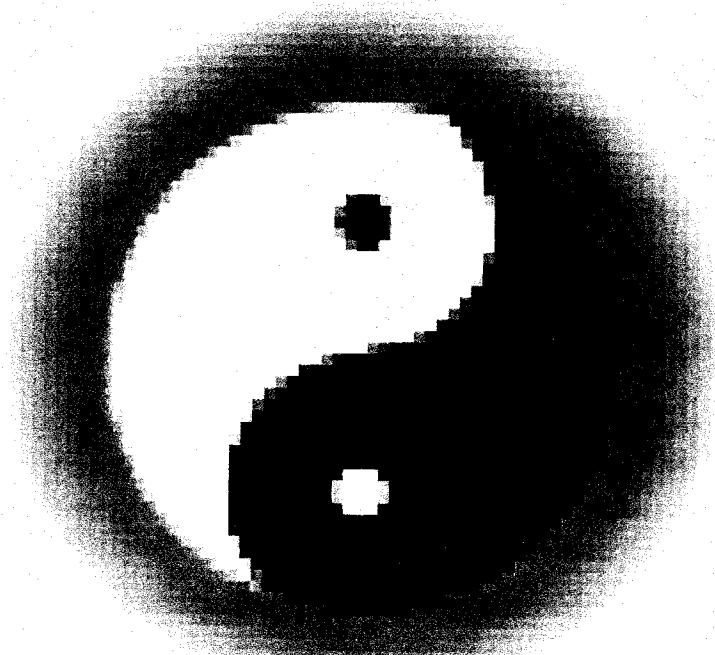


**Book of Changes and
Traditional Chinese Medicine**

周易与中医学

Yang Li

杨力 著



Beijing Science and Technology Press
北京科学技术出版社

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A Brief Introduction to the Author

Yang Li, professor at the Graduate Department of the TCM Institute of China, is a well-known expert in Yi science and a TCM theorist. Her works have made great contributions to the dissemination of Chinese culture. Among them are the *Book of Changes and Traditional Chinese Medicine*, *Advance Diagnosing of Diseases in Chinese Medicine* and *Chinese Medical Science of Breath Exercises*, which have had a great influence on medical practice both at home and abroad. All these books have been highly commended and have won many prizes.

The *Book of Changes and Traditional Chinese Medicine* was awarded the World Golden Prize of Taiji Science in 1993 because of the unique and original ideas set forth in the book. It has also been awarded the National Best-selling Prize for Outstanding Books on Science and Technology, the Second Prize for Excellent Books of Beijing, and the First Prize for Excellent Books of 10 Provinces/Cities in North China. The book is available in both simplified and complex Chinese characters and has been translated into English, Japanese and Korean editions, which are selling well in different parts of the world.

Forthcoming books by Yang Li:

Series on the 5000 Years of Chinese Culture:

1. Classics of 5000 Years of Chinese Culture
2. Classics of 5000 Years of Chinese Science
3. Classics of 5000 Years of Chinese Literature

Book of Changes and Traditional Chinese Medicine

Yiching or *The Book of Changes*, originally titled *Zhouyi* (*The Zhou Changes*), is a monumental work which combines Chinese philosophy, social sciences and natural sciences. It represents the basics of Chinese culture and has had a great influence on many branches of learning in China, particularly on traditional Chinese medicine (TCM). As a matter of fact, the basic concepts of traditional Chinese medicine are rooted in *The Book of Changes*.

Book of Changes and Traditional Chinese Medicine (available in both Chinese and English) is an outstanding academic book of science and also a monographic work on health preservation, which will be of great value to research work in both Yi-science and TCM theories.

This book organically combines the theories in *The Book of Changes* with traditional Chinese medicine, systematically analyses the close relations between them, and highlights the significance of the philosophy of Changes to traditional Chinese medical theories. It contains brilliant expositions on Yi-science, traditional Chinese medicine and taiji science (supreme ultimate science). Centered on the medical Yi-science, it enlightens and inspires readers to delve into the effects of Yi-science on life, qigong, health preservation, preventive medicine, nutrition medicine and time medicine, thus opening a new field for the study of life science, development of medicine and TCM theories.

The book covers a wide range of social sciences and natural sci-

ences, such as philosophical thinking, psychoethics, astronomy, meteorology, genetics, ecology, bionics, phenology, language and temperament, which are all expounded in the context of the philosophy of Changes.

The arguments and views presented in the book are discussed systematically and profoundly with a rigorous scientific approach. The ideas set forth by the author are unique and original, and some of them are theoretical breakthroughs, especially those related to important issues concerning traditional Chinese medicine, for which the author was awarded the 'World Golden Prize of Taiji and Science' in 1993.

The author Prof. Yang Li is a well-known expert in Yi-science and a TCM theoretician.

A Brief Introduction to the *Book of Changes*

The brilliant ancient culture of China has made great contributions to world culture. A prized gem of Chinese culture is *Zhou Yi*, or the *Book of Changes*, a monumental work whose significance to the world is hardly second to any other publication.

The *Book of Changes* is the fountainhead of Chinese culture, the principal source of Chinese philosophy, social sciences and natural sciences. It has greatly influenced the history of Chinese civilization. Its importance lies not only in what is covered in the *Classic of Changes* and *Commentaries on the Changes*, the two component parts of the book, but also in some 3000 related works on *Yi* philosophy (philosophy of Changes), the many ancient schools of thought that derived from this philosophy, and the comprehensive system of *Yi* science it nurtured. All this makes the *Book of Changes* an inexhaustible well and unlimited treasury of human knowledge.

That *Yi* philosophy has not only survived but remained active for thousands of years is because the *Book of Changes* is a pivotal link between the past and the future. It has organically combined ancient and modern Chinese civilization, joined the lifelines of Chinese culture and vigorously promoted its development. Thus, studying the *Book of Changes* is of far-reaching significance to Chinese culture.

FOREWORD

Zhou Yi or the *Book of Changes*, is a monumental work of ancient China and a prized gem in the treasury of Chinese culture. It has had a great influence on philosophy, literature, historical studies, religion, as well as natural and social sciences. Down the centuries, no less than 3000 scholars have researched and annotated the work, and the numerous schools of thought that derived from *Yi* philosophy have accumulated into the imperishable *Yi* science, whose profound and far-reaching influence in China and abroad has few parallels throughout the world.

The theoretical comprehensiveness and importance of the *Book of Changes* lies not only in what is covered in the *Yi Jing*, or *Classic of Changes*, and *Yi Zhuan*, or *Commentaries on the Changes*, the two component parts of the book, but also in some 3000 related works on *Yi* philosophy (philosophy of Changes), the many ancient schools of thought that derived from this philosophy, and the comprehensive system of *Yi* science it nurtured. All this makes the *Book of Changes* an inexhaustible well and unlimited treasury of human knowledge.

The *Book of Changes*, or its essence, has two major connotations: *Yi* philosophy and *Xiang Shu* (Divination). *Xiang Shu* is the basis of *Yi* philosophy. Without *Xiang Shu* there would be no *Yi* philosophy. It is the charm and attraction of *Xiang Shu* that has made *Yi* philosophy more popular than any other system of philosophy.

Xiang Shu has permeated traditional Chinese culture more widely and has been applied more flexibly than any other science. As

a matter of fact, all branches of learning in China such as philosophy, meteorology, astronomy, medical psychology, architecture, calendrical science, geography and forecasting science, ancient or modern, are closely related to *Xiang Shu*. This reflects the great value of *Xiang Shu* principles in Chinese culture. Especially close are the relations between *Xiang Shu* and TCM.

This book provides an in-depth analysis of the relations between the *Book of Changes* and TCM based on a combination of systematic expositions and monographic study. It highlights the significance of *Yi* philosophy and *Xiang Shu* patterns of reasoning to the theories of TCM. It can be regarded as the first comprehensive treatise that combines *Yi* with TCM.

This book shows that TCM and *Yi* are interlinked philosophically and it elaborates on the application of the medical theories of *Yi*. While stressing the application of *Yi* theories to the science of life, medicine and forecasting science, the book gives brilliant and original expositions on a wide range of human knowledge, from the exploration of the mysteries of life, the secrets of health and anti-senility to rehabilitation medicine, encephalology, sexology, language and acoustics, medicated diet, medical cosmetology, *qigong*, acupuncture, bionic medicine, genetic biotics, phenological biotics and so on, which are all expounded in the context of the *Book of Changes*.

The *Book of Changes*, with its abstruse philosophy and broad connotations, is the origin of the natural sciences and the prime source of many branches of learning. Virtually all branches of learning in China originated in the *Book of Changes*. TCM, a branch of the natural sciences, surely has an inseparable relationship with the *Book of Changes*. *The Emperor's Canon of Medicine*, an authoritative work on TCM written at about the same time as *Yi Zhuan*,

was deeply influenced by the *Book of Changes*. The *Book of Changes* adopted the essence of the principles of *yin* and *yang* (negative and positive) and *wuxing* (the five elements: metal, wood, water, fire and earth) of the pre-Qin period, and *The Emperor's Canon of Medicine* also took them as its basic theories, which shows the particular "kinship" between these two monumental works.

The *Book of Changes* can be regarded as the fountainhead of *The Emperor's Canon of Medicine*, for the latter absorbed the essence of the *Changes*, creatively developed many of its theories and even improved on some of them. This has made the *Canon* a great medical classic, as brilliant as the *Changes*. By fully incorporating the theories of the *Changes* and creatively integrating them with medical science, the *Canon* has made TCM a branch of the natural sciences with a very high philosophical value, and has strongly promoted its development. Thus it is obvious that TCM science and *Yi* science developed from the same origin, and the basic theories of the former stemmed from those of the latter. As the eminent doctor Sun Simiao once said, "You cannot master medicine until you have studied the *Book of Changes*."

It is hardly exaggerating to say that no doctor in Chinese medical history has ever studied *The Emperor's Canon of Medicine* without consulting the *Book of Changes*. But to make a deeper study of *The Emperor's Canon of Medicine*, there is need to have a thorough understanding of the *Book of Changes*, so that its origin can be traced, its essence inherited and the study of TCM further developed. It is a pity that the *Book of Changes* is difficult to understand because it is written in an archaic language, and there is not yet any book dealing specially with the relationship between the *Book of Changes* and TCM. On the one hand, increasing interest in the

Book of Changes in China and abroad has aroused a widespread "craze" over the book. On the other, books on *Yi*, or the *Changes*, are far too few to meet the demand. It was because of this that I decided to write the present book. In the course of writing I have read intensively a large number of related works, including rare versions of the *Book of Changes* and extracts from Chinese classics, and have epitomized the thoughts of different schools, analyzed them, and incorporated them into what I had gained from my researches over the years. The text of this book was revised three times before it was published.

Extracts from and analysis of the original *Book of Changes* are also included in this book, which contains authentic materials, in-depth discussions and accurate quotations from other sources. Hopefully, it will help readers to study the *Book of Changes* more easily and quickly and facilitate their advanced studies in the future. This book has been used as a textbook for postgraduates and has been highly commended. It has also been well received in medical circles.

I wish to express my sincere thanks to the successive directors and staff of Beijing Science and Technology Press for their assistance in the publishing of this book. I am particularly grateful to Mr. Zhang Jingde, the executive editor of my book and present director and concurrent chief editor of the Press, for his insight and recognition of talent and his great support and hard work.

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Beijing
Winter 1988

INTRODUCTION

Chinese culture as represented by *Zhou Yi*, or the *Book of Changes*, is a fertile soil in which traditional Chinese medicine (TCM) is rooted. For thousands of years it has nurtured the growth of TCM and contributed to the prosperity of the Chinese nation.

The reason why TCM can remain vigorous for thousands of years is in its unique theoretical system that is rooted in Chinese culture. This book focuses on the study of *Yi*, or *Changes*, as related to TCM and also takes into account the influences of Confucianism, Taoism and Buddhism and various ancient Chinese schools of thought. It reflects the interdependence between *Yi*-centered Chinese culture and TCM.

In recent years an intense interest in the *Book of Changes* and in TCM has sprung up almost simultaneously. This is not a coincidence, for TCM and the *Book of Changes* are closely related and mutually dependent and have had much the same experience in history.

TCM and the *Book of Changes* are the core of traditional Chinese culture. Along with the study of *Yi*, or the *Changes*, as a medical science, the importance of TCM is increasing both in China and abroad. Studying the medicative values of *Yi* has already aroused widespread interest. It marks a new trend in the study of TCM that will be of far-reaching significance to its role in medical practice around the world. Continued research in *Yi* medical science will definitely promote the development of TCM and open up new fields in its study and practice.

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Chapter One Introduction

Engels said, "A nation will never reach the scientific peak without the ability to reason scientifically."

Chinese culture began with *Book of Changes*, which was a great work incorporating Chinese philosophy, natural and social sciences, and a crystallization of Yan Di (Emperor Yan) and Huang Di (Emperor Huang).

Book of Changes is one of the most precious contributions of Chinese culture, which has exerted a great influence on Chinese philosophy, literature, historical study, as well as natural and social sciences. As Ban Gu, the famous historian of the Han Dynasty commented, "The theory contained in *Book of Changes* is so profound that it had been passed on from the ancient times when the three sages lived."

The Chinese classics include *Book of Changes*, *Book of History*, *Poems*, *Rituals*, and *The Spring and Autumn Annals*. *Book of Changes*, with its great profundity, ranks first among them, from which one can see its position in traditional Chinese culture. Confucius attached high value to it, claiming that it was well in accordance with the laws of nature and that its profundity could never be exhausted. The *Outline of the Contents of Si Ku Quan Shu* (《四库全书总目提要》) says, "*Book of Changes* covers such a wide range of knowledge that such fields as astronomy, geography, music, art of war, and prosody can all find a place in it." *Laozi*, an outstanding work of philosophy in the pre-Qin period, attributes its in-

cisive view to *Book of Changes*. *Metaphysics (Taizuan)* by Yang Xiong, a scholar of the Han Dynasty, absorbed the merits of both *Book of Changes* and *Laozi*, which made it a much better philosophical book than its contemporaries. The far-reaching influence of *Book of Changes* can be seen from these borrowings.

Sun Simiao, one of the most famous doctors in Chinese history, once stated, "Medicine cannot be mastered before you have studied *Book of Changes*". *A Warning in Medicine* (《医门棒喝》) concluded, "The guidance to medicine is implied everywhere in *Book of Changes*", which reflects the close relationship between medicine and *Book of Changes*, as well as the great influence of the book on TCM.

Book of Changes is divided into two parts, *Yi Jing (The Text)* and *Yi Zhuan (The Commentaries)*. The former is the original work that came into being at the end of the Western Zhou Dynasty as a book on natural sciences in ancient times. It is a summary of research in the fields of natural and social sciences, history, and philosophy and a masterpiece incorporating the natural sciences and philosophy. Since it is concerned with many realms of human knowledge, such as astronomy, geography, music, and the art of war. *Book of Changes* is wide ranging in that it was intended as an investigation of the mysteries of the universe by numbers, theories and symbols. Some scholars believe *Book of Changes* is a joint work by Fu Xi, King Wen, Zhougong and Confucius, with Fu Xi drawing the Eight Trigrams, King Wen inventing the judgements to the hexagrams, Zhougong writing the text pertaining to individual lines, and Confucius composing *The Commentaries (Yi Zhuan)*. The three schools of Chinese thought, Confucianism, Taoism and Mohism, as well as other schools, are all based on *Book of Changes*.

This shows it has had an unrivaled influence on Chinese culture and science, as well as on the world.

The Commentaries (Yi Zhuan) was written during the period from the Spring and Autumn Period till the middle of the Warring States Period. It is an explanation and elaboration on *Yi Jing (The Text)* and a comprehensive expression of philosophy, and social and natural sciences before the Spring and Autumn Period, in which *The Commentaries* is a further development of *Yi Jing* as well as a refinement of it. The explanation in *The Commentaries* is a great contribution made to Chinese culture. *Yi Jing* and *Yi Zhuan* comprise *Book of Changes*, the theory of which is called the theory of changes. It is, no doubt, a magnificent classic incorporating philosophy, science and culture.

Book of Changes contains a rich stock of dialectic thought. What is more valuable is the mass of philosophy related to medicine implied in it. Therefore, medicine is said to have the same origin as *Book of Changes*.

Since ancient times, *Book of Changes* has not only received a great deal of attention from philosophers and historians, but has also been commented and interpreted by no less than 3,000 scholars since the Han Dynasty. (206 BC~220 AD) For example, *The Meaning of Medicine and Book of Changes* (《医易义》) contained in *Diagrammatical Interpretation of Leijing* (《类经图翼》) by Zhang Jingyue in the Ming Dynasty (1368~1644 AD) derived some theories from *Book of Changes*.

Book of Changes, with its profound theories and wide range of knowledge, is the source of natural sciences, the root of the correct world outlook and the origin of many branches of learning. Traditional Chinese Medicine (TCM), a branch of the natural sciences,

surely possesses an inseparable relationship with *Book of Changes*. The basic theories of the *Emperor's Canon of Medicine*, such as Yin and Yang (the negative and positive), Zang Xiang (the outside imagic representation of organs) and Qihua (the production, circulation and function of vital energy) were all derived from *Book of Changes*. In addition, *Book of Changes* provides a rich source of medical data, including records of fourteen diseases, eight medical herbs, and many terms of physiological dissection, sterility and psychological treatment. Thus, the study of the *Emperor's Canon of Medicine* cannot be accomplished without tracing it to its original source. *Book of Changes*, the *Emperor's Canon of Medicine*, and *Yi Zhuan* were written at about the same period, with the latter during the time from the Spring and Autumn Period till the Warring States Period and the former from the Warring States Period to the Han Dynasty. As a result, the *Emperor's Canon of Medicine* betrays the great influence of *Book of Changes*, with much of its philosophy imbued in the *Emperor's Canon of Medicine*. Since the *Emperor's Canon of Medicine* absorbed the essence of *Book of Changes* as well as expanded many of the theories of *Book of Changes*, it has become a masterpiece in medicine, summarizing the results of the medical research before the Han Dynasty. Many of the theories borrowed by the *Emperor's Canon of Medicine* were further improved by it, thus making it not only a medical classic but also a scientific work on biology, anthropology, philosophy and logic, as brilliant as *Book of Changes*.

Since the *Emperor's Canon of Medicine* adopted the essence of other pre-Qin works of philosophy and natural sciences, it has not only become the initiator of the theories of TCM, but has also made important progress in philosophy. As a thorough combination of phi-

losophy and medicine, it has made a great contribution to the development of TCM as well as to promoting the development of philosophy and other natural sciences.

In terms of philosophy, *Book of Changes* is the ancestor of Confucian thought. Confucianism originated from *Book of Changes*, with the former taking *Book of Changes* as the standard of morality. Consequently, there have been no Confucian scholars who have not devoted their studies to *Book of Changes*. *The Commentaries* is said to have been written by Confucius. The Classic of Taoism, *Laozi* finds its source in *Book of Changes*. *Laozi* is actually an explanation of *Book of Changes*. The famous saying in *Laozi* "Tao leads to one, one leads to two, two leads to three and three creates everything" was derived from "Birth and rebirth are called changes". All of *Laozi* was based on *Book of Changes*. Confucius followed *Book of Changes'* doctrine on Being Positive while Taoism followed that of Negative, thus giving rise to the different doctrines of two schools. The views of Mohism were also based on *Book of Changes*, with the main idea that the changes from rise to decline are the natural law of development. This is in correspondence with the doctrine of changes taught by *Book of Changes*. These make it clear that the three schools of thought in Chinese culture all originated from *Book of Changes* and that *Book of Changes* has no rival in the range it covers and the influence it has had on Chinese culture.

Though *Book of Changes* includes some waste, its philosophical thought, as well as implication on medicine, has exerted a great influence on traditional Chinese culture. Hence, *Book of Changes* can be said to be the source of TCM. This is why some people claim that "medicine equals *Book of Changes*". Since every branch of learning has its own origin, it cannot be completely mastered without being

traced to its origin. Only by knowing its origin can one know the occurrence and development of this branch of learning and make further developments. The *Emperor's Canon of Medicine* is the initiator of the theories of TCM, yet it has an origin of its own. *Book of Changes*, as the ancestor of Chinese culture, surely has exerted a great influence on TCM. *Book of Changes*, with a great influence on the *Emperor's Canon of Medicine*, plays an important role in the formation and development of the theories of TCM. As it adopted the essences of the theories of Yin and Yang and Wuxing (the Five Elements) of the pre-Qin period, which TCM has taken as its basic theory, *Book of Changes* must have a peculiar kinship with TCM.

The Commentaries was compiled between the Spring and Autumn Period (790 ~ 476 BC) and the Warring States Period, (475 ~ 221 BC) while the *Emperor's Canon of Medicine* was written between the Warring States Period and the Han Dynasty. Since the two books were basically contemporary, the *Emperor's Canon of Medicine* fully adopted the essence of *Book of Changes* (including the theory of Yin and Yang and the Five Elements, which came into being during the Warring States Period) and combined this creatively with medicine, rendering TCM an independent branch of natural science with a high level of theoretical reasoning. With the great contributions made to the health of the Chinese people, the *Emperor's Canon of Medicine* has proved to be a great work of TCM. The *Emperor's Canon of Medicine* and *Book of Changes* have influenced each other, with the former influenced by the latter as well as spurring further developments in it. The *Emperor's Canon of Medicine* greatly promoted the development of TCM. Therefore, medicine has inherited a great deal from *Book of Changes*, with the former originating from as well as fostering the

development of the latter. There have been no doctors who have studied the *Emperor's Canon of Medicine* without making reference to *Book of Changes*. Therefore, to make a further study of the *Emperor's Canon of Medicine*, as well as the theories of TCM, there is every necessity to study *Book of Changes*.

It is a pity that *Book of Changes* is quite difficult to understand. Furthermore, some waste can be found in it. It seems that these shortcomings have overshadowed its value. Yet, its value can never be completely covered up by its defects. To further research the *Emperor's Canon of Medicine*, it is necessary to study *Book of Changes* so that breakthroughs can be made in the study of the theories of TCM, and the essences of it can be carried forward.

Chapter Two

The Author of *Book of Changes* and Its Place in History

Book of Changes comprises two parts, *The Text* and *The Commentaries*. The linear signs, judgement to the hexagrams, and the text pertaining to the individual lines from *The Text*. And *Zhuan* (《象》 the commentary on the Decision), *Xiang* (《象》 the Image symbol), *Wen Yan* (《文言》 commentary on the Words of *The Text*), *Xi Ci* (《系辞》 the Appended Judgements), *Shuo Gua* (《说卦》 Discussion on the Trigrams), *Xu Gua* (《序卦》 the Structure of the Hexagrams) and *Za Gua* (《杂卦》 the Relationships of the Lines to One Another), altogether seven in style, form the *Zhuan* (*The Commentaries*). Therefore, these articles are known as the Seven Wings. In the Han Dynasty, the scholars added the three articles or *Yi Wei* to *Yi Zhuan* (*The Commentaries*), turning the Seven Wings into Ten Wings.

