Why was this the case? It was because he was extremely knowledgeable about the

"grain" (*li*, also meaning "universal principle") of the ox. He was extremely familiar with the trends of each piece of flesh and he knew that if he went with these trends, this grain, the ox would fall apart quickly and without the least expenditure of effort. The grain of jade is of course much denser and finer than that of an ox. To carve jade, one must be doubly careful, and even more cognizant of the hidden grain of the material. Going with the grain of the jade made it possible to carve and polish the material and thereby produce the desired art object. Going against the grain when carving might damage the stone. The original meaning of the Chinese character for universal principle was tied to its alternate meaning, that of grain or texture.

By extension, this means that if you proceed in one particular direction, it will work, but if you proceed in another way, it will not. Why is this? This is because of the very function of "universal principle," of the grain of things. Let us ponder this for a moment: If this sort of "universal principle" is not synonymous with "natural law," then what is it? Natural laws, the rules governing phenomena, are rules that cannot be circumvented; any effort to go around the laws of nature will be unsuccessful. As the saying goes: "If one grasps the universal principles, one can go anywhere; without an apprehension of the universal principles, it is difficult to move an inch." The significance of the Chinese concept of "universal principle" is illustrated by this idea. If you go with the grain, your method will be successful. This is "universal principle." That is the case with the "universal principle" or "grain" of people, of the cosmos, and of nature. The "universal principle" of nature is the grain that we must go with in order to get along with nature; the "universal principle" of people is that which we must concord with in order to get along with people. The point is that the ancient Chinese concept of "universal principle" is something very real; it is something that can be perceived with one's eyes and touched with one's hands. If you act in this way, everything works; if you act in that way, you will be rebuffed. "Spirit," on the other hand, is a concept that is abstract and intangible, dimly discernible, and impossible to grasp in a concrete way.

In Chinese Medicine, we esteem these "universal principles," rules, or laws most highly. And what are these "universal principles," rules, and laws? Merely yin and yang and the four seasons! Thus, we find the following statement in the *Plain Questions* (Suwen) chapter titled "Great Treatise on the Four *Qi* and the Tuning of the Spirit" (Siqi tiaoshen dalun):

> So it is that yin, yang, and the four seasons are the beginning and end of the myriad things, the root of life and death. If you go against them, you will bring about disaster. If you accord with them, no severe illness will ever arise. This is called achieving the Dao.

Why is the phrase "achieving the Dao" used at this point? This is a fascinating question. This phrase "achieving the Dao" is one that was often used by the ancients in their writings. If one "achieves the Dao," one can ascend to the heavens, and if one can ascend to the very heavens, what is beyond one's abilities? How is it that one achieves the Dao? One realizes these principles and acts in accord with them. If one does that, of course one will achieve the Dao and enter upon the level plane of the high road. How is it that modern-day spacecraft are able to fly out into the sky? Isn't it because we clearly understand the principles conveyed by the theory of relativity? Thus, this "universal principle," this "Dao," this "rationality," are words and expressions laden with meaning for both the ancients and for modern people.

I.3.b. Combining Inductive and Deductive Reasoning

Is it accurate to say that traditional Chinese culture relied only on the inductive method of reasoning? I disagree on this point as well. The *Plain Questions* chapter titled "Treatise on Heavenly Truth in Remote Antiquity" (Shanggu tianzhen lun) clearly points out:

> The people of remote antiquity were knowledgeable of the Dao, their method was comprised of yin and yang and harmonized with numerical calculation.

Here, knowing the Dao is identical with obtaining the Dao. Those who have obtained the Dao are of course enlightened regarding it. Here, knowledge of the "universal principle" or "grain" of the Dao has two facets: one is yin yang, and the other is numerical calculation. Therefore, we are confronted with two problems: what is expressed by yin and yang is induction, as illustrated in the chapter "The Great Treatise on the Correspondences of Yin and Yang" (Yinyang yingxiang dalun) from the *Plain Questions*:

> Yin and Yang comprise the Dao of the cosmos, the warp and weft of the myriad things, the father and mother of changes and transformations, the root of life and death, the container for the spirit light.