The origins of *Book of Changes* are hazy. There were said to be three versions of *Book of Changes* in ancient times.

The first was *Zhou Yi*, the version of *Book of Changes* still in current use. It was invented by Fu Xi. *The Text* contains sixty-four Hexagrams, with Qian Gua as the first. Though it has no verbal explanation, it is as transparent as if it had. Regarded as the ancestor of Chinese culture and based on many schools of Chinese thought, it

is a gem in Chinese culture.

The second was *Lian Shan Yi* (《连山易》). It was compiled by Shen Nong and also was called *Xia Yi*. It takes Gen Gua (Shan Gua) as the first trigram. There are eight trigrams and sixty-four hexagrams. The name of the book refers to Shen Nong, who was also known as Yan Di (Emperor Yan) and had the surname of Shan Shi. That version was adopted by the Xia Dynasty. It is no longer extant.

The third was *Gui Zang Yi* (《归藏易》). It was the version by Huang Di (called Yao and Shun), the first trigram of which was Kun Gua. The political system of the Shang Dyansty was based on it. It is no longer extant.

Since the earliest linear signs of *Book of Changes*, dating to the Zhou Dynasty, were recorded on tortoise shells, Ding (caldron'), animal bones, and shells of clams, which were perishable, they are almost completely lost to time. Fortunately, some are still intact on containers made of bones and horns, unearthed in the relics in Hainan, Jiangsu Province. Those found on silk books unearthed in the third tomb at Ma Wang Dui, Changsha, Hunan Province in 1973, though put in different order from that in current use, are in fact another record of the hexagrams of *Book of Changes*.

As for the author of *Book of Changes*, no agreement has been reached. In the *Great Treatise on Yi*, the earliest mention of the author of the book can be found, saying that, "When Fu Xi came to the throne, he observed the images of the heavens and examined the laws of the earth. Taking intuition from himself and objects other than him, he invented the Eight Trigrams." In *The Book of Han: Art and Writings* (《汉书:艺文志》), Ban Gu said that the theories of *Book of Changes* are so profound that they had been passed on

from ancient times when the three sages lived, claiming it was compiled by the three ancient sages. *Huai Nan Zi: Lectures on the Abstracts* (《淮南子:要略训》) also insists the hexagrams were invented by Fu Xi, claiming that luck and disaster can be predicted through the eight trigrams and Fu Xi changed them into sixty-four hexagrams. Thereafter, the view that the eight trigrams were invented by Fu Xi has remained popular. Later, there arised another view that the sixty-four hexagrams were invented by King Wen, who also wrote the judgements to the hexagrams, and that the text pertaining to individual lines was composed by Zhou Gong and *The Commentaries* was written by Confucius. After the May Fourth Movement, (1919 AD) it was accepted that *The Text* was compiled in the Shang or Zhou Dynasty, not by Fu Xi or King Wen. According to an analysis of the text pertaining to the individual lines, it was a long period from the collection of data to the completion of the book. Therefore, it could not have been written by one person. Instead, it must have been compiled from contributions by many people.

Regarding the author of *The Commentaries*, it is said to have been written by Confucius. The earliest mention of this view can be found in *Book of Historians: Biography of Confucius* (《史记:孔子世家》), saying that Confucius took to *Book of Changes* in his later years, compiling *Tuan*, *Xi Ci*, *Xiang*, *Shuo Gua* and *Wen Yan*. The influence of this statement had been widespread for more than 1,000 years, until someone threw doubt on it in the Song Dynasty. Ouyang Xiu doubted that *Xi Ci* had been written by Confucius, arguing that the different parts of *The Commentaries* do not reflect one aothor at one period.

The Commentaries, comprising Seven Wings, were written in

different times. According to the analysis made by scholars on *Book of Changes*, *Zhuan* was written during the Spring and Autumn Period. The analysis of *Book of Changes* printed on the silk books unearthed from Ma Wang Dui Han Ruins in Changsha in 1973 further proved that other parts of *The Commentaries* were accomplished during the time between the Spring and Autumn Period and the middle of the Warring States Period. Therefore *The Commentaries* must have been written during the time between the Spring and Autumn Period and the middle of the Warring States Period. (based on *A Study of the Ideas in Book of Changes* 《周易思想研究》 by Zhang Liwen)

Since ancient scholars concentrated their minds merely on the pursuit of knowledge, without paying any attention to their own fame, they often compiled their books in the name of ancient sages such as Fu Xi, Shen Nong, Huang Di or Confucius. As a result, the authors of many classics cannot be determined.

Chapter Three

The Structure of *Book of Changes* and Its Main Content

Section 1 The Structure of *Book of Changes*

Book of Changes is composed of *Yi Jing (The Text)* and *Yi Zhuan (The Commentaries)*. *Yi Jing* is made up of the judgements and the text pertaining to individual lines. *The Text* (called the Yao in ancient times) is called the text of divination, comprising sixty-four hexagrams. Each of the hexagrams has six places, forming 360 places altogether. Qian Gua and Kun Gua have seven places each. Under each hexagram, the following are listed: the Image of Symbols, the name and the judgement. In every place, the title and text are provided. The title of a place is composed of two words, with one indicating the order of the place and the other showing the nature of it. The places are put in an upward order. The first place is titled "one", the second "two", third "three", the fourth "four", the fifth "five", and the sixth "up". The nature of the place is designated by Nine (Yang) and Six (Yin). The judgements and texts amount to 450 articles, more than 4,900 words (*A Note on Book of*

Changes (周易古经今注)). They were written during the period from the early to late Zhou Dynasty by different people.

The Commentaries is composed of seven types of essays, Tuan I, Tuan II, Xiang I, Xiang II, Wen Yan, Xi Ci I, Xi Ci II, Shuo Gua, Xu Gua and Za Gua, altogether ten essays (termed Ten Wings). They were compiled during the Eastern Zhou Dynasty.

Book of Changes is quite valuable in respects of history, philosophy, and social and natural sciences, as a record of the social, economical and natural conditions from the Shang Dynasty to the end of the Western Zhou Dynasty. In terms of economical condition, it took down facts about agriculture, husbandry and fishery. It was concerned with such aspects as enfeoffment, the founding of states, classes, marriages, family, and clan. It also touched such aspects as conventions, religious beliefs, customs, sacrifices, food, and clothing, as well as wars, defense and jurisdiction. In all, it covers an extremely wide range including ideology, morality and political views.

Section 2 The Main Content of *Book of Changes*

The Text includes: the judgements to the sixty-four hexagrams and 386 texts pertaining to individual lines.

The Commentaries includes Zhuan, Xiang and Wen Yan

I. Zhuan: including two parts giving interpretation of only the symbols, titles and judgements to the hexagrams without commenting on the texts pertaining to individual lines. It is intended as an explanation of the implication of the hexagrams.

II. Xiang: also including two parts; written to explain the judgements and texts pertaining to individual lines. Xiang can be divided into Xiang Senior and Xiang Junior, with the former explaining the judgements and the latter explaining the texts pertaining to individual lines.

III. Wen Yan: an explanation of the two hexagrams Qian and Kun.

IV. Xi Ci: composed of two parts, it is an explanation of the judgements and texts pertaining to individual lines. It is an important part of the Seven Wings (*Yi Zhuan*), implying many precious philosophical reasons and putting forward many important propositions such as Yin (the negative and feminine) and Yang (the positive and masculine) being called Dao, birth and rebirth being called changes, and poverty leading to changes, change leading to fitness, and fitness leading to eternity.

V. Shuo Gua: an interpretation of symbols and judgements of the hexagrams.

VI. Xu Gua: an explanation of the order of the sixty-four hexagrams.

VII. Za Gua: an explanation of the contradictory judgements of the sixty-four hexagrams.

Chapter Four

The Nature of *Book of Changes*

Book of Changes is a philosophical work, melding philosophy, natural and social sciences into one. *The Text*, though a book of divination, is the cradle of the earliest philosophical views in China. The philosophical view of *Book of Changes* embodies a change from divination to the image of the heavens and human beings.

The Text, or later *The Commentaries*, further developed and supplemented the ideas of Yin and Yang implied in it and after merging itself into the current of the ideas of Yin and Yang, turned from a book of divination into a great philosophical work, having guided the philosophy, natural and social sciences of China over thousands of years.

The Commentaries is meant for the explanation of *The Text*. *The Text* was set against the background of the slavery society while *The Commentaries* arose from the background of the early feudal society.

The Text was written in the early Shang and Zhou dynasties, when the slavery society was at its peak of prosperity and the Zhou Dynasty was at its climax. Since there was at the time a social stability, great developments took place in the aspects of astrology, calendar sciences, agriculture and industry. For example, in astrology and calendar sciences, there can be found in the Jia Gu Wen inscriptions on bones or tortoise shells of the Shang Dynasty records of not-

ing data by Gan Zhi, observing the sun by Gui Biao, (an ancient Chinese sundial), and recording time by Lou Ke, as well as solar and lunar eclipses. With improvement in productivity, appeared developments in scientific research, providing the premise for the occurrence of the scientific reasoning of *The Text*. It was under such a social background that the philosophical basis of *The Text* was formed. However, since the Shang Dynasty was still in the slavery society with a comparatively low level of productivity and science, the understanding of the world by the people was still limited and such views of religion and divination was inevitably reflected in *The Text*. This is why *The Text* took the form of a book of divination.

Yet, the divination in *The Text* was nothing but an external form. The text of divination reflects the accumulation of experiences from social and productive activities and observations of nature. Therefore, under the outside appearance of a book of divination, its true value is disguised. Though *The Text* took the form of a book on divination, the judgements betray some content against beliefs in ghosts and gods. From this fact, it can be seen that *The Text* was not merely a book of divination.

In short, the nature of *Book of Changes* should be viewed in this way: in form, it is a book on divination, in content, it is a record of the social and productive activities, as well as of the scientific research, in the Shang and Zhou dynasties, with the kernel of early Chinese culture within it. Therefore, it is the ancestor of early Chinese scientific thoughts, philosophical views and culture.

Yi Zhuan, (*The Commentaries*), includes Tuan I and II, Xi Ci I and II, Wen Yan I and II, Shuo Gua I and II, Xu Gua I and II, Za Gua I and II, which all came into being during the time between the Spring and Autumn Period and the Warring States Period. At

that time, as a result of the use of iron, productivity was greatly improved, with agriculture and industry continuously developing to higher levels. With the prosperity of the economy, new ideas in accordance with the feudal society began to occur. The scholars became actively involved in heated academic debates, with schools of thoughts such as Confucianism, Taoism, Yin and Yang contending. Wu Xing (Five Elements) adequately developed. Due to the great progress made in productivity, scientific reasoning and philosophical views were developed. It was under such a background that *The Commentaries* came into being. The author, adopting the ideas of Yin and Yang, the Five Elements and the thoughts of different schools, made some improvement and refinement to *The Text*. *The Commentaries*, making use of *The Text*, adequately absorbed and developed the scientific and philosophical views of the time and collecting all the philosophical achievements since the pre-Qin period, turning *The Text* into a comprehensive work on philosophy and natural and social sciences. As an imperishable work of Chinese culture, it has greatly influenced and pushed forward the development of Chinese culture, science and technology in the past 2,000 years.

Chapter Five

The Basic Theories of *Book of Changes*

I. The successive movement of the inactive and active operations constitute the course of the things.

This shows that there is a clear expression of the view of Yin and Yang. This is the basis of the theories of *Book of Changes*, as both the basic philosophical theory and the basic theory of the sixty-four hexagrams. Yin and Yang embody the relationship of unity of opposites between them. This unity of opposites was not only expressed in the explanation of the judgement and text, but also embodied by the Yin places and the Yang places. For example, "--" is a Yin position and "-" a Yang position. The changes of the sixty-four hexagrams lie in the interchange between the two kinds of positions. The statement that "the successive movement of inactive and active operations constitutes what is called the course of things" makes clear that the shift between the two gases of Yin and Yang is the basic law of the universe. *Book of Changes* further points out, "the shift between strength and weakness gives rise to every change in the world" (*Great Treatise on Yi*), "Yin and Yang are unified and strength and weakness are joined into one". Strength and weakness are equal in meaning to Yin and Yang. These statements agree to the opinion that Yin and Yang are the source of every change.

The strong and the weak displace each other, leading to changes and transformations in the figures (*Great Treatise on Yi*). "Yin and Yang unite according to their qualities and there comes the embodiment of the result by the strong and weak." Here the strong and the weak means Yang and Yin, which shows Yin and Yang are the origin of all changes. What is unfathomable in the movement of the inactive and active operations is spiritual, which shows that Yin and Yang are the bases of the movement of the universe.

II. "Poverty leads to change, change leads to fitness, and fitness leads to eternity."

Taken from the *Great Treatise on Yi*, this is an important proposition in *Book of Changes*, emphasizing the importance of change. The theory of *Book of Changes* was founded on the unity of opposites between Yin and Yang, with change as its essential idea. The two ideas form the ideological foundation of *Book of Changes* and serve as the spirit of it, exerting a great influence on the development of the natural sciences of China. The sayings "the shift between strength and weakness gives rise to change", and "the alternation between the sun and the moon brings about brightness", demonstrate that *Book of Changes* held the view that everything in the world is in constant movement, which is a very valuable idea. *Book of Changes* also stresses that interchange is the major means of changing. For example, it says "the interchange between the heavens and the earth makes everything compatible with everything else", "the big will come after the small disappear". (*Tuan in Tai Trigram of Yi*)

III. "Production and reproduction is the process of change"

Book of Changes emphasizes that the alternation between Yin and Yang gives birth to everything. "Birth does not come out of

emptiness. Instead, it's a result of the interchange (movement)" Therefore, the book says, "The most important contribution made by the heavens and the earth is birth" and "when the heavens and the earth are united, everything is prosperous." This means "the interchange between the heavens and earth makes everything prosperous". This idea is the predecessor of the view held by Laozi "Tao leads to one, one leads to two, two leads to three and three creates everything."

IV. "To look up to contemplate the brilliant forms exhibited in the sky and look down to survey the pattern shown on the earth... Near at hand, in his own person, he found things and the same at a distance, in things in general"

Through the observation of images, *Book of Changes* has obtained the ability to understand the implications of the heavens and the hints given by gods. The statement "a gentleman observes the images and thinks about the judgement they imply", "Good and bad luck can be predicted from the images shown by the heavens", and "the sages followed the change of the heavens and earth" illustrate that *Book of Changes* shows a strong sense of materialism. Therefore, "Xiang is so called because the images are just like the actual objects". *Book of Changes* pays particular attention to the imitation of the heavens and the earth, as well as the observation of everything, saying "*Book of Changes* is in correspondence with the heavens and the earth" and "observe the rule governing it when there is some change". That means things in the world are understood through the observation of the images shown by the heavens and the earth. This shows that the world outlook taken by *Book of Changes* is of materialism, regarding the heavens and the earth as the origin.

Chapter Six

Book of Changes and the Theories of TCM

Section 1 The Particular Relationship between *Book of Changes* and TCM

There is an old saying in TCM, "Medicine cannot be approached without studying *Book of Changes*, *Book of Changes* implies the basic theory of medicine, and medicine is practiced by applying the theories of *Book of Changes*". The ideological system and the fact that the *Emperor's Canon of Medicine* adopts in a large part the judgements and propositions of *Book of Changes* show that there is a particular kinship between TCM and *Book of Changes*. *Book of Changes* is the source of the theories of TCM with the basic theories all derived from it. The theories such as the Five Elements, Zang Xiang, Qi hua, Yun Qi and the causes of diseases held by TCM can all find their origins in *Book of Changes*.

1. The theory of Yin and Yang in TCM arose from the Yin and Yang opposition between the Yin positions and Yang positions, and the philosophy of Yin and Yang is implied by the hexagrams of *Book*

of Changes.

2. The six positions and the Grand Terminus and non-terminus in *Book of Changes* are the foundation of the theories of Jing Qi and Yin and Yang in TCM.

3. The images of the six positions and hexagrams are the source of the theory of Zang Xiang of TCM.

4. The six positions have a dialectical relationship with the six channels, their systems and differential diagnosis in accordance with the theory of channels.

5. The oppositions between Qian and Yuan, Kun and Pin, Yin positions and Yang positions are the original form of the pattern of Gan Zhi, the theory of Qihua and Yun Qi.

6. The ideas of Qian and Kun, the heavens and earth, in *Book of Changes* are the origin of the monism in TCM.

7. The concepts of numbers and doctrines in He Luo are closely related to Jiu Gong Ba Feng, Midnight-noon Ebb-flow, Efficacious Tortoise 8 method, and Seven Damages and Eight Benefits in TCM.

8. The two hexagrams of Kan and Li are closely related to the relationship between liver and kidney, the theory of gate of life, and gases between kidneys in TCM.

9. He Luo is related to the theory of the Five Elements and the numbers of generating in TCM.

10. The positions of heaven, earth, and human beings in *Book of Changes* have a close relationship with the three dimensions in TCM and serve as the origin of the view of entirety in TCM.

11. The theory of circles in *Book of Changes* is the origin of the movement in circles in TCM.

12. The view of moderation in *Book of Changes* is closely related to the theories of balance and coordination in TCM.

Section 2 The Kinship Between the Theoretical System of *Book of Changes* and the *Emperor's Canon of Medicine*

Book of Changes was written before the *Emperor's Canon of Medicine*. As a natural consequence, the philosophical theory and the origin of natural sciences is imbued in the *Emperor's Canon of Medicine*. Having absorbed and developed the essences of *Book of Changes*, the *Emperor's Canon of Medicine* reflects the spirit of science.

The relationship between *Book of Changes* and the *Emperor's Canon of Medicine* is demonstrated in the following aspects:

1. The influence of *Book of Changes* on the theory of Yin and Yang of the *Emperor's Canon of Medicine*.

Though *The Text of Yi* does not mention the concept of Yin and Yang explicitly, it is implied in the ideas of strength and weakness as well as the judgements and positions. *The Commentaries* proposes explicitly the concepts of Yin and Yang. For example, the *Great Treatise on Yi* says "the successive movement of inactive and active operations constitutes what is called the course of things." This means contradiction and mutual effect are the propulsion of the developments of things. *The Commentaries* is a great philosophical work. *Zhuangzi: Essay on the world* (《庄子:天下篇》) says "the purpose of *Book of Changes* is to expound the theory of Yin and Yang", i. e., the theory of Yin and Yang is the nucleus of *Book of Changes*. In that book, the concepts of Yin and Yang are expressed

by Yao (the two positions), -- (Yin), and — (Yang). With this opposition, unification, rise and decline, as well as change, depend on the alternation of the two positions. The concepts of Yin and Yang were proposed by Bo Yangfu in explaining earthquakes with the concept of the two gases of Yin and Yang. The gases of Yang are suppressed and cannot be released while the gases of Yin approaches and cannot be evaporated. As a result, an earthquake takes place (*Guo Yu: Zhou Yu* 《国语:周语》). Later, the statement by Laozi "everything is a combination of Yin and Yang" further demonstrated the unity of opposites between the two. Yet, it is *The Commentaries* that develops the concepts of Yin and Yang into an integrated philosophical system. One of the properties of *The Commentaries* is that the relationship of Yin and Yang is expressed by the two positions of Yin and Yang, making the concepts a philosophical category, instead of a mere term of divination, and *Book of Changes* a great philosophical work. The philosophical idea of *Book of Changes* is that the contradiction and alternation between Yin and Yang exist in everything including social phenomena, expanding the connotation of the concepts of Yin and Yang. That is to say the unity of opposites between the two determines the occurrence, development and change of everything.

Under the influence of *Book of Changes*, as well as its idea of Yin and Yang, peculiar at the time, the *Emperor's Canon of Medicine* adopts the essences of the theory of Yin and Yang. The contribution made by the *Emperor's Canon of Medicine* to the development of the philosophical concepts of Yin and Yang lies in that it combines those philosophical concepts with medicine and makes this the basic theory of TCM. Not only does the *Emperor's Canon of Medicine* devote a part to the discussion of the concepts of Yin

and Yang, but the whole of it was also imbued with the philosophical concepts of Yin and Yang. In this respect, it was a good example of the combination of medical and philosophical theories. In *On the Image of Yin and Yang* (《阴阳应象大论》), *On the Difference and Similarity of Yin and Yang* (《阴阳离合论》), and *Seven Essays* (《七篇大论》), much can be found devoted to the discussion of Yin and Yang. The propositions put forward embody a high level of philosophical reasoning. For example, *Plain Questions: On the Difference and Similarity of Yin and Yang* (《素问: 阴阳离合论》) says, "Yin and Yang govern the heavens and the earth. They guide everything, are the cause of every change, and are the initiator of birth and death, ..." *Plain Questions: On the Difference and Similarity of Yin and Yang* (《素问: 阴阳离合论》) summarized the dialectic relationship between Yin and Yang by way of the separation and combination of Yin and Yang, implying the unity of opposites. It further proposed, "Yang is the base and Yin is the guidance," further expounding the relationship between Yin and Yang. Additionally, the *Emperor's Canon of Medicine* combines the concepts of Yin and Yang with the four seasons of the nature with the human body, and puts forward the concepts of Yin and Yang in the four seasons and organs of the human body, applying the philosophical concepts of Yin and Yang to the explanation of medicine. This extraordinary development of the concept of Yin and Yang is a great contribution made by the *Emperor's Canon of Medicine*. It can even be regarded as surpassing *Book of Changes*.

2. The influence of *Book of Changes* on the theories of Zang Xiang in the *Emperor's Canon of Medicine*.

Book of Changes is structured on the basis of the symbols of hexagrams and positions, which serve as the images of concrete ob-

jects. *The Text* takes the symbols of hexagrams or positions as the images of things. In this sense, *The Commentaries* is in fact a book of "images". Just as the *Great Treatise on Yi* says, "Book of Changes is about images. Images represent concrete things." There are numerous things of a great variety in the universe, but if one masters the rules of the abstraction of images, it will be easy to find the systematic rule of change among the things. This is why the sixty-four hexagrams and 384 positions can be employed in the explanation of nearly everything. Therefore, the images in *Book of Changes* are images of all the things in the universe. Those images are abstracted from concrete objects through the observation of things and phenomena. In this way, a hexagram or a position can be utilized to categorize many kinds of things. From this fact, one can see that the images in *Book of Changes* are representative of many things. Consequently, the rules can be grasped, changes can be controlled, and the natural laws can be mastered through those images. Besides representing the heavens, and objects, the images in *Book of Changes* also represent human beings (social behavior). Thus, the hexagrams in *The Text* can be said to be a miniature of the relation between the images of the heavens, objects and human beings.

Adopting the images of *Book of Changes*, the *Emperor's Canon of Medicine* has developed the peculiar theory of Zang Xiang, which belongs to TCM alone, providing the cornerstone for the formation and development of the fundamental theories of TCM. Zang refers to the organs of the human body; Xiang refers to the outside representation of the organs. Since Xiang is the outside representation of the organs, through Xiang, those organs can be examined. This is how the theory of Zang Xiang is applied in the diagnoses. The theory of Zang Xiang is concerned with how to study, through

the outside representation, the physiological laws governing how the human organs contract diseases as well as their relationship. The theory of Zang Xiang has the following properties: a. it correlates the images of the heavens with the representation of the human organs, as is stated in *Plain Questions: Liu Jie Zang Xiang Lun* (《素问:六节藏象论》), "the heart is the essence of life". It is in accordance with gases of summer" unifying Zang Xiang with the images of nature; b. It unifies the outside representations with the images of gods, of which, according to the theory of Wu Shen (five gods), Zang is one. The five gods exist inside the five organs. Through the image of the five gods, the state of the five organs can be examined; c. it studies the state of the disease through the hexagrams. For example, through Ji Ji (Completion) and Wei Ji (Before Completion), the discomfort of the heart and kidney can be diagnosed; through Qian (the Creative) Gua and Kun (Resting in Firmness) Gua, the disease of excessiveness of Yin and Yang can be judged; through Xun (Gentle Penetration) Gua, the disease of the liver can be examined. The above mentioned examples demonstrate that the *Emperor's Canon of Medicine* applies the theory of images to the theory of Zang Xiang in TCM. This contributed a great deal to the development of TCM.

3. The influence of *Book of Changes* on the theory of Qi Hua (the production, circulation, and function of vital energy)

The positions (Yao) in *Book of Changes* represent Qi Hua, since the change of the positions of the signs brings about the change of hexagrams. The positions represent Qi Hua of Yin and Yang. Since the change of the hexagrams is caused by a shift of the positions. The positions initiate Qi Hua. *Book of Changes* is a work on changes, which mainly lie in the changes of hexagrams, the causes

of which are changes in positions. The changes in positions give rise to the Qi Hua of Yin and Yang.

The increase or decline of "six positions (Yao)" causes the following:

"We see its subjects as the dragon lying hidden in the deep. It is not the time for activity." "The dragon exceeds the proper limits; there will be occasions for repentance." "We see its subjects trading on hoarfrost;—the strong ice will come by and by." These can be interpreted as, "the pulling of the hair can cause the movement of the whole body". Production and reproduction is the process of changes. If one feels poor, he will seek changes that will cause communication that will remain for ever". These show that Qi Hua originates in *Book of Changes*.

The theory of Qi Hua activity of vital energy originated in *Book of Changes*. This theory, based on Qi Hua of the Yin and Yang of Taiji (the Grand Terminus) in *Book of Changes*, has developed the theories of Yun Qi and Qi Ji Sheng Jiang. The theory of Yun Qi centers on the Qi Hua of the nature, explaining the relationship between time, geography and disease through the theory of Wu Yun and Liu Qi. The Theory of Qi Ji Sheng Jiang concentrates on the elaboration of the rise and fall of the spirit and gases of human organs. The theory of Qi Hua is imbued in such fields as physiology, pathology, diagnostics and treatment as the nucleus of the basic theory of TCM. What is peculiar about this theory lies in that it combines the Qi Hua of nature with that of the human body. It is an improvement on the treatment offered in *Book of Changes*. In brief, *Book of Changes* has exerted a great influence on the *Emperor's Canon of Medicine*, which offers a brilliant reflection on the influence from *Book of Changes*.

These facts show that the *Emperor's Canon of Medicine* is the main source of the theories of TCM. The *Emperor's Canon of Medicine* originated from *Book of Changes* and played an important role in the formation and development of theories of the TCM.

Chapter Seven

The Similarities Between Medicine and *Book of Changes*

The similarity between *Book of Changes* and TCM lies in the common source of their reasoning patterns in such areas as views on movement, entirety, and balance.

Section 1 Similarity in the View of Movement

Book of Changes stresses the pattern of a circle. Some scholars emphasize that the view of the pattern of the circle in *Book of Changes* is closely related to the reasoning of TCM. For example, Liu Changlin claims that *Book of Changes* implies the pattern of the circle, referring to the fact that there is a rule that makes things move in a circle in the universe. The sixty-four hexagrams are arranged in a large circle, with the six linear signs in each hexagram forming a small circle. Circles can be found in everything. For example, *Tai trigram of Yi* says, "There is no state of peace that is not liable to be disturbed; without going away, there will be no re-

turning". And the *Great Treatise on Yi* says, "The endless going and returning is called communication. The sun goes and the moon comes, while the moon goes and the sun comes..." These statements reflect the phenomena of the pattern of a cycle. The Map of Taiji counts as the representation of the pattern of a cycle, implying the recursiveness of the cycle. The pattern of the cycle is the repetition of the cycle in motion. There is a cycle of going and coming in everything. This idea of a cycle has great influence on the theory of TCM. First, the pattern of a cycle lays a foundation for the view of entirety, which is the entirety of a cycle. This view of it is a representation of a cycle. The Yin Yang and Five Elements theories were more imbued with the view of the pattern of a circle. The mutual influence in Yin and Yang and the government between them are examples of the phenomena of a cycle. The theory of time in TCM is also a concrete representation of the circle shown in *Book of Changes*.

Section 2 The Similarity of Integrity

The three dimensions of man, nature, and society in TCM find their source in the three-dimensional view of man-nature-society in *Book of Changes*. The nature of this view is the view of integrity, which is the center of the theory of systematicity. The primitive theory of systematicity has arisen from the system of *Book of Changes*. The theory of systematicity is a theory as to how to grasp the dynamic relationship between the whole and its parts. *Book of Changes* is an open system storing various kinds of informa-

tion, in which the sixty-four hexagrams are a large system of information, with every hexagram as a smaller system of information forming a part of the larger one. A single change in any part of a system will lead to the change of the larger system. As in *Book of Changes*, the change of any line in the trigram will influence the sixty-four hexagrams. This shows that the system is not only integrated, but also dynamic. It is integrity and harmony in motion.

The Eight Trigrams and sixty-four hexagrams are both systems implying the basic principle of the modern theory of systematicity and exerting a deep influence on the formation of the theory of systematicity in the *Emperor's Canon of Medicine*. Examples are the theories of the Five Elements, the doctrine of viscera-state, the relationship between the twelve channels, and the relationship between the most important drugs and less important drugs in TCM, all using the patterns and views of the system to grasp the rules governing the physiology and pathology of the human body. These facts demonstrate that the view of integrity pays attention to the integrity of the human body itself as well as the unification of it with the outside world. The view of integrity is employed and developed out of the theory of systematicity in *Book of Changes*.

Section 3 The Similarity of the View of Balance

Book of Changes heavily emphasizes balance, moderation and symmetry. The symbols of trigrams and hexagrams are arranged in symmetry, as shown by the following:

Qian ☰	Kan ☵	Zhen ☳	Xun ☴
Kun ☷	Li ☲	Gen ☶	Dui ☱

Furthermore, the arrangement of the symbols of 12 informative hexagrams also shows the symmetry and balance of the rise and decline of Yin and Yang.

Fu ☱	Lin ☴	Tai ☵	Da Zhuang ☱	Guai ☱	Qian ☰
Gou ☱	Dun ☱	Pi ☷	Guan ☱	Bo ☱	Kun ☷

From these, it can be seen that the Eight Trigrams in *Book of Changes* reflect the property of balance, symmetry and complementary nature of Yin and Yang in *Book of Changes*, laying the foundation for the theory of balance in TCM. This theory is built on the basis of the unity of opposites, including the balance of nature, as well as the balance inside and outside the human body. The balance of nature is demonstrated by the theory of Yun Qi, referring to the balance of weather through the rules governing Sheng (excessiveness) 胜, Fu (repetitiveness) 复, Yu (blocking) 郁, and Fa (breaking) 发. The balance inside the human body indicates the relation between organs, the adjustment of Jing Luo and the coordination and balance obtained through Qi Ji Sheng Jiang. The source of the theory of balance in TCM mainly lies in the theory of balance of Yin and Yang in *Book of Changes*, which is a theory of the unity of opposites as well as the unity in balance embodied in the view of nature, society and the human body in TCM. Besides being embodied in the Eight Trigrams, the Sixty-four Hexagrams, and the Map of Taiji, the theory of balance between Yin and Yang is also implied in the wording of the book, as exemplified by the statement "the Yang hexagrams have more Yin positions and the Yin hexagrams have

more Yang positions. What's the reason for this?" (*Great Treatise on Yi*). *Feng in Zhuan of Yi* says, "When the sun has reached the meridian height, it begins to decline. When the moon has become full, it begins to wane. The interaction of heavens and earth is now vigorous and abundant, now dull and scant, growing and diminishing according to the seasons. How much more must it be so with the operations of men?"

The view of moderation is central to the view of balance. The purpose of moderation is to reach a balance. Since *The Commentaries of Yi* was written mainly by Confucian scholars, it was natural that it adopted the idea of the Doctrine of the Mean from Confucian teachings, serving as the basis of the theory of moderation. For example, the *Great Treatise on Yi* says, "Yin and Yang can be unified and strength and weakness can be joined together." *The Commentaries* holds that Qian means strength and Kun means weakness. *Treatise of Remarks on the Trigrams of Yi* says "water and fire contribute to the one object, thunder and wind do not act contrary to each other; mountains and collections of water exchange their influence." *Qian trigram in Tuan of Yi*, "The conditions of great harmony are preserved in union. The result is what is advantageous, correct and firm," stressing the harmony of Yin and Yang including the balance and symmetry in quantity and harmony and unity in quality. Influenced by the view of moderation in *Book of Changes*, the idea of moderation is reflected in both the basic theory and clinical treatment in TCM. This is in fact an embodiment of the theory of balance. The emphasis of balance between Yin and Yang in the basic theory is shown by the statement "in the relationship between Yin and Yang, if Yang is too strong, the two will not be in harmony, just as there is only spring without autumn, or winter

without summer". The way to overcome the disharmony is moderation. Harmony, among the eight ways, is one of the most popular ways of treatment. Examples such as harmony between the superficial and the interior adjustment of nourishing Qi and protecting Qi, and the harmony between the liver and spleen all belong to this category of moderation. Besides, the adjustment of Yin and Yang to keep them balanced can also be categorized as the treatment by way of moderation. The purpose of moderation is to balance Yin and Yang. All these show that the idea of moderation in *Book of Changes* has exerted a profound influence on the basic theory and clinical treatment of TCM.

Chapter Eight

The Contemporary Study of *Book of Changes*

There have been very few annotations and collations in the study of *Book of Changes* in modern times. The focus of the study has been shifted to the study of it in relation to various branches of the natural science, i.e. the study of it on different levels and from different perspectives. Since *Book of Changes* is a comprehensive work concerning different branches of learning, serving as a guide to their methodologies, it is closely related with natural sciences, philosophy and social sciences. As a result, nearly all branches of learning go to *Book of Changes* for innovative progress and inspiration.

One of the characteristics of the contemporary study of *Book of Changes* is that the focus has been shifted from the annotation on and collation of it to research into its underlying theory as well as the images and numbers, including the basic principles under the arrangement of the trigrams, the mathematical mystery in the He Map and the Luo Writing, the implication of the Taiji Map, the abstruse connotation of the images, numbers and its theory, and their influence on modern science. For example, some scholars have found an astrological background of the Map of Taiji, He Luo and the Eight Trigrams, derived from the laws governing the movement of the moon.

Book of Changes implies the philosophy governing the evolution of nature, the changes of society and the genesis of life. The mystery of this has been the subject of study undertaken by Chinese and foreign scholars. Early in 17th century, *Book of Changes* was translated into Latin. Since the 19th century, scholars in more and more countries have begun to study this book. It has been translated into French, Japanese, German, Korean, Latin and Dutch, as well as other languages. It is particularly appreciated in Europe, Japan, America and Korea. There are seven versions circulating in the U. S. A., with annual sales up to 100,000 copies. Japanese pay more attention to the theory of the book while Europeans and Americans lay more emphasis on the pursuit of the psychological mystery in it through the study of the divinations. The great German philosopher Hegel (1770~1831) said in his autobiography that his theories were inspired by the theory of the rise and decline of Yin and Yang in *Book of Changes* (see *The Scientific Book of Changes* 《科学无玄的周易》 by Shen Yijia).

The Eight Trigrams and Taiji Map imply the theory of relativity, which may have given some inspiration to Einstein, who expressed great admiration for *Book of Changes*.

In the *Collections of Einstein* (《爱因斯坦全集》), there is a statement "it is a miracle that all these discoveries had already been made (in China)". Labnitz, a pioneer in computer sciences, found the theory of the binary system in the sixty-four hexagrams in *Book of Changes*, that is, Yin Yao (position) represents "0" and Yang Yao (position) represents "1". This discovery was essential to his invention of the computer. In 1930, Liu Zihua, a Chinese student in French, worked out the mass, speed and the orbit of the tenth planet using the theory of the eight trigrams. The thesis "*The theo-*

ry on the Universe Contained in the Eight Trigrams and Modern Astrology (《八卦宇宙论与现代天文》) shocked the world and earned him a doctorate degree. The famous Chinese-American scholar Dr. Chen Ning Yang also claimed that he was inspired by the theory of the rise and decline of Yin and Yang when he cast doubt upon the theory of the imperishability of the symmetry of oddness and evenness, first proposed by La Porte Otte, a German physicist. Cheng-Tao Lee, deriving inspiration from the Taiji Map and the Eight Trigrams, proposed that the oddness and evenness of the two states of atomic energy, though imperishable, are not unchangeable. Instead, there are rises and declines between them. This discovery earned the two scholars the Nobel Prize for Physics.

The German scholar, Gedber, inspired by the Taiji Map, proposed the material basis of the genes, cAMP, cGMP and the hypothesis of Yin and Yang.

The British physicist, Pole said that the Taiji Map is the best representation of harmony, holding that the theory of harmony is implied in the Taiji Map.

Some scholars found that there is a similarity in symmetry between the Taiji Map and the eight states of hadron. It is also similar to the Periodic Table of Elements, with eight electrons on the outside layer.

The principles of the binary system in the Eight Trigrams was adopted by computer science. Some people even holds that the order of the eight trigrams designed by Fu Xi is similar to the chain reaction of the nucleus. Inspired by the Eight Trigrams in *Book of Changes*, Cai Fuxi wrote the book *The Eight Trigrams and Atoms* (《八卦与原子》), proposing a new periodic table of elements as an alternative to that of Mengelef.

	Yin Place “--” 0	Yang Place “—”		Two Elementary Forms 1		
	Tai Yin “==”	Shao Yang “=—”	Shao Yin “--”	Tai Yang “==”	Four Emblematic Symbols	
Binary System	00	01	10	11		
Decimal System	0	1	2	3		
	Kun ☷	Gen ☶	Kan ☵	Xun ☴	Zhen ☳	Eight Trigrams
Binary System	000	001	010	011	100	
Decimal System	0	1	2	3	4	
		Li ☲	Dui ☱	Qian ☰		
Binary System		101	110	111		
Decimal System		5	6	7		

The sixty-four hexagrams, i. e. Early Arrangement of Hexagrams, were ordered from Bo trigram to Qian trigram as 1 ~ 63. From this we can see that it is the outline of infinitesimal calculus and the binary system of Labnitz.

The duplication of the Eight Trigrams gives rise to the sixty-four hexagrams. This principle is regarded as similar to the arrangement of the genetic codes. The map of the sixty-four hexagrams in *Book of Changes* coincides with the arrangement of the genetic codes. This might throw light on the investigation into human life and longevity. There are still other people who think that the combination of oddness and evenness in the state of atomic energy is similar in principle to the Taiji Map.

The Chinese mathematician Liu Weihua insists that the triangle contained in *Book of Changes* (the Grand Terminus—Two Elemen-

tary Forms — Four Emblematic Symbols — the Eight Trigrams) implies an abstruse theory of mathematics. Both in Japan and Korea, many revere *Book of Changes*, with the Korean national flags displaying the Taiji Map.

Can Tong Qi (《参同契》), written by Wei Boyang in the Eastern Han Dynasty, opened the way for exploration into the science of life.

On April 29, 1985, a Chinese descendant, Dr. Wang Ganjun, took part in the 17th flight of the NASA space shuttle, becoming the first ethnic Chinese in space. To commemorate this flight, he attached a Taiji Map to the right arm of his space suit, with DDM (the short form for the name of this experiment) on it. This expresses a reverence for the Taiji Map by ethnic Chinese.

The hierarchy of the Eight Trigrams helped to promote the development of Chinese architecture.

The Eight Trigrams also had an influence on the art of war. For example, Zhuge Liang in the Three States Period (220~280) made a battle formation, which allowed Lu Xun to enter but not to escape.

In music, the scholars on *Book of Changes* deduced the value of each of the Bo Hua Jia, against the five musical sounds: Gong, Shang, Jue, Zhi and Yu, on the basis of the hexagrams together with Gan Zhi. This process is called Na Yin (纳音), the principle of which is based on the numbers of Da Yan (大衍). In the Ming Dynasty, Zhu Zai-xu said in *The True Nature of Music* (《律吕精义》), "There are nine numbers in Luo Writing, so the standard of the Huang Zhong is nine Cun long. If multiplied by nine, there will be 81 parts to the standard. It is just as long as Zong Shu. There are ten numbers in the He Map. So a degree in Huang Zhong is ten Cun

long. Multiplied by ten, there will be 100 parts. It is as wide as Heng Shu. Because the He Map is even and the Luo Writing is odd, there is so much variety in music. This excellence is by the hand of heavens, not of man."

All the above examples show that *Book of Changes* is by no means only a book on divination. In ancient times, there was no clear demarcation between medicine and divination. Otherwise, the book could not have been passed down. The symbols, numbers and theories of *Book of Changes* will inspire the development of natural sciences.

The Taiji Map, as a symbol of human wisdom, was used as one of the symbols first sent out to communicate with other beings in space.

The genetic materials DNA and RNA have many similarities with Taiji, the Eight Trigrams and Yin and Yang in their unity of opposites. The two opposing adjustment system: cAMP and cGMP were also related to the system of Yin and Yang.

The Japanese have an intense reverence for *Book of Changes*. There are many scholars studying it and many works have been published. Among these works, *A Study of Book of Changes* (《周易大鉴》) is a good example. Furthermore, there are some books on *Book of Changes* in Japan that are unavailable in China. A long-established society on *Book of Changes* in Tokyo publishes a journal. Even in America there are some 400 works on *Book of Changes* available.

The Koreans also value *Book of Changes*. In addition to using the Taiji Map on their national flag, they have also set up a *Book of Changes* society.

Moreover, the oversea Chinese in Taiwan, Hong Kong and

Macao also have a great respect for this book. Many scholars have made explorations into it and have published many collections, books and theses on it. As an example, *The Study of the Application of Book of Changes* (《易学应用之研究》), edited by Chen Lifang, has played an important role in the study of *Book of Changes*. In addition, the ethnic Chinese in Southeast Asia pay great attention to this work. One example is *The Scientific Nature of the Hexagrams in Book of Changes* (《易卦的科学本质》), which represents a high level of research. All these facts illustrate that *Book of Changes* is also cherished in other countries.

In the 1960s, research into *Book of Changes* came to a pause. In recent years, the study has again picked up, both in and outside China with many essays being published. The influential works among them include *A New Annotation to Book of Changes* (《周易大传今注》) and *A New Annotation to the Ancient Version of Book of Changes* (《周易古经今注》) by Gao Heng, *The Research into the Origin of Book of Changes* (《周易探源》) by Li Jingchi, *The Study of the Thoughts in Book of Changes* (《周易思想研究》) by Zhang Liwen, *A Brief Survey of Book of Changes* (《周易概论》) by Liu Dajun, *Harmony in Book of Changes* (《周易参同契》) by Zhou Shiyi and Pan Qiming, and *The History of Philosophy of Book of Changes* (《易学哲学史》). Additionally, some good essays on *Book of Changes* have been published, including *On the Mystery of the Numbers in Book of Changes* (《谈易数之谜》) and *From "The Text" to "The Commentaries"* (《从易经到易传》) by Yu Dunka. Just in the field of TCM, several thousand essays on the relation between TCM and *Book of Changes* have been published, among which are many very incisive pieces, including *What Kind of Book is the Harmony in Book of Changes* (《周易参同契是本什么书》) by

Wu Jiajun, *A Research into the He Map and the Luo Writing* (《“河图”与“洛书”初探》) by Zhao Tianmin, and *The Theory of the Combination and Unity of the Four Forces* (《八卦的组合和四种力的统一》) by Yang Yongzhong, which proposed that the binary combination of different kinds of atomic structures not only demonstrates the combination of different kinds of atomic structures, but also provide a scientific explanation for the unity of the four forces "gravity, electromagnetism, the strong force and the weak force".

The *Book of Changes* Society has been set up. The Graduate Office of the TCM Research Institute offers lectures on the relationship between *Book of Changes* and TCM, which are warmly greeted by the graduates. In Wuhan and Guiyang, societies of *Book of Changes* have been set up, holding several seminars on medicine and *Book of Changes*. In Nanjing and Shandong, courses are offered on medicine and *Book of Changes*. In Yunnan, a seminar was held on medicine and *Book of Changes*. An international conference was held in Jinan on *Book of Changes*. At this conference, many scholars from the U. S. A., Japan, Germany, Denmark, Taiwan and Hong Kong were present. Zhang Zhongjing University of Traditional Chinese Medicine in Zhengzhou offers courses on *Book of Changes*. In Shandong, a school has been set up, teaching art and numbers in medicine on the basis of the theories of *Book of Changes*. Columns of some journals are devoted to medicine and *Book of Changes*. In Jinan, a center of *Book of Changes* has been set up. These facts are enough to illustrate the influence and status of *Book of Changes* in the field of TCM. *Book of Changes* has become a source of methodology, from which many branches of knowledge can get inspiration to promote their development. In all, to illustrate the relationship between *Book of Changes* and TCM and

promote the development of TCM, it is necessary to take measures to encourage the study of *Book of Changes* in the field of TCM, to investigate the influence of it on this field, and to open a new front for the theoretical study of TCM. This is, without doubt, a new duty in the development of TCM.