In this passage, by attributing heaven and earth and the myriad things, all of the transformations and changes of phenomena, and even death and life to the concept of yin and yang, we are clearly speaking from an inductive perspective. There is no method more complete and consummate than yin and yang theory as an inductive method. What of "numerical calculations," as mentioned in the above passage from the *Plain Questions*? What is meant by "numerical calculation," translated literally as the "technique of numbers," is of course the deductive aspect, the logical methods as expressed in traditional Chinese culture. When one speaks of deduction and logic, one must of course make reference to mathematics. Professor Yang believes that ancient China did not develop mathematics until the seed was planted from the West in the sixteenth or seventeenth centuries. In his understanding, mathematics, in the true sense of the word, did not appear in China until the twentieth century when it was standardized in the curriculum of the two leading universities in China. Did traditional Chinese culture exhibit evidence of possessing mathematics? It certainly did. "Numerical calculation" refers directly to mathematics. In the *General Catalogue for the Complete Encyclopedia in Four Branches* (Siku quanshu zongmu), we have an explanation of this concept of "numerical calculations" that includes the following lines:

> When phenomena emerge, there are images; when images emerge, there are numbers. When the multiplications and divisions of numbers are studied and explained, diligently investigating the source of creation, this is called "numbering."

This passage does not refer to the sort of system of logic or mathematics we see used today, but it belongs, without doubt, to the category of deductive methods. And so, if we want to fully understand the Dao, if we want to truly grasp traditional knowledge and understanding, then we must have a firm grasp of yin and yang as well as a clear understanding of "numerical calculations." Traditional Chinese culture did in fact combine inductive and deductive methods, and the two were mutually indispensable.

I.3.c. Rational Thinking and Internal Experimentation

When Professor Yang Zhenning stated that traditional Chinese culture did not have experiments, he was only half right. Certainly, in traditional

Chinese culture, we do not see modern experimental research like what we see today. When we speak of medical studies, the ancients did not have experiments subjecting humans, white rabbits, little white mice, or other animals to a series of tests. However, in traditional Chinese culture, there was a very subtle and profound process of *internal* experimentation. It is due to the combination of internal experimentation and rational thinking that traditional Chinese Medicine and Chinese Medicine theory came into being. Of course, internal experiments are fuzzy because no part of internal experimentation can be observed objectively. There are no white mice to be observed, nothing to be seen, nothing tangible. It is entirely a sort of ability that emerges within oneself from one's own practice. As soon as someone acquires this ability he or she can with ease conduct a host of experiments that are vastly different from those conducted outside the system of the human body. This issue is therefore difficult to talk about but avoiding the topic is not a solution either. If we continue to insist that traditional culture is devoid of experimentation, then there is only one road to go down, with the following of two outcomes: either Chinese Medicine does not possess a theoretical framework and is a purely empirical medical science, or Chinese Medicine is entirely the result of contemplation. Let's think for a moment: If we were relying on a theory born solely of contemplation, would we be able to put our trust in it completely? Could Chinese Medicine's many theories and observations hold up in practice if they were based solely on subjective thought? Take, for example, the acupuncture channels or the many acupuncture points, and other such elements of Chinese Medicine. Could they be discovered simply by theoretical speculation? Take, for example, the acupuncture points Fengfu (GV 16, "Wind Palace") and Fengchi (GB 20, "Wind Pool"). What sort of speculative process would you rely on to come up with these particular points and name them "Wind Palace" and "Wind Pool"? What sort of thought process would you rely on to be able to say that the Shaoyang channel circulates like this and the Taiyang channel circulates like that? I believe that no matter how intelligent you might be, these are not things you could come up with via reflection. If you do not believe me, try to think up such a thing and see for yourself. It is obvious that if profound internal experiments had not been conducted, it would have been impossible for such ideas to develop. We have every reason to believe that in the course of the development of its theories, traditional

Chinese culture, especially in fields such as Chinese Medicine, employed both contemplation and experimentation. The argument that traditional culture did not possess experimentation does not have a leg to stand on. We have cause to differentiate internal experimentation from external experimentation, but we certainly have no reason to negate internal experimentation. This point should be crystal clear.

Rational reflection and subtle experimentation are the foundation of traditional sciences, and for this reason we can have complete confidence in the theories developed from this foundation. The problem lies in the reason why so many people do not recognize that traditional Chinese culture possessed experiments. It is because we have a very difficult time imagining what internal experiments are. In the case of the channels, for instance, Li Shizhen once said that if we do not trace the path of the channel by turning our gaze inward and observing them internally, then we will have a difficult time even saying where they are. What does it mean "to turn one's gaze inward and observe internally"? To turn one's gaze inward and observe internally is the very model of internal experimentation. If you possess this internal capacity, the channels and points are all things that you can see, despite the fact that you cannot observe them with even the most advanced technology. Even should you use the most state-of-the-art equipment, it is difficult to discern the channels and points. What you cannot see externally, you will find difficult to believe. Therein lies the difficulty.

If you would like to conduct internal experiments such as we just mentioned, it is necessary to have a certain degree of education, practice, and talent. If you cannot enter into this requisite state of internal experimentation, you will not be able to sense such things as the channels. Albert Einstein, to a great degree, was a believer in intuition. Without intuition, science is missing a leg. In my opinion, there may be people among the general population who possess the capacity to observe the internal landscape just as the ancients could, or there may not. But do you believe that this is possible? Some people ask me what they need in order to study Chinese Medicine. My answer is always this: If you cannot perform such introspective, intuitive investigations yourself, do you or do you not believe that this way of seeing is possible? What is the nature of this kind of internal experimentation? Liang Qichao said it well in a single sentence: "The illumination of the heart-mind is Heaven's universal principles." Incidentally, this is the

same sentence used by Yang Zhenning during the course of his symposium lecture. This "illumination of the heart-mind" is by no means an understanding through mental analysis, and to see, to really see, with an illuminated heart-mind is not easy. The illumination of the heart-mind referred to here is the state of perception already mentioned in reference to internal experimentation. The illumination of the heart-mind can look within; it can turn inside and observe what it finds there, and perceive the path of the channels in one glance. Why do we say these are internal experiments? It is because they are not conducted outside of the human body but rather within it.

In the preface to the *Treatise on Cold Damage*, Zhang Zhongjing referenced a book titled *Fontanel Record of Medicinals* (Tailu yao lu). As we know, in the past, there was a *Fontanel Classic* (Luxin jing) that was concerned with pediatric diseases. In the case of the former book, we are also using a word referring to a fetus, and therefore we naturally take the *Fontanel Record of Medicinals* to be a book about pediatric medicine. If we were to use modern language to translate this title, we might translate this work as "Comprehensive Volume of Pediatric Medicine." However, if we open the history books, it becomes clear that it is unlikely that a book devoted solely to pediatrics existed prior to the Eastern Han dynasty. The *Divine Farmer's Classic of Materia Medica* (Shennong bencao jing) is divided into upper, middle, and lower substances, and not organized into categories such as internal medicine, external medicine, gynecology, or pediatrics. Even up until the Ming Dynasty, the book *Compendium of Materia Medica* (Bencao gangmu) is divided into sections such as "trees," "herbs," "minerals," "beasts," etc. Knowing this, we must change our thinking regarding the probable content of the *Fontanel Record of Medicinals*. The character for "fetus" does not refer to an unborn child here, but instead to "fetal breath," which is a breathing method whereby one returns to the fetal breathing state. Once a person has entered into the fetal breathing state, the "illumination of the heart-mind" state naturally arises, and the person enters into a deeply introspective state. At this point, a laboratory for introspective experiments can be set up. At this time, one is able to sense the effects of medicinal substances concretely. After ingesting medicines, their *qi* and flavor, the channel into which they enter and into which they will move next, and consequently also their appropriate use, all become completely clear and obvious. Thus, when