(Chapters one - eight were translated by Song Zhifang)

Chapter Nine

The Eight Trigrams and TCM

Section 1 Origin, Arrangement and Types of the Eight Trigrams

I. The Origin of the Eight Trigrams

The first recorded document on the Eight Trigrams in China was a commentary on the He Map in *Gu Ming: Book of History* (《尚书·顾命》), "The He Map, the Eight Trigrams. Fu Xi became the king, a dragon horse came out of the Yellow River, and he drew eight trigrams upon the writings on the back of the dragon horse."

The Eight Trigrams is the main content of *Book of Changes*, and it says in the *Great Treatise on Yi*, "In ancient times, when Bao Xi had come to rule all under heaven, looking up, he contemplated the brilliant forms exhibited in the sky, and looking down he surveyed the patterns shown on the earth. Near at hand, in his own person, he found things for consideration, and the same at a distance, in things in general. On this he devised the Eight Trigrams to show fully the attributes of the spirit-like and intelligent (operations working secretly) and to classify the qualities of the myriad things." According to this, Fu Xi was the inventor of the Eight Trigrams. As for the question of who first overlapped the Eight Tri-

grams, no final conclusion is offered. The Eight Trigrams, and the sixty four double hexagrams are composed of Yin Yao (--) and Yang Yao (—), the basic elements of *Book of Changes*. The Eight Trigrams refer to: Qian (the Creative), Kun (Receptive, Resting in Firmness), Zhen (Thunder, Exciting Power), Xun (Gentle Penetration), Kan (the Perilous Pit), Li (the Clinging), Gen (Maintain, Arresting Movement), and Dui (Joy, Pleasure). The following are their signs:

Qian ☰	Kun ☷	Zhen ☳	Xun ☴
Kan ☵	Li ☲	Gen ☶	Dui ☱

(Add: the Eight Trigrams in Rhyme)

- ☰ Qian San Lian (Qian is three lines)
 ☷ Kun Liu Duan (Kun is separated into six parts)
 ☳ Zhen Yang Yu (Zhen is an upward jar)
 ☶ Gen Fu Wan (Gen is a downward bowl)
 ☲ Li Zhong Xu (Mid-Li is empty)
 ☵ Kan Zhong Man (Mid-Kan is full)
 ☱ Dui Shang Que (Upper-Dui is a gap)
 ☴ Xun Xia Duan (Lower-Xun is divided)

The Eight Trigrams includes the Trigram of Fu Xi and Trigram of King Wen. (See figures 9-1, 9-2, 9-3, 9-4)

The Eight Trigrams was the symbol of observing the movement of the sun and moon in ancient times. It says in the *Great Treatise on Yi*, "The positions of heaven and earth (in the trigrams) have been determined," that, the early heaven trigrams were used on four sides and at four corners to symbolize the movement of the shadows. In ancient times, Gui (earth heap) was used to measure the shadows to record calendars (sundial signs), thus it was said

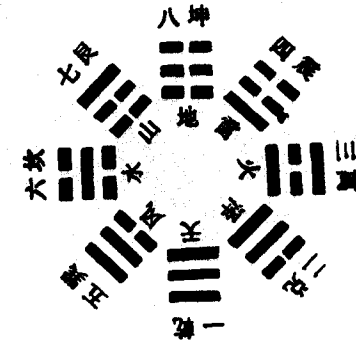


Figure 9-1 Early Arrangement of Fu Xi

Notes to this figure:

- 一乾 the first, Qian 天 heaven 二兑 the second, Dui 泽 marsh
 三离 the third, Li 火 fire 四震 the fourth, Zhen 雷 thunder
 五巽 the fifth, Xun 风 wind 六坎 the sixth, Kan 水 water
 七艮 the seventh, Gen 山 mountain 八坤 the eighth, Kun 地 earth

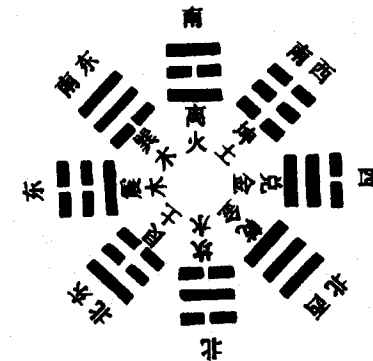


Figure 9-2 Later Arrangement of King Wen

Notes to this figure:

- 东 east 西 west 南 south 北 north
 东北 northeast 东南 southeast 西北 northwest 西南 southwest
 乾金 Qian, metal 兑金 Dui, metal 坤土 Kun, earth 离火 Li, fire
 巽木 Xun, wood 震木 Zhen, wood 艮土 Gen, earth 坎水 Kan, water



Figure 9-3 Orders of Fu Xi

Notes to this figure:

- 一乾 the first, Qian 二兑 the second, Dui
- 三离 the third, Li 四震 the fourth, Zhen
- 五巽 the fifth, Xun 六坎 the sixth, Kan
- 七艮 the seventh, Gen 八坤 the eighth, Kun
- 太极 Taiji (the Grand Terminus) 阴阳 Yin Yang
- 太阳 Greater Yang 太阴 Greater Yin
- 少阴 Lesser Yin 少阳 Lesser Yang
- 两仪 the Two Elementary Forms 八卦 the Eight Trigrams
- 四象 the Four Emblematic Symbols

that "Gua" is to study its sundial signs. All the above can be found by analyzing the word structure of Gua "卦". The word "卦" consists of "圭" and "卜", "圭" means earth heap, the earliest instrument of measuring the shadows, which was later developed into Guibiao (an ancient Chinese sundial consisting of an elongated dial — gui — and one or two gnomons — biao). "卜" means observing. So "卦" means observing the movement of the sun and the moon.

There were three schools of astronomical observation in ancient times. They were Gaitian, Huntian and Xuanye. Gaitian refers to

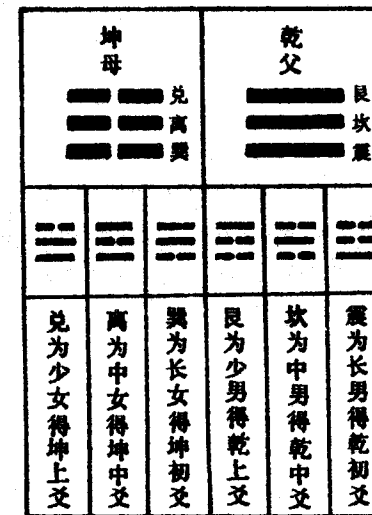


Figure 9-4 Orders of King Wen

Notes to this figure:

- 坤母 Kun, the mother 乾父 Qian, the father
- 兑 Dui 离 Li 巽 Xun 艮 Gen 坎 Kan 震 Zhen
- 兑为少女得坤上交 Dui, the youngest daughter, Kun, the upper Yao
- 离为中女得坤中爻 Li, the second daughter, Kun, the middle Yao
- 巽为长女得坤初爻 Xun, the eldest daughter, Kun, the lower Yao
- 艮为少男得乾上交 Gen, the youngest son, Qian, the upper Yao
- 坎为中男得乾中爻 Kan, the second son, Qian, the middle Yao
- 震为长男得乾初爻 Zhen, the eldest son, Qian, the lower Yao

man's observation of the celestial phenomena in the heavens. The heavens appeared as a semicircle, and as for the earth, the ancients thought it square-shaped, so this school was also called "theory of circular heaven and square earth", *Book of Changes* belongs to this one. School of Huntian refers to man's observation of the phenomena outside the heavens, so the heavens are perfectly round. And

school of Xuanye refers to man's observations at night. TCM belongs to Gaitian.

II. Yao (lines) emblems and arrangement of the Eight Trigrams

1. Yao (lines) of the Eight Trigrams

In the Eight Trigrams, signs are used to reflect objective phenomena and hexagrams' emblems of trigrams command those of lines.

The lines are called Yao. "—" is Yang Yao, strong character belonging to Yang; "--" is Yin Yao, weak flexible character belonging to Yin. "Yin and Yang constitute Dao" (the successive movement of the inactive and active operations constitutes the course of things). The lines of Yin and Yang represent Yin Qi and Yang Qi, while the functions of all things have evolved from them.

As for the implication of Yin Yao (--) and Yang Yao (—), there are several views:

- 1) original symbols of human reproductive organs
- 2) evolution of divination by the shell of the tortoise
- 3) symbol of divination by alpine yarrow

Whatever they represented originally, it can be affirmed that both signs contain the unity of opposites of Yin and Yang and are symbols of Yin and Yang.

Yao, the basic unit of the Eight Trigrams, has three meanings, sunlight, moonlight and mutual projection of the sun and moon. Yao itself is the symbol of the sun and moon's movement, which is explained through the figure of the early heaven trigrams seen in figure 9-5.

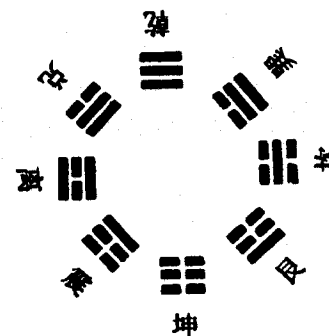


Figure 9-5 Diagrams of Early Heaven Trigrams

Notes to this figure:

乾 Qian 坤 Kun 兑 Dui 巽 Xun 离 Li 震 Zhen 艮 Gen 坎 Kan

The inner circle composed of first Yao line, begins and ends with Qian and Kun. From Yin at its extreme in Kun by giving rise to a Yang line to Yang at its extreme in Qian, this is the process by which Yin declines and Yang grows; from Yang at its extreme in Qian by giving rise to a Yin line to Yin at its extreme in Kun, this is a process of Yin growing while Yang declines. That's the law of growth and decline of Yin and Yang of the early heaven trigrams, which symbolizes the shadow changes of the sun's visual movement during a year and the moon's visual movement during a day. The midcircle composed of Mid-Yao lines begins and ends in Kan and Li and marks the growth and decline of Yin and Yang during the earth's revolution and rotation in a circuit year or day. The outer circle composed of upper and middle lines is to record the moon's visual movement in a month. The beginning from Kun is Shuo (the first day of lunar month), it is called Shang Xian (the first quarter of the moon) from Kun to Li. Arriving at Qian is Wang (the fif-

teenth day), it is called Xia Xian (the third quarter of the moon) from Qian to Kan. Returning to Kun is a Shuo month. All of the above indicates that Yao is used to record the changes of the sun and the moon's movement. (See Figure 9-6)

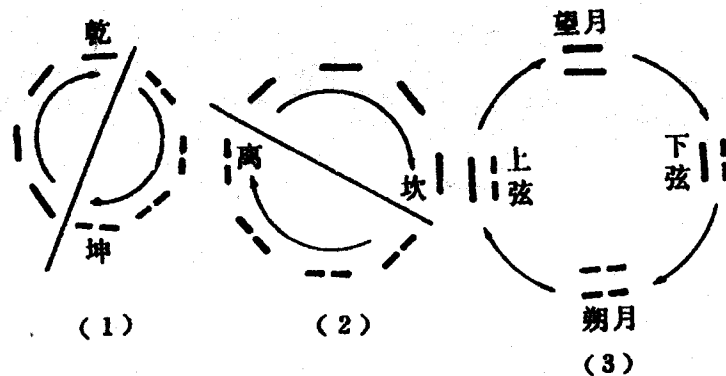


Figure 9-6 Sketch map of emblems of Yao

Notes to this figure:

乾 Qian 坤 Kun 离 Li 坎 Kan

望月 full moon 朔月 crescent 上弦 upper crescent 下弦 lower crescent

2. The arrangement of the Eight Trigrams

According to *Book of Changes* copied on silk unearthed from Han Tombs in Ma Wang Dui, the order of the Eight Trigrams is: Qian, Gen, Kan, Zhen, Kun, Dui, Li and Xun, an alternative arrangement to early heaven trigrams and later heaven trigrams.

As for the emblems of the Eight Trigrams, *Book of Changes* says that the Eight Trigrams have been completed in their proper order, there were in each emblematic lines.

Each Gua (trigram) in the Eight Trigrams has a symbolic pictograph (see table 9-1) included:

Qian ☰	reflects heaven	Kun ☷	reflects earth
Zhen ☳	reflects thunder	Xun ☴	reflects wind
Kan ☵	reflects water	Li ☲	reflects fire
Gen ☶	reflects mountain	Dui ☱	reflects marsh

Table 9-1 Symbolism of the Eight Trigrams

Qian	Kun	Zhen	Xun	Kan	Li	Gen	Dui
Strength	Softness	Exciting power	Gentle penetration	The Perilous Pit	Bright-ness	Resting	Joy

At a distance or in general

Qian	Kun	Zhen	Xun	Kan	Li	Gen	Dui
Horse	Ox	Dragon	Fowl	Pig	Pheasant	Dog	Sheep

Near at hand, in his own person

Qian	Kun	Zhen	Xun	Kan	Li	Gen	Dui
Head	Abdomen	Foot	Thigh	Ear	Eye	Hand	Mouth

Emblems in family

Qian	Kun	Zhen	Xun	Kan	Li	Gen	Dui
Father	Mother	Eldest son	Eldest daughter	Second son	Second daughter	Young-est son	Young-est daughter

Heaven and earth, thunder and wind, water and fire, mountain and marsh; these are four pairs of opposites. The occurrence and development of all things gains new unity in opposites because of the transformation of Yin and Yang. Yin Yao (--) and Yang Yao (—)

(一), therefore are the basis of evolving Eight Trigrams, from which sixty four double hexagrams are derived. The Eight Trigrams are the supreme sign of Qi Hua of the universe (various kinds of changes taking place in the body under the action of Qi). Yang Yao (—) represents active powers, while Yin Yao (--) represents inactive things. So the Eight Trigrams are the symbols of Yin Yang Qi Hua.

III. The Eight Trigrams also display two types: early heaven trigrams and later heaven trigrams. The former is said to have been invented by Fu Xi and therefore are called the Fu Xi Trigrams. The latter are called King Wen Trigrams for it is said King Wen invented them. By textual research it has been proven that the Eight Trigrams were invented by neither Fu Xi nor King Wen, but as to who invented them, there is no definite conclusion. The Eight Trigrams were summarized from the social and living practices of the working people over a long period of time. It is also beyond doubt that the Eight Trigrams have their own material basis and naive materialism and dialectics.

The form and images of early and later heaven trigrams are the same. The differences lie in the position and order of arrangement.

The early heaven trigrams: Qian lies in the south, Kun the north, Li the east and Kan the west. (See figure 9-7)

The later heaven trigrams: Li lies in the south, Kan the north, Zhen the east and Dui the west. (see figure 9-8)

The later heaven trigrams regard Li and Kan as south and north, Zhen and Dui as east and west. So it determined east, south, west and north by Zhen, Li, Dui and Kan, which respectively represent spring warmth, summer hotness, autumn coolness and winter coldness. About the eight stages of the universal growth and stor-

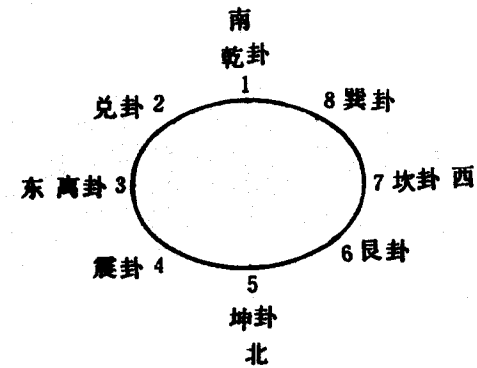


Figure 9-7 Early heaven trigrams

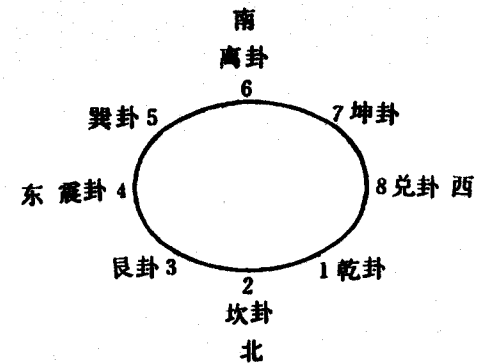


Figure 9-8 Later heaven trigrams

Notes to figure 9-7 and figure 9-8:

南 South 北 north 东 east 西 west

离卦 trigram of Li 坎卦 trigram of Kan

震卦 trigram of Zhen 兑卦 trigram of Dui

巽卦 trigram of Xun 坤卦 trigram of Kun

艮卦 trigram of Gen 乾卦 trigram of Qian

age, it says in *Treatise of Remarks on the Trigrams of Yi*, "All things are made to issue forth in Zhen, which is placed at the east. Li gives the idea of brightness. All things are now made to manifest one another. It is the trigram of the south. Kun denotes the earth, (and is placed at the southwest). All things receive from it their fullest nourishment. Dui corresponds (to the west) and to autumn — the season in which all things rejoice. Kan denotes water, it is the trigram of the exact north — the trigram of comfort and rest, what all things are tending to. Gen is the trigram of the northeast. In it all things bring to a full end the issue of the past (year), and prepare the commencement of the next." Hence it is said, "He completes (the work of the year) in Gen." The posterities often adopt the later heaven trigrams (King Wen Trigrams), and Jiugong and Bafeng in the *Emperor's Canon of Medicine* adopt it too.

Section 2 The Formation, Arrangement and Meaning of Sixty- Four Double Hexagrams

The Eight Trigrams, also named Eight Jing Trigrams, are the basis of the sixty-four separated hexagrams, or sixty-four double hexagrams, whose way of derivation lies in that every separated hexagram is composed of two Jing trigram. For instance, Meng separated hexagram ☱☶ is composed of Gen trigram ☶ and Kan trigram ☵. Gen trigram (reflects mountains) is the upper gua, Kan (reflects water) is the lower, so the character of Meng separated hexagram is a spring issue beneath a mountain. The formation of sixty-four double hexagrams is as follows:

Two Qian make Qian two Kun make Kun Two Zhen make Zhen two Xun make Xun



Two Kan make Kan two Li make Li Two Gen make Gen two Dui make Dui

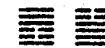


Heaven up and earth low make Pi (Stagnation)



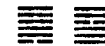
Heaven low and earth up make Tai (Peace)

Heaven up and thunder low make Wu Wang (Correctness)



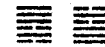
Heaven low and thunder up make Da Zhuang (the Power of the Great)

Heaven up and wind low make Gou (Encountering)



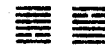
Heaven low and wing up make Xiao Xu (the Small taming force)

Heaven up and water low make Song (Conflict)



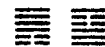
Heaven low and water up make Xu (Waiting)

Heaven up and fire low make Tong Ren (Companionship)



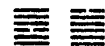
Heaven low and fire up make Da You (the Great Possession)

Heaven up and mountain low make Dun (Retreat)



Heaven low and mountain up make Da Xu (the Great Taming Force)

Heaven up and marsh low make Lu



Heaven low and marsh up make Guai (Removing Corruption)

Reasoning out the rest by analogy:

earth	earth	earth	earth	earth	earth
Fu \parallel Yu	Sheng \parallel Guan	Shi \parallel Bi	Ming Yi \parallel Jin	Qian \parallel Bo	Lin \parallel Cui
thunder	wind	water	fire	mountain	marsh

thunder	thunder	thunder	thunder	thunder
Heng \parallel Yi	Jie \parallel Tun	Feng \parallel ShiKe	XiaoGuo \parallel Yi	GuiMei \parallel Sui
wind	water	fire	mountain	marsh

wind	wind	wind	wind
Huan \parallel Jing	JiaRen \parallel Ding	Jian \parallel Gu	ZhongFu \parallel DaGuo
water	fire	mountain	marsh

water	water	water	water
Ji Ji \parallel Wei Ji	Jian \parallel Meng	Jie \parallel Kun	Lü \parallel Ben
fire	mountain	marsh	mountain

fire	mountain
Kui \parallel Ge	Sun \parallel Xian
marsh	marsh

heaven	earth	thunder	wind
Qian \parallel Qian	Kun \parallel Kun	Zhen \parallel Zhen	Xun \parallel Xun
heaven	earth	thunder	wind

water	fire	mountain	marsh
Kan \parallel Kan	Li \parallel Li	Gen \parallel Gen	Dui \parallel Dui
water	fire	mountain	marsh

Sixty-four double Hexagrams in Rhyme:

1st Gong: Qian is heaven heaven wind is Gou (Encountering)

heaven mountain is Dun (Retreat)
 heaven earth is Pi (Stagnation)
 wind earth is Guan (Contemplation)
 mountain earth is Bo (Falling Apart)
 fire earth is Jin (Progress)
 fire heaven is Da You (Great Possession, Abundance)

2nd Gong: Kan is water water marsh is Jie (Regulation, Restraining)

water thunder is Tun (Initial Difficulty)
 water fire is Ji Ji (Completion)
 marsh fire is Ge (Revolution)
 thunder fire is Feng (Abundance, Prosperity)
 earth fire is Ming Yi (Darkening of the Light, Intelligence)
 earth water is Shi (The Army, Group Action)

3rd Gong: Gen is mountain mountain fire is Bi (Adornment)

heaven mountain is Da Xu (The Great Taming Force)
 mountain marsh is Sun (Decrease)
 fire marsh is Kui (Disunion, Mutual Alienation)
 heaven marsh is Lü (Treading Carefully)
 wind marsh is Zhong Fu (Inmost Sincerity)
 wind mountain is Jian (Gradual Progress, Growth)

4th Gong: Zhen is thunder thunder earth is Yu (Harmony, Joy, Enthusiasm)

thunder water is Jie (Removing Obstacles)
 thunder wind is Heng (Perseverance, Duration)
 earth wind is Sheng (Ascending)
 water wind is Jing (A Well)
 marsh wind is Da Guo (Excess)
 marsh thunder is Sui (Following)

5th Gong: Xun is wind wind heaven is Xiao Xu (The Taming Force, Small Restraint)

wind fire is Jia Ren (The Family)

wind thunder is Yi (Increase)

heaven thunder is Wu Wang (Correctness, Innocence)

fire thunder is Shi He (Biting Through)

mountain thunder is Yi (Nourishment)

mountain wind is Gu (Arresting Decay)

6th Gong: Li is fire fire mountain is Lü (Traveling Stranger)

fire wind is Ding (The Caldron)

fire water is Wei Ji (Before Completion)

mountain water is Meng (Youthful Inexperience, Obscurity)

wind water is Huan (Dispersion)

heaven water is Song (Conflict)

heaven fire is Tong Ren (Union of Men)

7th Gong: Kun is earth earth thunder is Fu (Returning)

earth marsh is Lin (Approach, Symbol of Advance)

earth heaven is Tai (Peace)

thunder heaven is Da Zhuang (The Power of the Great)

marsh heaven is Guai (Removing Corruption, Break-through)

heaven water is Si Xu (Waiting)

water earth is Bi (Union)

8th Gong: Dui is marsh marsh water is Kun (Oppression)

marsh earth is Cui (Gathering Together)

marsh mountain is Xian (Influence)

water mountain is Jian (Arresting Movement)

earth mountain is Qian (Modesty)

thunder mountain is Xiao Guo (Small Excess)

thunder marsh is Gui Mei (The marrying maiden, Propriety)

The Arrangement Order of Sixty-four Hexagrams of Fu Xi is to see figures 9-9, 9-10, 9-11 and table 9-2

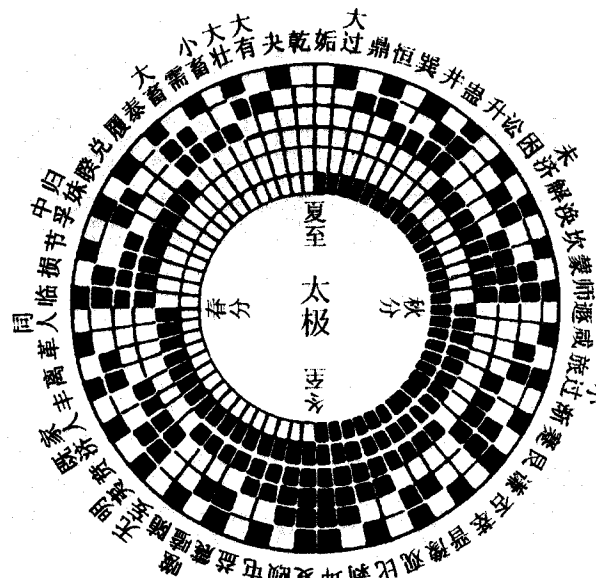


Figure 9-9 the round diagram of orders of sixty-four Hexagrams of Fu Xi

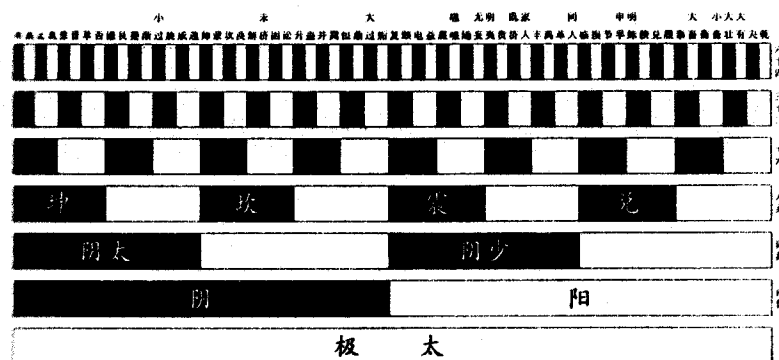


Figure 9-10 the long diagram of orders of sixty-four Hexagrams of Fu Xi

Section 3 Quality and Significance Of the Eight Trigrams

The Eight Trigrams symbolize the origin and evolution of nature.