the ancients spoke of a medicine's *qi* and flavor, or of the channel that it entered, these were not determined solely through contemplation, but from true experimentation. The *Fontanel Record of Medicinals* was a record of the movement and function of medicinal substances resulting from the ability to enter into the introspective experimental state. So we see that traditional Chinese culture, and in particular the structure of Chinese Medicine theory, is entirely a joint product of rational thought and introspective experimentation. We cannot accept that there was only contemplation and not experimentation. We can only accept the premise that Chinese Medicine did not have external experiments such as those of the present day.

I.3.d. The Application of Theory

After establishing Chinese Medicine theory, how should it be put into practice? The application of theory presents a unique problem. Within the realm of modern science, we can delimit three distinct areas: basic science, technological science, and applied science. What is technological science? It is a bridge between the basic sciences and the applied sciences. Why is modern science often mentioned in one breath with the term "technology"? It is because these two influence each other so greatly. Sometimes science determines technology, and sometimes technology determines science. Take, for example, the current research into the basic composition of matter. Without theory, nothing can be accomplished in this field, but without a functioning superconducting supercollider, the theory cannot be furthered. Science and technology are, therefore, intertwined. Within traditional Chinese culture, we find a very strange phenomenon: between theory and practice, we do not have a technological field in the modern sense of the word. There is no mediator or bridge between the two. When we look at modern medical science, there is a massive technological bridge between theory and practical application. The entire disciplines of modern physics, chemistry, and biology serve as these mediators. These make the application of medical theory extremely convenient. Nowadays, physicians rarely rely on their own bodies and senses to examine, palpate, ask questions, and listen, which originally comprised the four basic methods of diagnosing disease in Chinese Medicine. These direct, corporeal modalities have been replaced with technology, used to probe and measure and look into the body. In the field of Chinese Medicine, there is no such mediating layer that

offers technological tools. The application of theory, and the proof that this theory actually works, relies entirely on our own ability to make this knowledge our own and become enlightened to its subtle depths. Naturally, this situation makes the study of this medicine quite difficult.

It is this point that comprises the biggest difference between traditional Chinese cultural understanding and modern science. In modern science, there is a level of technological mediation between theory and practice that is crucial in the process of actualizing theory. In the case of traditional Chinese culture, especially in the case of Chinese Medicine, there is no such go-between. The application of theory depends almost solely on the subject feeling and subjectively perceiving the pulse. How adept is the physician at pulse diagnosis? This will depend on the practitioner's mastery of direct perception and their ability to interpret that perception. By contrast, a scientific elite produces the medical technology upon which the practitioners of Western Medicine depend. As soon as the new technology exists, it can be manufactured *en masse*. Then, any ordinary technician can put this technology to use.

Qian Xuesen worked on the development of guided missiles, but he himself did not need to get involved in building bombs. The inventors of the first computers, after completing their work, did not need to go and build each computer one motherboard at a time. Technology enabled them to complete the production process. Modern technology is a very convenient thing. It can help us to actualize any theory, no matter how advanced. Therefore, for modern science, the most essential element is reproducibility. However, in the traditional fields, this particular convenience is missing. This means that, no matter how good the theory, if you cannot grasp it yourself, it amounts to nothing. Just imagine that we get ahold of the secrets of the theory of general relativity—what would be able to do with this knowledge? What practical thing would you be able to produce with the details of general relativity at your command? It is not different from if we were to have a firm grasp of the theory of relativity. Armed with this knowledge, what sort of contraptions could we come up with? If a person had the entire theory of relativity clear as crystal in their mind, what sort of device would they design? Personally, I find it very difficult to conceive of the answers to such questions. Just because one cannot construct a tool or other elements of technology with a particular theory, does it mean that

the theory is backward? Was Albert Einstein's work meaningless? This is the sort of problem that Chinese Medicine faces. If it has fallen behind, then it has fallen behind at this particular junction. One cannot say that the theory itself is backward or primitive. History has already produced a great number of highly successful practitioners of Chinese Medicine, who have brought forth their equivalents of the "atomic bomb" and the "computer."

Keeping this particular insight in mind, we should approach any questions surrounding classical Chinese Medicine theory with an extremely clear head and ask us whether in case of any perceived deficiencies the theory itself should be blamed, or whether the problem lies in surrounding circumstances. Therefore, I would like to invite you to establish the following understanding: the science of traditional Chinese Medicine does not suffer from impractical theories that have become unsuitable for the needs of modern clinical practice. I guarantee that the power of traditional theory, once acknowledged, will be palpable and immediately useable—no need to bring up the "backward" argument ever again. How come then, we may ask, that Chinese Medicine finds itself in a situation of low clinical effectiveness and low esteem? The only fingers that should be raised here should point in the direction of our own self. How deep, really, is our understanding of the classical principles governing our medicine? Do we really have a masterful grasp of the ways in which this knowledge should be applied to clinical practice? Where will the problems we encounter as Chinese Medicine practitioners emerge? Will they emerge in the arena of theory, or will they emerge elsewhere? As a discipline, Chinese Medicine does not suffer from a deficiency of theory. Its theory does not lag behind practice. This is not the problem. Once you begin to study Chinese Medicine theory, you may begin to perceive things and you may benefit from what you have learned. How can the theory be said to lag behind? Since its challenges do not arise from theoretical weaknesses, why is Chinese Medicine theory doubted at this particular juncture? We must look for the reason in our own shortcomings. How thorough is our current comprehension of Chinese Medicine theory? Have we truly grasped the clinical application of the theory?

I remember when my mentor treated a hemothorax patient in 1987. The patient had already undergone a round of conservative Western medical treatments but his condition did not improve. He still had a high fever, difficult breathing, and the left lung was reduced in size by two-thirds. In

this sort of situation, the only option left to Western Medicine is surgery. But the patient and his family were not willing to give up hope on conservative treatment, and conversely sought help from my mentor. After diagnosing the patient, my mentor recognized that this was a Yangming disease, in which Yangming forces would not descend. In his mind, one had only to think of a way to induce Yangming to sink back down, and the hemothorax would resolve. He thereupon prescribed 120 grams each of Yuzhu, Chenpi, Baizhi, and Dazao—four different herbs in all. After taking the herbal decoction, the patient had a large bout of diarrhea, and thereafter improved rapidly. By the fourth day, his body temperature had returned to normal. By the end of the week, the hemothorax was completely resorbed, and the left lung had recovered.

What relationship is there between a hemothorax and Yangming? On the surface, this is a matter of intuitive insight and the individualized approach of this practitioner, not a question of a direct theoretical link. The theory found in the classics, therefore, is not only adequate to the task of resolving problems of the twentieth century, it is also up to the challenges of the twenty-first century.

II. The Transmission of Knowledge

Next, we will discuss the transmission of knowledge, specifically the transmission of Chinese Medicine knowledge. For this purpose, we are intentionally using the word "transmission," a somewhat antiquated term. When a particular body of knowledge is passed down through generations, what does this process depend on? It depends upon this "transmission." Therefore, the transmission of knowledge is an important matter. Let us examine the matter in two parts and discuss it.

II.1. Modern Chinese Medicine Education

Expressed in modern terms, transmission is simply education. Therefore, let us first take a look at modern Chinese Medicine education. What exactly is "modern Chinese Medicine education"? It formally began when the colleges and schools that currently teach it were established. These institutions started operating in 1956. When we look back on the past decades of teaching Chinese Medicine, pros and cons are evident. First of all, it needs to be