Laozi said, "Dao generates one, one generates two, two generates three, three generates all things. All things on earth carry Yin on their backs and hold Yang in their arms, adverse ascending of Qi to gain harmony." "Dao generates one" means that the Reign of Taiji (the Grand Terminus) is inborn Qi. Be active, and Yang occurs; be static, and Yin occurs. The combination of Yin and Yang produces the elementary Forms, that is, one generates two. Those two Forms produce four emblematic symbols, which again produce the Eight Trigrams, and the Eight Trigrams respectively symbolize heaven, earth, thunder, wind, water, fire, mountain and marsh, which are the material base of the universe's derivation. In these, Qian and Kun, heaven and earth are the roots of all things that are all born between heaven and earth. It says in *The Orderly Sequence of the Hexagrams* in *Book of Changes*, "When there were heaven and earth, then all things were produced." Also in *Wen Yan in Qian of Yi*, it says, "in his attributes be harmony with heaven and earth, in his brightness, with the sun and moon." Hence, the Eight Trigrams are not something mysterious but a kind of material structure in which dialectics appear in an embryonic form. *Book of Changes* formed its viewpoint about the universe and the movement on eight natural things, and therefore reflected heaven, earth, thunder, wind, water, fire, mountain and marsh. With water and

fire as the origin of everything, the base of Yin and Yang, thunder and wind pushing and promoting, the mountain and marsh appeared. Where there were mountain and marsh, living creatures began appearing, life began breeding, and human beings multiplied. It says in *Book of Changes*, "Qian, [represents] what is great and originating," which means Qian is pure Yang, extremely strong and hard. Also in *Tuan Trigram of Yi*, it says, "Vast is the great and original indicated by Qian! All things owe to it their beginning — it contains all the meaning of [the name] heaven." Kun represents great and original, which means Kun is pure Yin, extremely flexible and obedient. It says in *Tuan Trigram of Yi*, "Complete is the great and originating [capacity]' indicated by Kun! All things owe to it their birth, — it receives obediently the influences of heaven." *Book of Changes* attaches importance to Qian Yuan especially, regarding it as the motive force that all things owe their beginning to. If this Yuan moves, heaven, earth, sun and moon will all move and these are perpetual motions, which run from beginning to end of all things and influence their occurrence and development. It says in the original text of *Book of Changes*, "Qian [represents] what is great and originating, penetrating, advantageous, correct and firm." Qian, the heaven, is an invisible motive of the movement of all things in nature. Yuan, Heng, Li and Zhen are four virtues of Qian. Yuan is emphasized as the motive force of Yuan Qi in *Book of Changes*, and is the early form of monism taking Qi as nature. Heng means penetrating, Li means advantageous and Zhen means correct and firm, that, as long as things are on the move, they can be sensible and reasonable, and helpful to all things, which is the inescapable law of natural development, the main course of heaven and earth. It says in *Tian Yuan Ji Da Lun* (《天元纪大论》) in the

Emperor's Canon of Medicine, quoting *Book for Primitive Qi in the Universe* (《太始天元册》), "The boundless sky is the foundation and origin of everything and their development. Five elements are spread out in the universe that spread out the vital Qi of heaven and earth, so how everything came into being can be obtained. Its meaning and reasoning are the same". This shows that *Book of Changes* has a great influence on the basic theories of TCM.

Book of Changes pays great attention to Kun. Since all six lines in Kun are --, it is pure Yin. Nothing in the universe would occur with Yin alone or Yang alone. All things occur and develop depending not only on the function of Yang, but also on the constitution of Yin. In other words, heaven and earth must combine Yin and Yang and then produced the universe. So the original text in *Book of Changes* says, "Kun (represents) what is great and originating, penetrating, advantageous, correct and having the firmness of a mare." Yuan means great. "Shuo Wen" thinks "Yuan represents a beginning." Heng means penetrating; Li means advantageous, and Zhen means correct and firm. Kun (earth) is vast and deep, carrying all things in the universe. Qian and Kun combined, Yin is helped by Yang, and all things occur. It says in the *Emperor's Canon of Medicine*, "The principle of Yin and Yang is the universal law of the nature, the general order and law of all matters, the root cause of various changes of the universe, the motive power of flourishing and perishing of matter, and the house of mind", which hold identical views. It is obvious that the basic theory of the *Emperor's Canon of Medicine* was derived from *Book of Changes*.

Book of Changes emphasizes the important positions of water and fire in producing all things in the universe, as well as the function of Qian and Kun in the universe. For example, water is Kun

Gen. It says in the beginning of Xu Gua, "The six Gua cannot be separated from Kan, which was produced by the heavens", which shows water is extreme Yin. There will be no life without water. Li is fire, and fire generates earth, the mother of all things. So water and fire produce all things in the universe. In addition, Li and Kan can also be explained as the sun and the moon. With the sun and moon's movement, the cold can be alternated with summer-heat, and Yin and Yang can gain harmony. So the original text says, "Kan shows the possession of sincerity, through which the mind is penetrating." Yu Fan said, "As the moon moves in the sky, Kan shows the possession of sincerity." And again "Kan is the mind of Qian, figure two and five are beside it thus flows Kun, Yin and Yang combined, so the mind is penetrating." The original said, "Kun means the moon, Li means the sun. The sun and moon are attached to the sky", and in *Treatise of Remarks on the Trigrams of Yi*, it says, "Li gives the idea of brightness. ... For drying all things up there is nothing more parching than fire." All suggest that *Book of Changes* paid great attention to the productive function of the sun and moon, just as is said in the *Great Treatise on Yi*, "The sun goes and the moon comes; the moon goes and the sun comes, — the sun and moon thus take the place of each other, and their shining is the result."

Book of Changes says that Zhen and Xun, thunder and wind, play important roles in the occurrence and development of nature. The original text says, "Symbolism shows when the movement approaches, he in the position of peril (a weak line) is mounted on a strong one." And in *Treatise of Remarks on the Trigrams of Yi*, it says, "All things are made to issue forth in Zhen, which is placed at the east." "[The processes of production] are brought into full and

equal action in Xun, which is placed at the southeast. The 'being brought into full and equal action' refers to the purity and equal arrangement of all things."

In addition, *Book of Changes* notes the functions of Gen and Dui, mountain and marsh, in the formation of all things in nature, for *Book of Changes* says, "Mountains and collection of water interchange their influence and it is in this way that they are able to change and transform, and to give completion to all things." "Gen is the trigram of the northeast. In it all things bring to a full end the issues of the past [year] and prepare the commencement of the next."

This indicates that the theory of the Eight Trigrams in *Book of Changes* states the occurrence and derivation of nature, points out the great significance of heaven and earth, water and fire, wind and thunder, mountain and marsh in the universe, and stresses the view that nature is moving and material. It says in *Treatise of Remarks on the Trigrams of Yi*, "[The symbols of] heaven and earth received their determinate positions; [those for] mountains and collection of water interchanged their influences; [those for] thunder and wind stimulate each other all the more"; "Thunder serves to put things in motion; wind to scatter [the genial seeds of] them; rain to moisten them, the sun to warm; [what is symbolized by] Gen, to arrest [and keep them in their places]; [by] Dui, to give them joyful course; [by] Qian, to rule them, and [by] Kun, to store them." And "for putting all things in motion there is nothing more vehement than thunder; for scattering them there is nothing more effective than wind; for drying them up there is nothing more parching than fire; for giving them pleasure and satisfaction there is nothing more grateful than a lake or marsh; for moistening them

there is nothing more enriching than water; for bringing them to an end and making them begin again there is nothing more fully adapted than Gen."

Under the influence of *Book of Changes*, the *Emperor's Canon of Medicine* pays great attention to the creative function of heaven, earth, water, fire, soil and metal. It says in *Tian Yuan Ji Da Lun* (《素问·天元纪大论》), "The spirit in heaven is wind, in earth is wood; in heaven is heat, in earth is fire; in heaven is damp, in earth is earthiness; in heaven is dryness, in earth is metal; in heaven is cold, in earth is water; in heaven is Qi, in earth is form; form and Qi interact, thus creating myriad things."

The above further proves the theory that TCM and *Book of Changes* are in harmony with each other.

(Translated by Wang Xuemin)

Chapter Ten

Map of the Grand Terminus and Theory of TCM

Section 1 Map of the Grand Terminus

The Map of the Grand Terminus is the core of the Eight Trigrams, and the quintessence of *Book of Changes*. *Book of Changes* has the idea of the Grand Terminus, but it is *Yi Zhuan* that definitely offers the Grand Terminus. It says in the *Great Treatise on Yi*, "In the system of Yi there is the Grand Terminus." As for the question of which book it has derived from, some think it has derived from *Dao Cang* (《道藏》), but in fact no textual research has been achieved. Where on earth is it taken from, more textual criticism is to be made.

I. About the origins of the Map of the Grand Terminus

1. The record of Taiji (the Grand Terminus) was first noted in *Book of Changes*. It says in the *Great Treatise on Yi*, "In the system of Yi there is the Grand Terminus, which produced the two elementary Forms. Those two Forms produced the Four emblematic symbols, which again produced the Eight Trigrams."

2. About the origin of the Map of the Grand Terminus. There

are several opinions, as follow:

a. The Map of the Grand Terminus was from the series of *The Harmony in Book of Changes* (《周易参同契》) by Wei Boyang in the Eastern Han Dynasty.

b. The Map was first recorded in *The Original Meaning of Book of Changes* (《周易本义》) by Zhu Xi in the Song Dynasty, who got it from a hermit of West Shu (西蜀) passed on by Cai Ji-tong (蔡季通), then recorded it in *The Original Meaning of Book of Changes*, which was handed down till now.

c. The Map was from *On the Map of the Grand Terminus* (《太极图说》) by Zhou Dunyi in the Song Dynasty. It is said that a Taoist Priest Chen Tuan of the Song Dynasty instructed Zhou Dunyi with "Map of the Grand Terminus", instructed Shao Yong with the early Heaven of Eight Trigrams, instructed Li Mu with the He Map and the Luo Writing.

II. About Taiji (the Grand Terminus)

"Tai" represents supreme, inexhaustible. Taiji means infinite, including endless time and limitless space. "Limitless" refers to the original chaotic Qi in the universe with no direction, no shape, and no limit, which is "Dao generates one." It represents not only the infinity of macrocosm, but also the microcosm itself.

The Map of the Grand Terminus (see figure 10-1) from infinite to supreme ultimate, is the basis of the theory of the occurrence of the universe in *Book of Changes*. *Book of Changes* believes the universe places itself in infinity, — the original chaotic Qi in the universe. "Tai" was considered as an unknown number in ancient mathematics in China, which suggests the word "Tao" means infinite. Taiji (the Grand Terminus), therefore, refers to the idea that the universe is infinite and limitless.

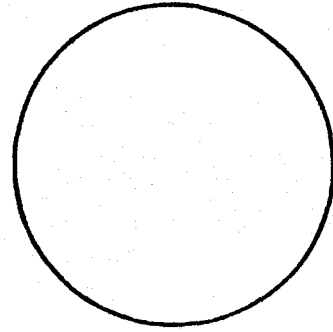


Figure 10-1 Taiji Map (Map of the Grand Terminus, Infinite) (1)

The material basis of Taiji (the Grand Terminus) is Yin and Yang. It says in the *Great Treatise on Yi*, "Yin and Yang constitutes Dao." (The successive movement of inactive and active operations constitute the course of things). Yin and Yang were not isolated, or separated, but were instead combined each other. The Map of the Grand Terminus (figure 10-2) is the best indication of this idea, that "one generates two."

[All things] carry Yin on their backs and hold Yang in their

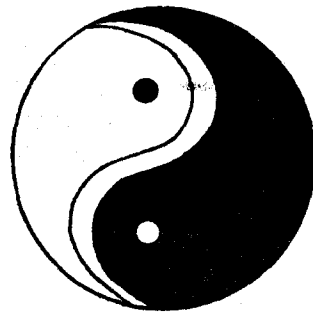


Figure 10-2 Taiji Map (Map of the Grand Terminus) (2)

arms, Yin in Yang, Yang in Yin, Yin and Yang are inter-related and inter-restrained in unity, which can be divided into two and combined into one. But there is extreme Yang in Yin, extreme Yin in Yang, Yin in its extreme gives rise to Yang, and Yang in its extreme gives rise to Yin, which in this way constitutes the complete Diagram of the Grand Terminus. This can best symbolize the relationship of the unity of opposites of Yin and Yang (figure 10-3)

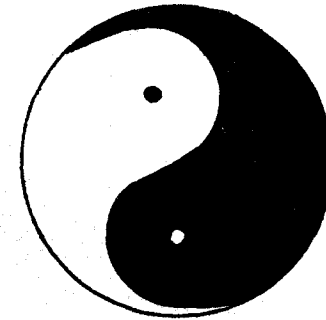


Figure 10-3 Taiji Map (Map of the Grand Terminus) (3)

The Map of the Grand Terminus is round, the principle of monism taking the Qi as the center being in it. It suggests that all things came from the Original Qi, which is the beginning of Qi Hua (Vital Activity). So Taiji (the Grand Terminus) is also called Wu Ji (infinity) or Tai Xu (the Universe). The round shape is represents this meaning.

Why are the lines of Yin and Yang in the Map of the Grand Terminus curves encircling each other instead of straight lines? Not using straight lines symbolizes that Yin and Yang are relative, not absolute though they each take one half. This time Yin is more than Yang, while that time Yin is less than Yang. Yin and Yang are not

absolutely averaged, they restrain and depend on each other. As for the black eye and the white eye, representing extreme Yin and extreme Yang, they symbolize that Yin in its extreme gives rise to Yang and Yang in its extreme gives rise to Yin, Yin and Yang can be transformed. And the black eye and the white eye show that there is Yang in Yin and Yin in Yang.

The curved area between the combination of Yin and Yang represents the growth and decline of Yin and Yang as gradual rather than sudden. In the terms of the figure, the Map of the Grand Terminus has the meaning from zero to one, from one to two, two to four, four to eight, eight to sixteen and to thirty two, and to sixty four and then to infinite.

Section 2 Philosophical Moral of the Map of the Grand Terminus

First of all the Map of the Grand Terminus is round, which represents that the universe began from the Hun Dun Qi Yi Yuan (混沌气一元), so it is the symbol of the principle of monism taking the Qi as the center. Taiji (the Grand Terminus) contains Yin and Yang, while the diagram contains the natural law of the growth and decline of Yin and Yang. The curves of the diagram implicate the law of change and development among all things. The Map of the Grand Terminus indicates the law of qualitative change and quantitative change of all things. The two equal halves of Yin and Yang in the Map of the Grand Terminus from little to large, large to little, suggest that all things are not static but developing, transforming and moving. The extreme Yin and Yang suggest that things turn

into their opposites when they reach the extreme, and overabundance of Yin resulting in Yang and overabundance of Yang resulting in Yin. (see figure 10-4)

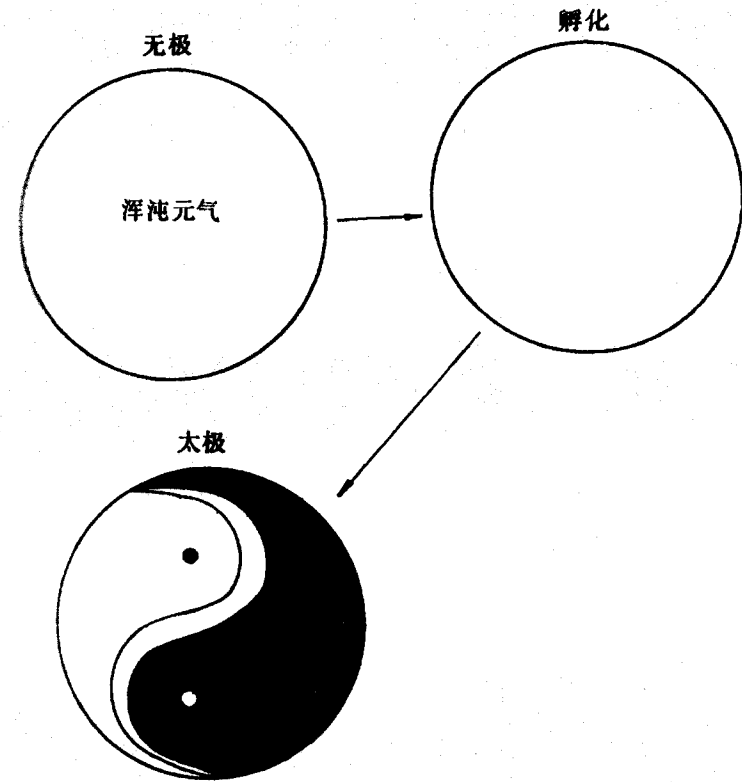


Figure 10-4 the occurrence of the Grand Terminus

Notes to this figure:

无极 infinite 孵化 incubation 太极 the Grand Terminus
浑沌元气 Original Qi in the universe

The chaotic state to Grand Terminus, the combination of Yin and Yang, transformed and produced all things. Its law of deriva-

tion was: infinite — the Grand Terminus — the two elementary Forms — Four emblematic Symbols — the Eight Trigrams — sixty-four hexagrams. This is the essence of the world outlook of *Book of Changes*, which embodies the glorious thoughts of one dividing into two and two combining into one (see figures 9-3, 9-10).

The Map of the Grand Terminus stresses movement and change. In the *Great Treatise on Yi*, it says, "In the system of the Yi there is the Grand Terminus, which produced the two elementary Forms. Those two Forms produced the Four emblematic Symbols, which again produced the Eight Trigrams," which indicates the growth and decline of Yin and Yang in the Grand Terminus is the origin of all things derived from. It says in *On the Map of the Grand Terminus* (《太极图说》) by Zhou Dunyi in the Song Dynasty, "From infinite to the Grand Terminus, the Grand Terminus moving gives rise to Yang, motion in its extreme gives rise to quiescence, which produces Yin, quiescence in its extreme gives rise to motion. Quiescence and motion are causes of each other." This indicates the diagram of the Grand Terminus offers profound materialist dialectics.

This in turn shows that the Map of the Grand Terminus is the supreme field of philosophy of *Book of Changes*, and the epitome of the law of all things changing and developing in universe, which includes profound philosophical theory.

Section 3 Map of the Grand Terminus and Yin Yang Qi Hua

The Map of Grand Terminus is the symbolic diagram of Yin

Yang Qi Hua (functioning of Qi; vital activity). And Taiji is the epitome of Yin Yang Qi Hua in the universe. It says in the *Great Treatise on Yi*, "Yin and Yang constitute Dao" (The successive movement of the inactive and active operations constitutes the course of things). Taiji not only stresses that all things in the universe have started from the very beginning of the world, but also pays attention to the contradictory unity of Yin and Yang, which is considered the basic motive force of the development of all things.

It says in the *Emperor's Canon of Medicine*, "Yin and Yang are the universal law of nature, the general order and fundamental principle of all matter, the root cause of various changes of the universe, the beginning of the birth and creation, death and destruction of all things, the storehouse of all that is mysterious in the natural world", which shows that under the influence of *Book of Changes*, TCM also pays attention to the significance of vital activity of Yin and Yang in the occurrence and development of all things.

A. Theory of the growth, decline and transformation of Yin and Yang:

The transformation of Yin and Yang in the Map of the Grand Terminus contains the law of Yin declining when Yang grows and Yin growing when Yang declines from quantitative change to qualitative change, which has the same meaning as the theory in the *Emperor's Canon of Medicine* — overabundance of Yang resulting in Yin and overabundance of Yin resulting in Yang; "Cold in its extreme giving rise to heat and heat in its extreme giving rise to cold".

Law of the growth, decline and transformation of Yin and Yang in the Map of the Grand Terminus sums up the relation of Yin and Yang in the Eight Trigrams. The Eight Trigrams consist of Yin Yao and Yang Yao. The growth, decline and transformation of Yin

and Yang are embodied by every emblem of the trigrams. Meanwhile in the complete Eight Trigrams there exists the growth and decline of Yin and Yang, the ascending and descending of Qi movement. For example, during the four seasons of the year, the Winter Solstice reflects the rise of Yang, where Fu (Returning) sets; while the Summer Solstice reflects growth in Yin, where Gou (Encountering) sets (see figure 10-5)

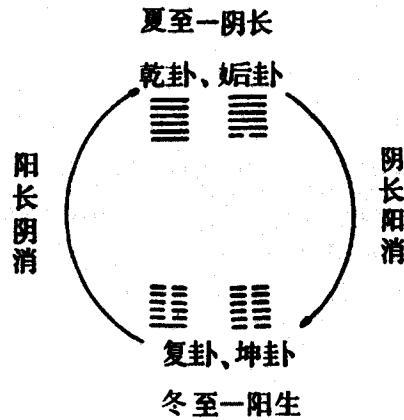


Figure 10-5 Waning and Waxing of Yin and Yang in Taiji (the Grand Terminus)

Notes to this figure:

- 夏至一阴长 the Summer Solstice — Yin waxing
- 冬至一阳生 the Winter Solstice — Yang originating
- 阴长阳消 Yin waxing and Yang waning
- 阳长阴消 Yang waxing and Yin waning
- 乾卦 trigram of Qian 姤卦 trigram of Gou
- 复卦 trigram of Fu 坤卦 trigram of Kun

B. Law of inter-dependence and inter-restraint of Yin and Yang :

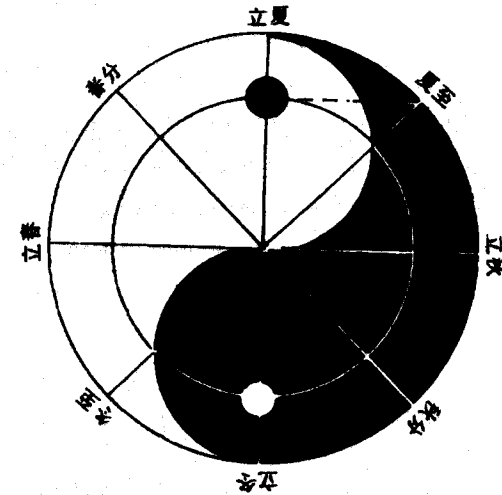


Figure 10-6 Time in the four seasons of Taiji (the Grand Terminus)

Notes to this figure:

- 立春 the beginning of spring 立夏 the beginning of summer
- 立秋 the beginning of autumn 立冬 the beginning of winter
- 春分 the Spring Equinox 秋分 the Autumn Equinox
- 夏至 the Summer Solstice 冬至 the Winter Solstice

Law of inter-dependence and inter-restraint exists between Yin and Yang, and the combination of Yin and Yang in the Map of the Grand Terminus embodies their inter-dependence, that, "Yang is based on Yin, Yin is applied in Yang", "Yin is the root cause of Yang, Yang is the root cause of Yin", "Yin alone will not occur, and Yang alone will not grow". The same meaning is expressed in the *Emperor's Canon of Medicine*, "Yin is installed in the interior as the material foundation of Yang; Yang remains on the exterior as the manifestation of the function of Yin."

Inter-dependence and inter-restraint retain while transforming,

thus, all things can develop normally. Zhang Jingyue (1563—1640, a famous physician) said, "Nature must have growth and restraint in it. Without growth it will have no root cause to develop; without restraint it will be excessive to the point of harm. Growth existing in restraint and restraint in growth together make it function well and oppose each other so as to complete with each other."

Without inter-restraint, preponderance of either Yin or Yang, even dissociation of Yin from Yang, will appear, vitality will not be maintained, which is approved by what is said in the *Emperor's Canon of Medicine*, "Dissociation of Yin from Yang [results in] exhaustion of vital essence."

(Translated by Hou Jianjun)

Chapter Eleven

The He Map, the Luo Writing and TCM Theory

Section 1 The Explanation of the He Map and the Luo Writing Through Trigrams

It is said that the He Map and the Luo Writing were derived from *Yi Shu Gou Yin Pictures* (《易数勾隐图》) by Liu Mu in the Song Dynasty. It is the combined name of two digital pictures. Legend has it that the He Map is the picture of the back of a dragon horse. The Luo Writing is the picture of the back of a divine tortoise. In ancient times, Fu Xi Shi administered his country according to the blueprint of the dragon horse. Da Yu in the Xia Dynasty (21—16 C. BC) tamed waters referring to the picture of the divine tortoise. This provides evidence for "the He gave forth the map, and the Luo the writing" in the *Great Treatise on Yi*. "He" refers to the Yellow River and "Luo" refers the Luo River. It is passed on that the Eight Trigrams come from Fu Xi Shi, as the later generations say: in the time of Fu Xi, a dragon horse came out of the Yellow River, it had on its back lines and stripes from which Fu Xi drew his Eight Trigrams; at the time of Xia Yu, a divine tortoise

came out of the Luo River, it had writings on its back from which Yu drew his writing. It is recorded in *Shi Zi* (《尸子》), the fourteenth quoted passage in *Guang Bo Wu Zhi* (《广博物志》), Yu, while taming the river, observed the water and saw a white-faced man with the body of a fish come out of the water, saying "I am the spirit of the river" then gave the He Map to Yu and went back to the water. *No Attack* in *Mo Zi* (《墨子·非攻》) records, God gave King Wen the order, he destroyed Yin Shang and founded his own dynasty. Peace realized, he went to the river and was given the He Map.

Which book were the He Map and the Luo Writing actually derived from?

It says in the *Great Treatise on Yi*, "The He gave forth the map, and the Luo the writing, [both of] which the sages took advantage." It states clearly that the Eight Trigrams of Fu Xi come from the He Map and the Luo Writing.

The earliest document that records the He Map and the Luo Writing is *Gu Ming* in *Book of History* (《尚书·顾命》). It says, "Da Yu, Yi Yu, Tian Qiu (大禹、夷玉、天球) and the He Map are in the east", which shows the He Map is listed in the east, together with Da Yu, Yi Yu and Tian Qiu (three kinds of celestial apparati). In this book, the He Map is exhibited along with Da Yu, Yi Yu and Tian Qiu in the east sacrifice room at the death of King Wen of the Zhou Dynasty. So it says in *On Gu Ming* (《顾命传》), "The He Map, the Eight Trigrams; at the time of Fu Xi Shi, a dragon horse came out of the river, and the lines and stripes on its back were used to draw the Eight Trigrams, namely the He Map." The same meaning is expressed in *On the Five Elements* in *Book of Han* (《汉书·五行志》), "Fu Xi became the king. When the He Map was

revealed to him, he drew it. It was the Eight Trigrams; Yu tamed the flooding water. When awarded the Luo Writing he exhibited it, it was Hong Fan."

Drawings, a main element of *Book of Changes*, include symbols and pictures. Symbols refer to the Eight Trigrams and the Hexagrams, which contains the He Map, the Luo Writing and the Early and Later Arrangement. Symbols can be traced back to the time of Yin Zhou. The He Map, the Luo Writing and the Early Arrangement of Fu Xi were traditionally regarded as being lost. Actually they were preserved by Taoists and exposed to the world by Chen Bo in the Song Dynasty. Mr. Liu Dajun has done a great deal of research in this field. In 1977, Ru Yang Hou (汝阳侯) tomb of the West Han Dynasty was unearthed in Shuanggudui in Fuyang City, and the Luo Writing was recorded on the unearthed "Tai Yi Jiu Gong Zhan Pan" (太乙九宫占盘); in 1973, *Book of Changes* copied on silk was unearthed from Han Tomb in Mawangdui in Changsha, and the Early Arrangement of the Hexagrams in the book made it certain that description of drawings of *Book of Changes* had existed in the early West Han Dynasty. Additional proof exists: the numbers derive from what is said in the *Great Treatise on Yi* "the numbers of heaven and earth together amount to 55" and the Luo Writing can be first found in *Qian Zao Du* (《乾凿度》) by Zheng Xuan in the Han Dynasty (*Study of the He Map, the Luo Writing and Ancient Yi Ching in West Han* 《“图”“书”二学与西汉古易》 by Liu Dajun recorded in the preface to *Da Yi Tan Wei* 《大易探微》 by Jin Wenjie. This evidence expounds that the description of drawings originated from *Book of Changes*, developed in the Han Dynasty, and was made known in the Song and Yuan dynasties. It is a main component of the study of *Changes*.

Some believed the origin of the Luo Writing had something to do with a comet. Two physicists conducted an experiment at Texas University. They let hydrogen pass through a magnetic field and an electric field. The gas that carried electricity first gave off strong light and heat (incandescence) followed by an image in the shape of “𠄎”. The two physicists hypothesized a comet might produce the same result as in the experiment when its tail of gas sweeps through the magnetic field of earth, giving off incandescence light followed by a 𠄎 image. What's more, the 𠄎 would be even larger than the moon. If this were true, this physical phenomenon of a heavenly body, appearing repeatedly from ancient times, must have left a deep impression on men. This lends credence to claims that the Luo Writing originated from a comet sighting.

𠄎 was the divine symbol for the Christians in the Middle Ages. A totem in China was the earliest record of a comet in the world: *Book of Changes* began with Yin Shang in 661 BC, derived from the He Map and the Luo Writing. If the makeup of the Luo Writing depends on a comet 𠄎, the realization and record of a comet in China was much earlier (*Potential Science* 《潜科学》 by Jia Wenyu Jan, 1987). (see figures 11-1 and 11-2)

I. The He Map

The He Map is a digital diagram composed of white and black circles and dots (see figures 11-1, 11-3) and the arrangement of these numbers:

The He Map: “Fu Xi Shi became the king. A dragon horse with a drawing on its back came out of the river. The numbers in the drawing were arranged like this: 1 and 6 at the bottom, 2 and 7 on the top, 3 and 8 on the left, 4 and 9 on the right, 50 in the middle. Fu Xi Shi drew the Eight Trigrams based on this arrangement.

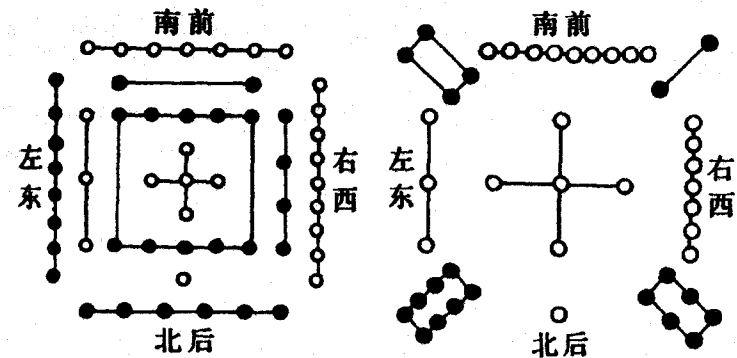


Figure 11-1 the He Map

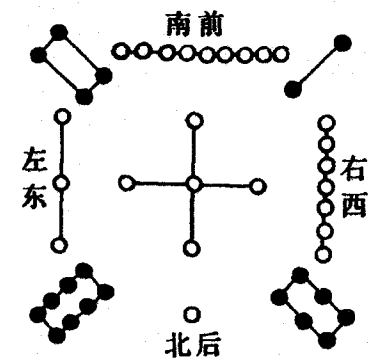


Figure 11-2 the Luo Writing

Notes to figures 11-1 and 11-2:

南前 south front 北后 north back 左东 left east 右西 right west

II. The Luo Writing

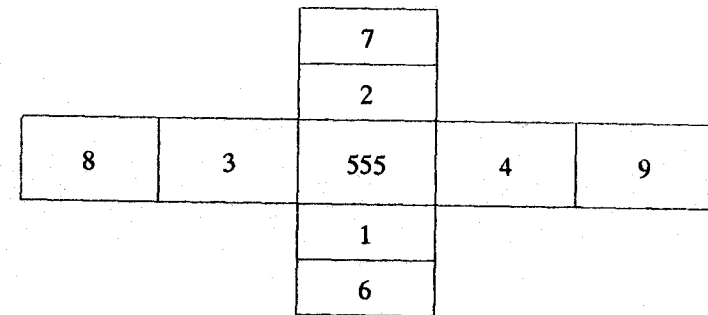


Figure 11-3 Digital Diagram of the He map (1)

“Da Yu tamed the rivers. A divine tortoise with writing on its back came out of the Luo River. Its numbers were arranged like this: 9 on the top and 1 at the bottom, 3 on the left and 7 on the right, 2 and 4 its shoulders, 6 and 8 its feet, and 5 in the middle. Yu drew Luo Writing based on this arrangement.” (*Lei Jing Fu Yi: Yi Yi* 《类经附翼: 医易》 by Zhang Jingyue)

Both the He Map and the Luo Writing apply a decimal system. The numbers used are: the He Map, ten; and the Luo Writing, nine.

It says in *Yi Mu* (《易姆》) written by Wan Nianchun in the Qing Dynasty, "The He Map is square outside and circular inside, inside the circle there is a square... The Luo Writing is circular inside and square outside, inside the square there is a circle." This stresses Yang inside Yin and Yin inside Yang.

Section 2 The Numbers in the He Map and the Luo Writing and the Five Elements

The numbers in He Map and the Luo Writing, according to the *Great Treatise on Yi*, are: "To heaven belongs 1; to earth, 2; to heaven, 3; to earth, 4; to heaven, 5; to earth, 6; to heaven, 7; to earth, 8; to heaven, 9; to earth, 10." Studies of *Changes* call it "numbers of heaven and earth". Among these numbers, 1-5 are numbers symbolizing 'generating', 6-10 are numbers symbolizing 'forming'. It says in *Hong Fan in Book of History* (《尚书: 洪范》), "Five Elements: 1, water; 2, fire; 3, wood; 4, metal; 5, earth." (table 11-1 Figures 11-4 and 11-5)

Table 11-1 Digital table of the He Map and the Luo Writing

The He Map			The Luo Writing		
2	7	4	4	9	2
3	5	9	3	5	7
8	1	6	8	1	6

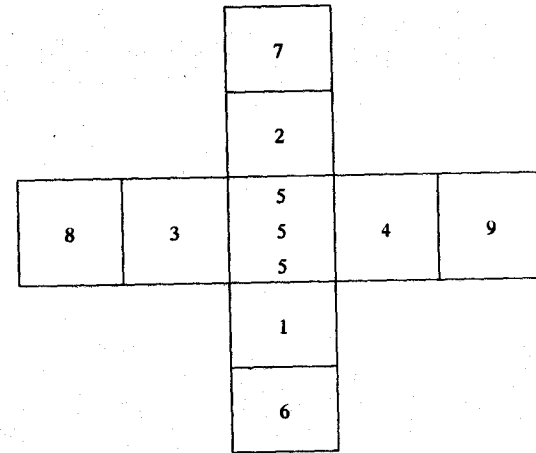


Figure 11-4 Digital diagram of the He Map (2)

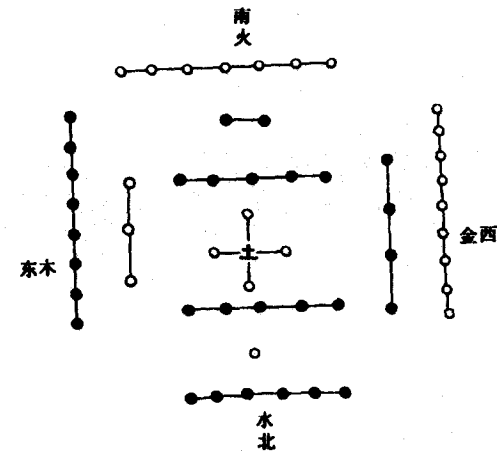


Figure 11-5 the He Map and Five Elements

Notes to this figure:

南火 south fire 北水 north water
 金西 west metal 东木 east wood 中土 middle earth

The generating and forming numbers in the He Map and the Luo Writing symbolize the Five Elements, that is, Yin and Yang convert into five elements from which everything derives. It says in *Hong Fan in Book of History* (《尚书:洪范》), "Five Elements: 1, water; 2, fire; 3, wood; 4, metal; 5, earth". Water is 1, standing for Yin, which is the basis of Yang, so the generating numbers begin with 5; fire is 2 standing for Yang without which Yin cannot convert; water Yin and fire Yang, Yin and Yang change into Qi upon which everything is produced. Wood generates on the basis of water and fire, so wood is 3; without wood there is no metal, so metal is 4; earth is the mother of everything, "earth is what everything is produced on". Earth is the beginning of generating numbers, which results in 5 as both a generating number and a forming number. Both in the He Map and in the Luo Writing, earth is located in the middle as the mother of everything, only by adding 5 can the other forming numbers form. It says in *Lei Jing Tu Yi* (《类经图翼》) "heaven 1 produces water, earth 6 gives form to it; earth 2 produces fire, heaven 7 gives form to it; heaven 3 produces wood, earth 8 gives form to it; earth 4 produces metal, heaven 9 gives form to it; heaven 5 produces earth, heaven 10 gives form to it." Zhang Jingyue says, "Water is the basis of everything, so it is 1. Everything must be divided into Yin and Yang. Since heaven 1 is water belonging to Yang, there must be earth 2 belonging to Yin, so it is followed by fire 2. when Yin and Yang combine, something must be produced, so water produces wood, and it is followed by wood 3. Something produced leads to something killed, dryness produces metal. So it is followed by metal 4. And earth is produced by heaven 5, which is given form by earth 10..."

The numbers belonging to yang in the He Map begin with 1

and terminate with 9, the numbers belonging to yin begin with 2 and terminate with 8. This arrangement is the same as that in *San Jiu Hou Lun* in *Plain Questions* (《素问:三部九候论》) "heaven and earth begin with 1 and terminate with 9", which is typical of ancient Chinese numbers.

The digital systems of the He Map and the Luo Writing are interrelated in that the numbers in the He Map amount to 55 and those in the Luo Writing, 45, the two numbers add up to a hundred. With 5 in the middle, He and Luo mean to control the evens by the odds, Yin by Yang. There are squares inside circles and circles inside squares, there are evens and odds conforming. Thus "The He Map conforms to five directions with heaven and earth, called generating numbers; the Luo Writing conforms to five elements with Yin and Yang, called forming numbers". Liu Xin (刘歆) says, "The He Map and the Luo Writing form an interlacing part, while the Eight Trigrams and *Nine Regulations* (《九章》) an integral part."

Section 3 The Time and Space Relationship Between the He Map, the Luo Writing and the System of Sun, Moon and Earth

The number arrangement in the He Map and the Luo Writing corresponds to the cycle of the movement of the sun in both time and space, which reflects the law of waxing and waning of Yin Qi and Yang Qi in the four seasons of a year (see table 11-2).

Table 11-2 The Luo Writing Directions

		南		
	4	9	2	
东	3	5	7	西
	8	1	6	
		北		

Notes to this table:

东 east 南 south 西 west 北 north

Take the Luo Writing for example, the number "1", positioned on the very right, is the extreme Yin in a year, the Winter Solstice; the number "9", located at the very south, is the extreme Yang in a year, the Summer Solstice; from 1 to 9, Yin wanes from cold to waxing Yang, heat; from 9 to 1, Yang wanes from heat to waxing Yin, cold. While the east at 3 is experiencing the Spring Equinox, which is warm, the west at 7, the Autumn Equinox, is cool. The numbers in the He Map and the Luo Writing stand for space and time. In addition, they symbolize the degree of heat in the four seasons and whether the light is strong or weak. "1" stands for the lowest degree of heat and the weakest light; "9" represents the highest degree of heat and the strongest light. The east 3 stands for the weaker light at daybreak; the west 7 the weakening light at sunset. Hence, it is true that the numbers can stand for luminosity and the degree of heat.

The basis is provided for TCM in the directional study of the state of internal organs. The Luo Writing lays a foundation for this subject. To state it clearly, it is: the very north is Kan, water,

which is cold produced in north, and cold connects with the kidneys, thus the kidneys are positioned in the north; the very south is Li, fire, which is heat produced in south, and heat connects with the heart, thus the heart is positioned in the south; the very east is Zhen, wind or thunder, which is warm produced in the east, and wind connects with the liver, thus the liver is positioned in the east; the west is Dui, water, which is cool or dryness produced in the west, and dryness connects with the lungs, thus the lungs are positioned in the west; the middle is Kun, earth, which is damp connecting with the spleen, thus the spleen is positioned in the middle.

Table 11-3 presents the numbers at the four corners as related to the waxing and waning of the moon. Number "2" at the southwestern corner stands for crescent (new moon); "4" at the southeastern corner stands for upper crescent; "8" at the northeastern corner stands for full moon; "6" at the northwestern corner stands for lower crescent.

The digital arrangement of the He Map and the Luo Writing exhibits the cycling of the sun, the moon and the earth, the changing of seasons, the waxing and waning of Yin and Yang, the transforming of heat and cold. It is valuable to the study of the state of the internal organs.

Table 11-3 The relationship of the four corners in the Luo
Writing and the waxing and waning of the Moon

(lower crescent)	(full moon)
northwestern	northeastern
6	1
7	5
2	9
southwestern	southeastern
(crescent)	(upper crescent)

(Translated by Zhang Qin)

Chapter Twelve

Book of Changes and the Science of Human Life

Section 1 A Survey of the Development of the Science of Human Life

The science of human life can be regarded as one of the most complicated branches of science. Many mysteries about it need to be resolved. Scientists have been working on it for generations, but they still can't reveal all of the secrets of the human body. Only after natural science enters into a new field will the science of human life make marked progress.

The development of the science of human life is rather slow. In the 15th century, Harvey discovered blood circulation, which gave rise to physiology as a branch of science. The 18th century was a highly developed period for biology, during which three great discoveries were made: Darwin's famous theory of evolution, which was proposed in 1859 in his work *The Origin of Species*, solved the mystery of human origin, and for the first time raised biology to the high level of pure science; after discovering micro-organisms in yeast, French chemist Pasteur initiated the theory of the origin of

life; the German botanist Schleiden and zoologist Schwann revealed the secret of the origin of living things by discovering the existence of cells. On September 17th, 1965, Chinese scientists successfully synthesized insulin, which set a new milestone for life sciences. In January, 1984, in the laboratories of the University of California at Los Angeles, the birth of a test-tube baby gave challenge to "natural selection". Looking to the near future, natural science will possibly start an attack on the science of human life.

Surprisingly, *Book of Changes*, written thousands of years ago, is found to be the key to the study of the science of human life. The principles of the Eight Trigrams, the Grand Terminus (Taiji), and He Luo contain the secrets of life science. We believe the study of the potential science of *Book of Changes* will greatly promote the development of the science of human life.

New evaluation on Yin:

People usually pay much attention to Yang, and consider Yin to be related with illness. In fact, Yin is of the same importance to the human body.

Book of Changes not only emphasizes Yang, but also stresses the important position of Yin. Among the Eight Trigrams, four belong to Yin. They are: Kun, Kan, Dui, and Gen. Kun is described as "in its largeness, supports and contains all things... all the things owe their birth to it, and the various things obtain their full development"; Kan, "shows the nature of water. It flows on, without accumulating its volume"; Dui, "the strong lines in the center, the weak on the outer edge, indicating that in pleasure what is most advantageous is the maintenance of firm correctness"; Gen, "the symbol of a mountain, one over the other, form Gen". The other four trigrams belong to Yang. They are Qian, Li, Zhen and Xun. Qian

is described as, "vast is the great and originating power indicated by Qian! All things owe to it their beginning — it contains all the meaning of heaven... Qian suggests the heavens"; Li "means being attacked... the great man, in accordance with this, cultivates his brilliant virtue and diffuses its brightness over four quarters of the land"; Zhen, "symbolizes thunder... it gives the impression of ease and development. When movement comes, its subject will be found looking out with apprehension. — the feeling of dread leads to happiness"; Xun, "suggests wind... under the condition that it develops, there will be little attainment and progress". These descriptions show that among the Eight Trigrams, half belong to Yang, suggesting heat and active nature; the other half belong to Yin, which indicates moisture storage. Both Yin and Yang are indispensable factors to life's activities.

In nature, Yin mostly lies in the sea, high mountains, and deep forests. It is also called negative ion, from which human beings can absorb Yin energy. The *Emperor's Canon of Medicine* says that those who inherit more Yin energy from nature may lead longer lives. That's why Qigong masters not only absorb Yang energy from the sky, but also absorb Yin energy from the ground. The ancient life cultivators tend to walk with bare feet, they are called "bare-foot ladies". They fill their Baihui acupoint with sky energy, and their Yongquan acupoint with ground energy. This is for the same reason.

As far as human life activities are concerned, preserving Yin and reducing its consumption is the key to longevity. This is because Yang originates from Yin, as described in *Plain Questions: Yin Yang Ying Xiang Da Lun* (《素问: 阴阳应象大论》), "Essence turns into energy", "essence nourishes energy", "Sthenic fire con-

sumes energy", "while less fire raises energy", which means the preservation of Yin is the basic way to maintain Yang. During one's lifetime, Yin energy is easily wasted. Zhang Jingyue (a famous Chinese physician circa 1563-1640) points out, "Yin is the source of Yang." Another famous doctor of TCM, Wang Bing, (Tang Dynasty) says, "Yang can be restrained by nourishing Yin." A specialist on the science of seasonal febrile disease, Wu Jutong, (1758-1836) says, "where there is a drop of Yin liquid, there is an element of life." These quotations suggest the importance of Yin.

Yin contains essence, blood and liquid, with which Yang grows. So the protection of Yin is as important as the protection of Yang. That's why those ancient life cultivators "cherished the essence to nourish the brain", "swallowed saliva" so as to preserve Yin. Again, why most women live longer than men is that women contain more Yin energy, their loss of Yin energy is relatively less. The speed of the splitting of cells in their bodies is slower; whereas men are in the opposite case, their clocks run faster, as a result, they can not live as long as women.

Qigong (Quiet Breathing Exercise) is an effective way of preserving Yin. From the view of bionics, tortoises and snakes live longer than tigers and leopards in that the former store more Yin energy in their bodies.

The physiological prosperity of Yin and pathological overabundance of Yin are different in nature. So people should be fully aware of the importance of protecting physiological Yin. To many Taoists and Buddhists, the way of keeping healthy is through living quietly. Most lead long lives mainly because they know how to protect their Yin energy.

Section 2 The Eight Trigrams and the Science of Human Life

Surprisingly, we find both macrocosms and microcosms follow the principles of the combination of the Eight Trigrams. In macrocosms, we have the combination of the planets in the solar system; in microcosms, we see the atomic structure of cells. Both the arrangement of planets and atomic structure of cells present the structural law of the Eight Trigrams.

A Chinese student named Liu Zihua, who went abroad to study in France in the 1930s, found the law of the Eight Trigrams from its structure, and thus worked out the speed and orbit of the tenth planet of the solar system. Today, some scholars hold that the map of the Eight Trigrams of Fu Xi is similar to the reaction of the atomic nucleus chain. Inspired by the Eight Trigrams, some scholars came up with a new table of chemical elements, at the same time, they found that there were eight electrons in the outermost layer. Some other scholars noticed that the map of the sixty-four hexagrams was coincidentally similar to the arrangement of the hereditary codes of biological engineering, DNA and RNA.

Why are the Eight Trigrams so miraculous? It has not been discovered yet. The Eight Trigrams exhibit the different combinations of the four orientations and four corners, reflect the relationships among thousands of different things, and present the unity of the "four forces" in the universe. Yang Yongzhong advances that the mystery of the Eight Trigrams lies in the unity of gravitation, electromagnetism, strong force, and weak force. Strong force and weak

force are two basic powers in the atomic nucleus. He also believes that the sixty-four hexagrams and 384 Yao reflect the different types of atomic structure. The existence of eight electrons in the outermost layer of the periodic table of elements is regarded as the criteria for multiplying different types of atomic structure. The combining principle of every two in pairs of the Eight Trigrams can reveal the combining and transmitting law for different types of atomic structure (Yang Yongzhong, *The Combining Principle of the Eight Trigrams and the Unity of Four Forces*).

The law of combination and development of the Eight Trigrams universally exists in the structure of substances in the whole cosmos. The human body is a super-structure of the Eight Trigrams: the head is considered Li, the feet Zhen; Xun, Kun, Qian, and Gen each standing in one of the four corners, symbolizing an internal organ. As described in *Yi, Treatise of Remarks on the Trigrams*, "Qian stands for the head, Kun for the abdomen, Zhen for the feet, Xun for the thighs, Kan for the ears, Li for the eyes, Gen for the hands, and Dui for the mouth." (See Figure 12-1).

1. Energy of the Eight Trigrams and energy of the solid organs of the human body

The Trigram of Li suggests fire. It symbolizes the original power of life and matches with the heart, which is the solid organ of fire and life gate of the human body. "Life-gate is where the original Qi comes from"; The Trigram of Zhen suggests thunder, which indicates motion. "Thunder implies rising force." It is an important stimulating element of life activities. Zhen corresponds with the liver and the gallbladder, the latter is responsible for growing Qi (energy). So it is said, "the eleven solid organs all depend upon the gallbladder"; Xun suggests wind, which is in charge of release. Release

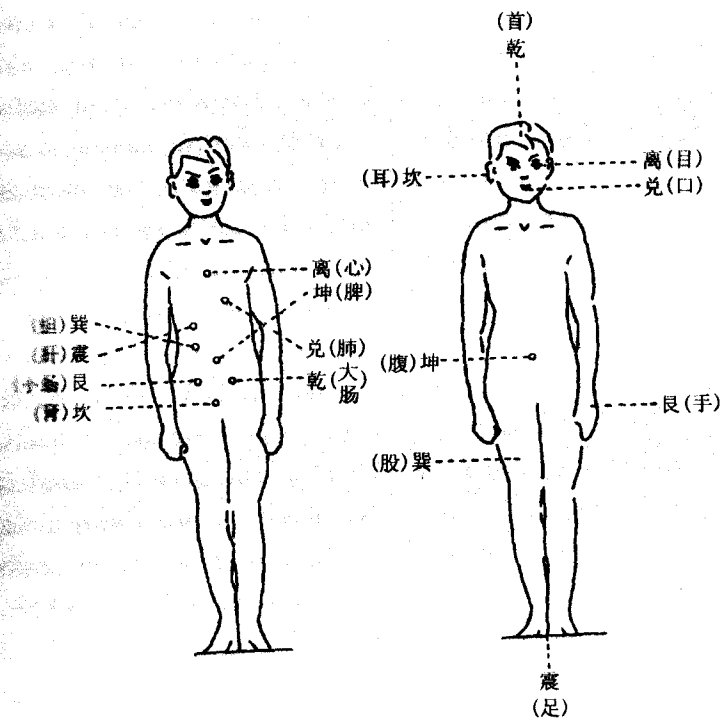


Figure 12-1 The Eight Trigrams and Human Body

Notes to figure 12-1:

The left part:

(胆)巽(gallbladder) Xun (心)离(heart) Li (肝)震(liver) Zhen

(脾)坤(spleen) Kun (小肠)艮(small intestine) Gen (肺)兑(lung) Dui

(肾)坎(kidney) Kan (大肠)乾(large intestine) Qian

the right part:

(耳)坎(ear) Kan (首)乾(head) Qian (腹)坤(abdomen) Kun

(目)离(eyes) Li (股)巽(thighs) Xun (口)兑(mouth) Dui

(足)震(feet) Zhen (手)艮(hands) Gen

is indispensable to life activities. As for human organs, liver corresponds with it; Dui means happiness. It matches with lung, which is in charge of the coordination of visceral activities; Gen suggests mountain, which indicates that life needs relative stillness so as to keep balance. It is in accordance with the spleen. "The spleen possesses the nature of earth, and controls the central places"; The Trigram of Kan denotes water, which has the function of moistening things. The human body needs moisture. Kan matches with the kidneys. "The kidneys control water metabolism and store essence"; Kun suggests earth, the human body needs necessary preservation. Kun matches with the spleen, stomach, small intestines and large intestines. "The spleen, stomach, small intestines, large intestines, three visceral cavities, and urinary bladder are all the basic internal organs as indispensable as food and shelter to human activities"; Qian suggests the supreme power, which is responsible for human life activities. It corresponds with the brain.

From this, we can see clearly how the principle of the Eight Trigrams adapts to almost everything in the cosmos, certainly including the life activities of the human body. It also illustrates that the energy of the Eight Trigrams is the motion of substances. It is the epitome of the motion law of the natural world.

2. The holography of the Eight Trigrams in the human body

Biological holography is a theory put forward in 1980 by Zhang Jingqing, a Chinese scholar (*Holographic Law of Living Things: Potential Science*, Feb. 1980). As for biological holography, we mean that each small subsection of a living creature contains the complete whole. In other words, every small organic part is the miniature of the whole. In 1982, another Chinese scholar, Ye Zhaoxin, came up with the theory of "natural holography", with

the belief that there exists the holographic law in the universe from macrocosms to microcosms. The Taiji Map and the arrangement of the Eight Trigrams in *Book of Changes* are both holographic epitomes of the universe. The Eight Trigrams can be considered as a holistic unit of the universe, while the sixty-four hexagrams show the holistic picture of the natural world, society, and human beings. That is, the holistic concept of the sixty-four hexagrams includes philosophy, natural sciences and social sciences. Each in the series of the richly-endowed Eight Trigrams is a small holistic picture of the universe, while the sixty-four hexagrams present a large one. As far as the human body is concerned, the whole body is actually a large holistic picture of the Eight Trigrams, and each subsection is a small one, as in the case of the face, hand, foot, eye, ear and abdomen. (See Figure 12-2, 12-3, 12-4, 12-5, 12-6, 12-7, 12-8, 12-9, 12-10, 12-11, 12-12.)

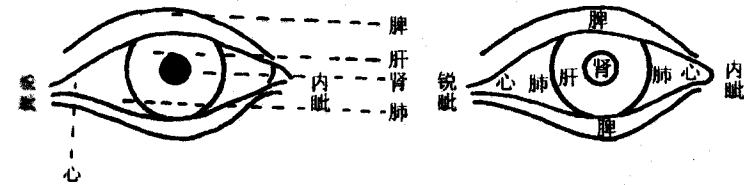


Figure 12-2 Holographic picture of human eye

Notes to this figure:

锐眦 sharp canthus 心 heart 脾 spleen 肝 liver
内眦 inner canthus 肾 kidney 肺 lung

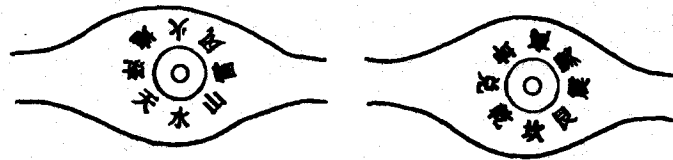


Figure 12-3 Holographic picture of the Eight Trigrams of human eye (1)

Notes to this figure:

水 water 山 mountain 泽 swamp 火 fire
 天 heaven 雷 thunder 地 earth 风 wind 坎 Kan 艮 Gen
 震 Zhen 乾 Qian 兑 Dui 坤 Kun 离 Li 巽 Xun

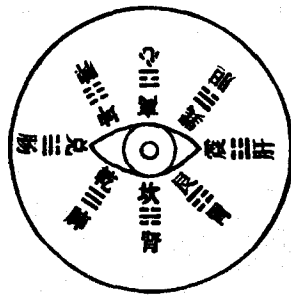


Figure 12-4 Holographic picture of the Eight Trigrams of human eye (2)

Notes to this figure:

坎 Kan 乾 Qian 艮 Gen 兑 Dui
 肾 kidney 肺 lung 胃 stomach 肠 intestine
 震 Zhen 坤 Kun 巽 Xun 离 Li
 肝 liver 脾 spleen 胆 gallbladder 心 heart

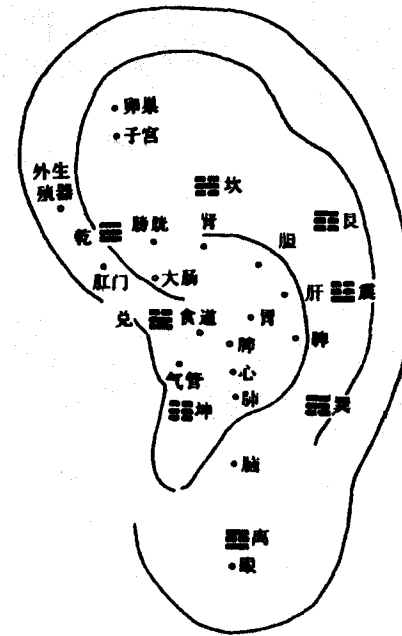


Figure 12-5 Holographic picture of the Eight Trigrams of the human ear

Notes to this figure:

乾 Qian 艮 Gen 兑 Dui 巽 Xun 卵巢 ovary
 坎 Kan 震 Zhen 坤 Kun 离 Li 子宫 uterus
 外生殖器 external genital organs 膀胱 bladder
 肾 kidney 胆 gallbladder 肛门 anus 大肠 large intestine
 食道 esophagus 胃 stomach 肝 liver 肺 lung 脾 spleen
 心 heart 气管 trachea 脑 brain 眼 eye

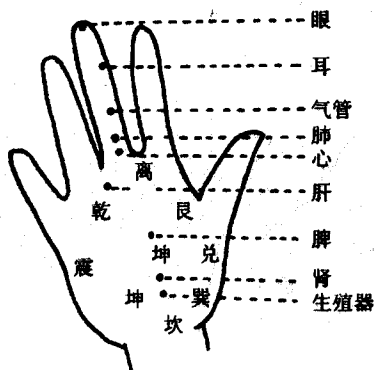


Figure 12-6 Holographic picture of the Eight Trigrams of the hand

Notes to figure 12-6:

眼 eye 气管 trachea 心 heart
脾 spleen 耳 ear 肺 lung 肝 liver
肾 kidney 生殖器 genital organs
离 Li 艮 Gen 坤 Kun 坎 Kan
乾 Qian 兑 Dui 震 Zhen 巽 Xun

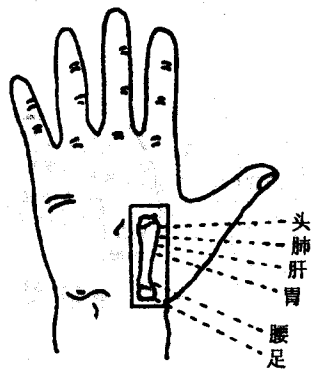


Figure 12-7 Holographic picture of the second metacarpal bone

Notes to figure 12-7:

头 head 肝 liver 腰 waist
肺 lung 胃 stomach 足 foot

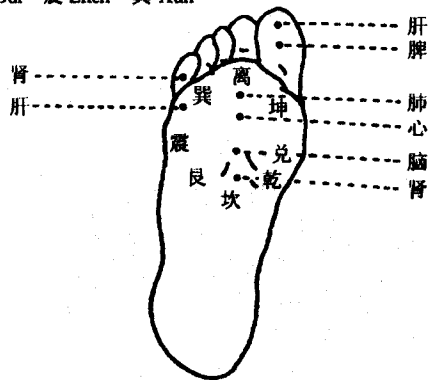


Figure 12-8 Holographic picture of the human foot

Notes to this figure:

肾 kidney 脾 spleen 心 heart 肝 liver 肺 lung 脑 brain 离 Li
巽 Xun 坤 Kun 震 Zhen 艮 Gen 坎 Kan 乾 Qian 兑 Dui

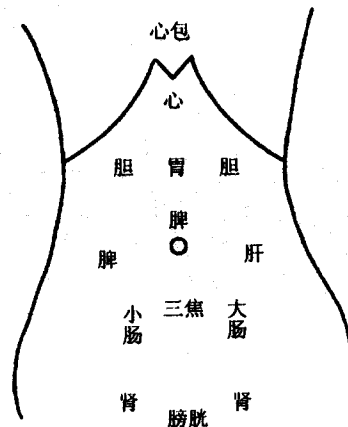
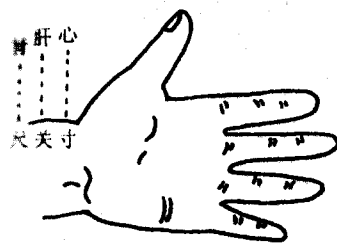


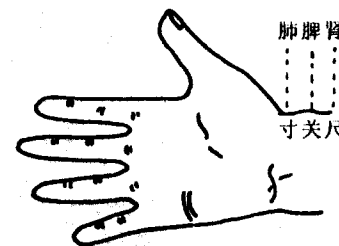
Figure 12-9 Holographic picture of the human abdomen

Notes to this figure:

心包 pericardium 胆 gallbladder 脾 spleen 心 heart 胃 stomach 肝 liver
小肠 small intestine 三焦 triple energizer meridian
大肠 large intestine 肾 kidney 膀胱 bladder



(1) 左手寸关尺全息



(2) 右手寸关尺全息

Figure 12-10 Holographic picture of the pulse condition

Notes to this figure:

- (1) holographic picture of Cun, Guan and Chi on left hand
肾 kidney 肝 liver 心 heart 尺 Chi 关 Guan 寸 Cun
- (2) holographic picture of Cun, Guan and Chi of right hand
肺 lung 脾 spleen 肾 kidney 寸 Cun 关 Guan 尺 Chi

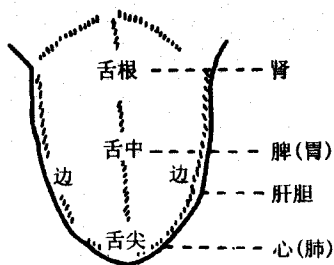


Figure 12-11 Holographic picture of the human tongue

Notes to this figure:

舌跟 base of tongue 舌中 middle of tongue 舌尖 tip of tongue 边 side 肾 kidney
脾(胃) spleen (stomach) 心(肺) heart (lung) 肝(胆) liver (gallbladder)

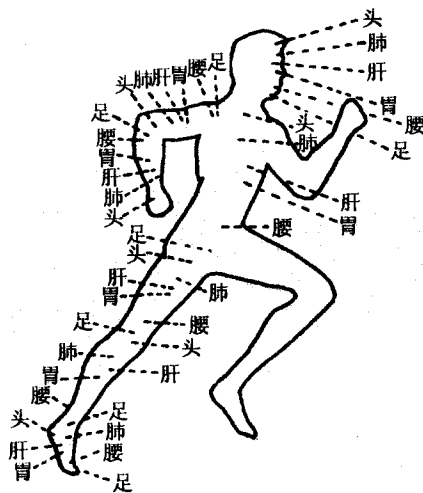


Figure 12-12 Holographic picture of the human body

Notes to this figure:

- 1) 头 head 2) 肺 lung 3) 肝 liver 4) 胃 stomach 5) 腰 waist 6) 足 foot
- 7) 头 head 8) 肺 lung 9) 肝 liver 10) 胃 stomach 11) 腰 waist 12) 肺 lung

- 13) 腰 waist 14) 头 head 15) 肝 liver 16) 足 foot 17) 肺 lung 18) 腰 waist
- 19) 足 foot 20) 胃 stomach 21) 肝 liver 22) 头 head 23) 腰 waist
- 24) 胃 stomach 25) 肺 lung 26) 足 foot 27) 胃 stomach 28) 肝 liver
- 29) 头 head 30) 足 foot 31) 头 head 32) 肺 lung 33) 肝 liver 34) 胃 stomach
- 35) 腰 waist 36) 足 foot 37) 头 head 38) 肺 lung 39) 肝 liver 40) 胃 stomach
- 41) 腰 waist 42) 足 foot

The structural law of the Eight Trigrams exists in each part of the human body in the form of holography. It is of great significance to the diagnosis and treatment, as well as acupuncture in the field of TCM as shows in figure 12-13.

TCM expresses rich holographic content. Holoistic law exists in



Figure 12-13 Ancient way of Chinese massage in doing circular motion of the Eight Trigrams

Notes to this figure:

震 Zhen 离 Li 兑 Dui 坎 Kan 巽 Xun 坤 Kun 乾 Qian 艮 Gen

the channels, the internal organs and the five elements. A record of the holographic picture of the face can be found in the *Emperor's Canon of Medicine*. For instance, a section called *Spiritual Pivot: Five Colors* (《灵枢:五色》) says, "High-bridged nose, straight and even, the corresponding places of the five solid organs are arranged in order on the central face, while that of the six hollow organs lie on the two sides of them." "The forehead stands for the head and face. The place above the space between the eyebrows, Queshang, stands for the throat; the space between the two eyebrows, Quezhong, represents the lungs; the place between the two eyes, Xiaji, is for the heart; the position under Xiaji is for the liver; the left side of the liver is the gallbladder; the part under the liver is the spleen; the central places between the alae of the nose and the cheeks (under the cheekbones) stand for large intestine; on both sides of the large intestine are places for the kidneys; under the kidneys is the umbilicus; the places above Mianwang (between the nose and the cheekbones) represent the small intestine; the part under Mianwang, which is called philtrum, stands for the bladder and uterus.

Auriculotherapy, hand therapy, and foot therapy are based on holography. Holographic diagnosis has become an important characteristic of doctors of TCM. Of course, this is indivisible from the principle of the holography of the Eight Trigrams.

3. Sixty-four Hexagrams and the science of human life

Hexagrams symbolize the law of human life, from Kun to Tai to Qian to Pi, then back again to Kun, which shows the process of a person from life to death. Kun indicates the flourishing period of Yin, the beginning of life; Tai shows the balance of Yin and Yang, and suggests that life is becoming prosperous; Qian refers to the

most vigorous period of Yang, which is the peak of life; Pi indicates the reduction of Yang, and shows that life begins to decline and fall, finally end. So the first thirty-two trigrams symbolize the first half of one's life, the remaining thirty-two signify the latter half. As Zhang Jingyue says, "Yang arises in the midnight, and is prosperous at noon, so Trigram of Fu is called Tian Gen (the beginning of a day). From Trigram of Fu to Trigram of Qian covers 32 trigrams, and signifies the first half of one's life; Yin arises at noon, and is prosperous in the midnight, therefore the Trigram of Gou is called Yue Ku (the home of moon). From Trigram of Gou to Trigram of Kun also covers 32 trigrams, and symbolizes the latter half of one's life. The first half begins with Trigram of Fu with only one Yang, then through adding it gradually comes to Trigram of Qian, Yang reaches its extreme. This process like a person from birth to middle age. The latter half starts with Trigram of Gou with only one Yin, by decreasing gradually to Trigram of Kun, Yang is completely lost. This process is like a person from middle age to death. Vertically, if only refers to the bottom linear signs, we can see Qian finishes at noon, Kun ends at midnight. When the Summer Solstice or the Winter Solstice comes, Yang stands in the middle of the heaven and earth. Judged by right and left, left controls rising, right controls falling. Rising results from Yang and it lies in spring and summer, and also corresponds with one's growth. Falling results from Yin, it lies in the northwest, it is responsible for the collecting and storing in autumn and winter, and signifies that a person's physical condition is declining." This suggests the great prospects of the Eight Trigrams to human life studies.

Section 3 Taiji and the Science of Human Life

In ancient Chinese, the term "Taiji" is endowed with the meaning of "big and extreme". It is not only the epitome of macrocosms, but also the holographic picture of microcosms. Taiji contains the motion law of Yin and Yang of the whole cosmos. Heaven and earth compose a big universe, the human body is a small universe. By analyzing the structure of the human body, we surprisingly find that both big Taiji and small Taiji are contained in it. The human body can be regarded as a big Taiji Map, a unity of Yin and Yang. For instance, the *Great Treatise on Yi* says, "Yin and Yang unite according to their qualities, with the resulting embodiment of strong and as well as soft."

TCM claims Yin and Yang come from the same resources, life-gate is the place of the original Yin and Yang, the root of water and fire. In other words, Yin and Yang of the solid organs in the human body come from the original Yin and Yang of the life-gate. Taiji holography exists in the human body.

Taking a view from the study of the origin of human life, we can see the earliest cell structure of the human embryo is formed by following the deriving structure of Taiji and the Eight Trigrams. For instance, healthy people usually have forty-six chromosomes, among which two are sexual chromosomes. Males provide spermatozoa with either X chromosomes or Y chromosomes. Being fertilized, the ovum that unites with a spermatozoon with X chromosomes will become a female embryo; on the contrary, if the ovum unites with a

spermatozoon with Y chromosome will become a male embryo. Therefore, the occurrence of Yin or Yang, male or female begins from the chromosomes in cell the nucleus.

In the deriving process of human life, from fertile egg to zygote, from zygote to two split cells, then to the period of four split cells, eight split cells, sixteen, thirty-two and so on, we can observe the coincidence between the occurrence of human life and the deriving pattern of Taiji and the Eight Trigrams. The *Great Treatise on Yi* says, "Taiji produces two elementary forms, the two forms then develop into four emblematic symbols, which further develop into the Eight Trigrams." (See Figure 12-14)

The human body is a major Taiji, each subsection includes a minor Taiji. The human brain contains Taiji, Yin and Yang. Long ago, during the Warring States (475-221B.C.) in Chinese history, it was recorded in *ZhuangZi: Xiao Yao You, The First* (《庄子: 逍遥游第一》), "In the far north of the wilderness, there is a sea called Minghai, in it is pool called Tianchi, fish are living there." It is also in *ZhuangZi: Nan Hua Zhen Yu: Xiao Yao You* (《庄子: 南华真经: 逍遥游》), it is explained as follows, "Minghai here refers to the human brain, fish refers to the Yin-Yang fish (the embracing form of Yin and Yang), Qiongfafa signifies the hair line instead of the wilderness."

As to the Taiji Map of the two halves of the human brain, some scholars claim the electrical pulse of the brain presents a shape of two embracing fish, which shows the embodiment of Yin and Yang in the Taiji Map, with a red spot in each part. This discovery is surely valuable to the study of the science of human life. In addition, the organs of the human body also show the combination of the embodiment of Yin and Yang. We can observe other cases like this as the

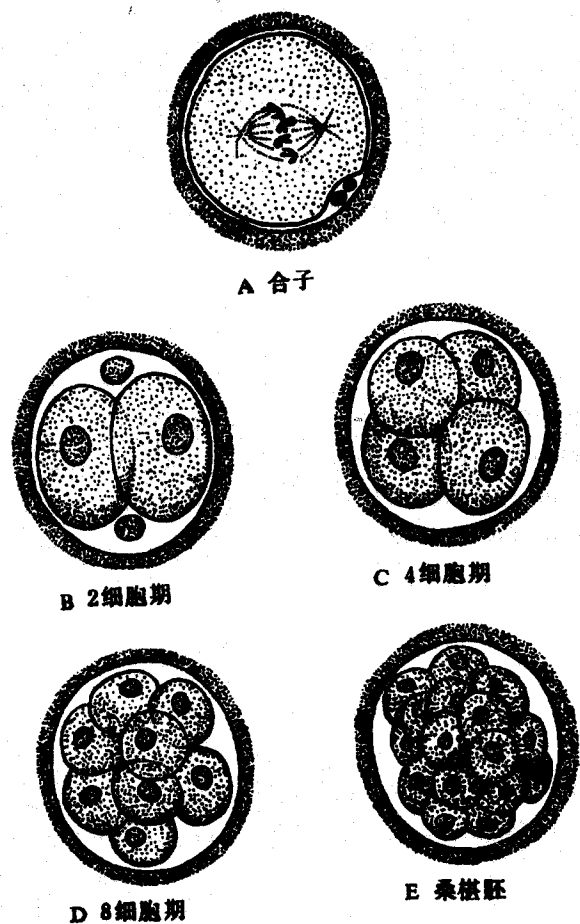


Figure 12-14 The splitting process of human fertilized egg

Notes to this figure:

- | | |
|-------------------------------|--------------------------------|
| A. zygote | B. period of two split cells |
| C. period of four split cells | D. period of eight split cells |
| E. Mulberry Embryo | |

two lobes of the liver, the two lips of a mouth, two eyes, hands and feet, etc. These phenomena again indicate the importance of the Taiji theory to the research in life sciences.

In the human body, with the combination of Yin and Yang, we observe that Yin and Yang are not balanced from top to bottom. One half is prosperous with Yin, the other half is flourishing with Yang. This statement can be found in the *Emperor's Canon of Medicine*. For instance, *Plain Questions: Yin Yang Ying Xiang Da Lun* (《素问:阴阳应象大论》) says, "Yin and Yang are the two ways for left and right", which suggests that Yin and Yang are not balanced in the human body. This theory can be further proven by the energizing activities and the changing of the rising and falling state of the internal organs. For instance, in *Plain Questions: Ci Jin Lun* (《素问:刺禁论》), it says, "The Qi (life energy) of the liver goes through the left, while the Qi of the lungs goes along the right side." *Plain Questions: Jin Gui Zhen Yan Lun* (《金匱真言论》) says, "The back belongs to Yin, the Yin in Yang is the lungs... The abdomen belongs to Yang, the Yang in Yin is the liver." Therefore, by dividing the Yin and Yang properties of the internal organs, we come to realize that the Yang energy of the lungs is stronger in the right part of the human body. The lungs control Qi, the liver stores blood. Qi belongs to Yang, while blood belongs to Yin. The Qi of the lungs goes through the right side, the Qi of the liver goes through the left side. So the Yang energy in the right part of the human body is relatively stronger than in the left part. Furthermore, in *The Classics on Difficulties, the 36th Difficulty*, a theory is advanced claiming that the left kidney is the right life-giver, which is also called "the seed of fire" of life. The fact that Yang Qi is stronger in the kidneys contains the idea that Yin and

Yang are not in balance in the human body. Because of the different conditions of Yin and Yang in the two halves of the human body, people possess different characters. Those who are flourishing with Yang usually have a stronger right brain, with greater ability in thinking and analyzing; those who are the opposite have a stronger left brain, and are usually good at delicate work and differentiation. In addition, the pulse of the right hand is stronger than that of the left, as a result, the right part of the human body has better resistance to cold, but it is likely to grow sores or catch other diseases caused by anger or hot temper. All these once more show that the whole human body is a major Taiji map with the combination of Yin and Yang in an imbalanced. So in curing diseases, much attention should be paid not only to the Yin and Yang of the internal organs, but also to the distribution of Yin and Yang in both the left and right part of the body. In general, the principle of the Eight Trigrams and the law of Taiji shows us that *Book of Changes* has contributed a great deal in exposing the mysteries of the science of human life as a new field.

Section 4 The He Map, the Luo Writing, and the Science of Human Life

The He Map and Luo Writing are famous for their mysteries involving figures. They are the main contents of the Yi Map. The mysterious implication of the two maps and the cipher codes of the figures have attracted countless researchers through the ages. For years though some mysteries have been discovered, the figures and

their arrangements have not been completely decoded. The relationship between He Luo and the science of human life lies mainly in the relationship between He Luo and the internal organs. The study of the location of He Luo and the internal organs, together with the study of the figures of He Luo and the internal organs contains the life characteristics of the internal organs.

I. The He Map and the five solid organs

The *Great Treatise on Yi* says, "To heaven belongs the digit number 1; to earth, 2; to heaven, 3; to earth, 4; to heaven, 5; to earth, 6; to heaven, 7; to earth, 8; to heaven, 9; to earth, 10," which is the origin of the generating numbers (生数) and forming numbers (成数) of the five elements. Generating numbers and forming numbers of the five elements were first recorded in *Shang Shu: Hong Fan* (《尚书: 洪范》), "Digit number 1, heaven gives birth to water; 2, earth, to fire; 3, heaven, to wood; 4, earth, to metal; 5, heaven, to earth. These numbers from 1 to 5 are called generating numbers (symbolizing the appearance of things). Number 6, earth gives the form of water; 7, heaven, of fire; 8, earth, of wood; 9, heaven, of metal; 10, earth, of soil. These numbers from 6 to 10 are called forming numbers (symbolizing the formation of things). See figure 12-15.

The generating numbers and forming numbers of the five elements contained in the He Map symbolize the appearance and the formation of myriad things and are closely related with the physiological characteristics of the internal organs of the human body.

1) "Number 1, heaven gives birth to water" and "kidney is the organ of water"

Water is the digit number "1" of the generating numbers in the He Map. Water is the extreme of Yin, and is the origin of life and

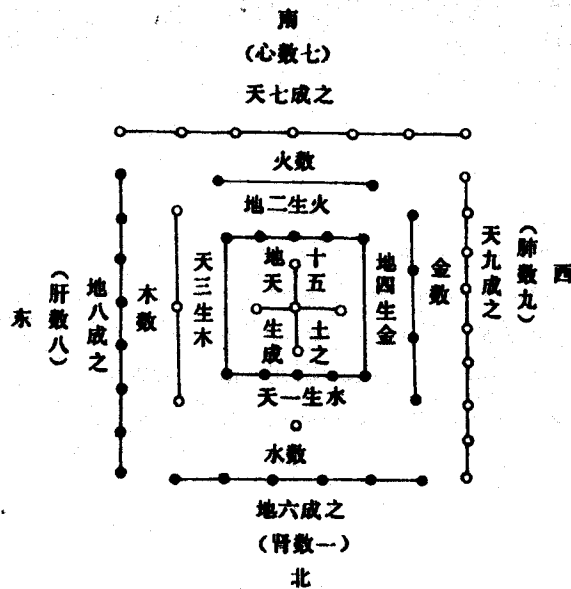


Figure 12-15 Orientation diagram of symbolism and numbers of the internal organs in the He Map

Notes to this figure:

东 east 南 south 西 west 北 north

肾数一 kidney, number 1 心数七 heart, number 7

肝数八 liver, number 8 肺数九 lung, number 9

天一生水 地六成之 heaven, number 1, generating water
earth, number 6, forming it

地二生火 天七成之 earth, number 2, generating fire
heaven, number 7, forming it

天三生木 地八成之 heaven, number 3, generating wood
earth, number 8, forming it

地四生金 天九成之 earth, number 4, generating metal
heaven, number 9, forming it

天五生土 地十成之 heaven, number 5, generating earth
earth, number 10, forming it

金数 the number of metal 木数 the number of wood

水数 the number of water 火数 the number of fire

myriad of things. So water belongs to the first number of heaven. The kidneys lie in the north, corresponding with the Trigram of Kan. The kidneys do not belong to pure Yin. One Yang linear sign is between two Yin linear signs. Yang linear sign symbolizes fire; Yin linear sign symbolizes water. So Yang in the kidneys is too precious to be consumed. The function of the kidneys is for storing. The *Emperor's Canon of Medicine* says, "When a person reaches forty, half of his Yin energy is lost by itself." This shows the importance of protecting the kidney energy for middle-aged people. The kidneys are the places to store energy. The kidney channel of foot-Shao Yin runs along the two sides of the tongue base, carrying the kidney energy to the tongue. So the saliva under the tongue is the upper source of the kidney fluid. Therefore, one should protect his energy and swallow the saliva to save the kidney fluid for middle age. The Yin of the kidneys is the base of the Yin of the five solid organs and is related to the balance of Yin and Yang of the whole body. Water belongs to the beginning number of heaven and is the base of myriad of things, so preserving the kidney energy is the first principle for preserving life. The kidneys match with the water of the digit number "1" of heaven, water gives birth to wood, the liver belongs to wood, so the liver and the kidneys are of the same source. Preserving the kidney fluid to increase the Yin of liver is of great significance to the study of the diseases of elderly people. The Trigram of Kan corresponds with the kidney water, the Trigram of Li corresponds with the fire in the heart, Kan and Li meet with fortune, water and fire meet with the decrease of sufferings. This idea is important to the life study of the human body. Therefore, life motivators hold in esteem the idea of filling Li with Kan and nourishing the brain with sperm. They regard it as a useful method to

recover one's youthful vigor. Qigong Masters cultivate themselves by linking up Kan and Li and directing strength by concentration paid to the heart and kidneys. The theory they hold is that after one is born, the Trigram of Qian changes from a trigram of pure Yang ☰ to a trigram of Li ☲ with one Yin between two linear signs of Yang. The Trigram of Kun changes from a trigram of pure Yin ☷ to a trigram of Kan ☵ with one Yang between two linear signs of Yin. So the theory founded by Taoists that filling Li with Kan and the copulation of Qian and Kun is to fill Li with the Yang in Kan so as to restore the Trigram of Li to the Trigram of Qian ☰, and is to increase the kidney strength with Yin in Li so as to make the Trigram of Kan return to a trigram of pure Yin ☷. Thus, the aim of recovering one's youthful vigor is reached by increasing the Yin in the kidneys, which is consumed day by day. This also shows water is vital not only in the natural world but also in the biological world and the science of human life. It suggests that protecting the Yin energy of the kidneys holds an important position in human life studies.

2) "Number 2, earth gives birth to fire" and "heart is the organ of fire"

The second number in the He Map is a fire, which lies in the due south and belongs to the Trigram of Li. The fire suggests the sun and symbolizes Yang energy. It is the motive force of water. Only with water and fire can Yin and Yang be energized, and myriad things come into being. Fire stands for the nature of Yang, it links with the heart, so the fire in the heart corresponds with the earth. Thus the heart and spleen are closely connected with each other. *Shang Shu: Hong Fan* says, "the nature of fire is to go up," which means fire tends to be consumed and lost. The fire in the hu-

man body includes the fire at the life-gate, the fire in the liver and the kidneys, besides that in the heart. The fire in the heart and at the life-gate should be restrained and avoid being released. The heart is in charge of storing spirit. So almost all the Chinese life scientists through the ages have taken great consideration in collecting spirit and calming down fire so as to protect Yang and strengthen Yin. *Book of Changes* points out, "It is not the proper time to do actively for the dragon lying hid in the deep," and "there will be occasion for repentance for the dragon exceeding the proper limits." That is to say, it is proper to protect the Yang in its weak state and restrain the Yang in its prosperous state, which is of great significance to the study of the life sciences. The *Emperor's Canon of Medicine* put much emphasis on the function of the heart, pointing out "when the heart beats, all the internal organs move with it" (*Spiritual Pivot: Questioning* 《灵枢:口问》); "He who loses his spirit dies, he who regains his spirit lives" (*Spiritual Pivot: Tian Nian* 《灵枢:天年》); "If the heart is sound, all the other internal organs will be in good condition. By keeping this idea in mind, you will live a long life" (*Plain Questions: Ling Lan Mi Dian* 《素问:灵兰秘典》). In general, the heart has a great influence on the physiology and pathology of the human body.

Chinese life cultivators through the ages have paid much attention to keeping the mind and restraining the fire in heat. For instance, "Zuowang" of Confucius, "Xuwu" of Laozi, "Shouyi" and "Yangshen" of Zhuangzi, "Chanding" of Buddhists, and "Lianji" of Taoists are all quiet Gong, which calms down the fire of Li. Restraining the fire of Li and protecting the mind and spirit are very significant in the field of life study of the human body.

3) "Number 3, heaven gives birth to wood" and "the liver is

the organ of wind”

Wood is the third number in the He Map. It stands for new life, marks the beginning of myriad things, and symbolizes the start of life. So the Trigram of Gen is adopted among the Eight Trigrams in *Book of Changes* to denote spring, lying in the east. Zhen belongs to thunder, *Treatise of Remarks on the Trigrams of Yi* says, “Thunder serves to put things in motion,” “all things are made to issue forth in Zhen, which is placed in the east, ... Zhen suggests the idea of thunder.” The human liver belongs to wood with the nature of wind and thunder. So the liver is an organ with deriving force and is very important in the science of human life. One whose liver energy is prosperous appears vigorous; one whose liver energy is weak appears low in spirit. Thus the prosperity and declination of human life energy are closely related to the liver conditions. Wind and thunder play important roles in the adjustment of cold and warmth, Yin and Yang in nature. Similarly, the liver acts upon Qi and blood, the Yin and Yang of the human body. The liver can adjust the volume of blood, so the *Emperor's Canon of Medicine* says, “the liver is the basic affected organ of tiredness.” Besides, the liver stores soul and has the function of adjusting the mind, so it is of great importance to the human body. The key to taking good care of the liver is the rising of the nature of wood, therefore, we should keep the liver energy in a warm state. That's why in the morning we should practise Daoyin Gong (guiding the Qi to run around the body) to make the Yang energy rise through out the body. The nature of wood agrees with generosity but is against depression. So adjusting the mind to keep it at ease is the key to taking good care of the liver. The gods of longevity in China are almost all open-minded. Although they are old in age, their eyes are still bright, their

fingers are quite nimble. Since the eyes are the Qiaos of the liver, bright eyes suggest the sound condition of the liver energy. *Spiritual Pivot: Tian Nian* (《灵枢:天年》) says, “from the age of 50, the liver energy begins to decline, the lobes of the liver begin to turn thin, the bile begins to decrease and the eyes begin to turn dim.” This shows the liver energy is the earliest to become decrepit. Because the liver is an organ of wind and wood, and corresponds with the Trigram of Zhen, it is vigorous and active and easy to be consumed. This is enough to suggest that less anger, an easy mind, and the protection of the liver energy should not be neglected. The reason why the gods of longevity have bright eyes and a healthy liver is that they are optimistic and open-minded, as a result, their liver energy flows smoothly, their decrepitude is postponed.

4) “Number 4, earth gives birth to metal” and “the lungs are organs of metal”

“4” is an ending number in the He Map, which symbolizes that all things have a beginning and an end, their growth and fruition. “4” belongs to the Trigram of Dui and lies in the west. *Treatise of Remarks on the Trigrams of Yi* says, “Dui corresponds to autumn — a season in which all things rejoice.” The Trigram of Dui symbolizes the swamp, which moistens the earth. The lungs match with it. *Plain Questions: Jing Mai Bie Lun Pian* (《素问:经脉别论篇》) says, “The lungs are the converging point of all channels in the body — the lung fluid spreads around the body and nourishes the five solid organs”. The lungs correspond with Dui, which also indicates that all things need to be collected in autumn. As for human beings, the lung energy needs to be collected up to middle age. During one's whole life, the liver is an organ with driving force and an active member. It is often highly consumed and easy to decline. *Spiritual*

Pivot points out that liver energy begins to decline at the age of fifty. Since the lung energy is in charge of collection, its consumption is relatively less, its declination comes later, only earlier than that of the kidneys among the five solid organs. The lungs begin to decline from the age of eighty. *Spiritual Pivot: Tian Nian* also says, "from the age of 50, the liver energy begins to decline, the liver turns thin, the bile begins to decrease, the eyes begin to dim. At 60, the heart energy begins to decline, one is easily melancholy, his blood and Qi become indolent, and he likes to lie in bed. At 70, the spleen energy becomes weak, the skin shrivels. At 80, the lung energy declines, it seems as if one's soul has left the body, and he often utters delirious speech. At 90, the kidney energy is drained up, the channels of the other four solid organs become empty. At 100, the five solid organs are all empty, spirit and Qi are both lost, one dies with only the outer form left." The lungs belong to metal. If dried air enters the lungs, the lung fluid is easily wasted. So keeping the moisture of the lungs is a key to lung protection. The lungs are another upper source of the fluid in the human body. If the upper source is dried up, the fluid cannot spread. The lungs are responsible for Qi, the lung energy is highly consumed during one's life. Thus we must see to the moisture of the lungs and the collection of the lung energy to agree with its physiological character. Gathering and collecting Qi in Qigong are two important devices of protecting lung energy, which is of great significance in the science of human life.

5) "Number 5, heaven gives birth to earth" and "spleen is an organ of earth"

"5" is the mother number in the He Map, and earth is the mother of myriad things, thus generating numbers arise from it.

"5" lies in the center symbolizing the Trigram of Kun and belonging to earth. Earth corresponds with a long summer and is responsible for the growth of all things. *Treatise of Remarks on the Trigrams of Yi* says, "Kun denotes the earth. All things receive from it their fullest nourishment," and also "Kun, to store things up." *Zhuan in Kun Trigram of Yi* says, "Complete is the great and originating capacity indicated by Kun! All things owe to it their birth; it receives obediently the influences of heaven. Kun, in its largeness, supports and contains all things. Its excellent capacity matches the unlimited power of Qian." All the above suggests the nature of growth and storage of earth. As for the human body, the spleen matches with it. The spleen is the source of growth and change of all things. So strengthening the spleen and enriching the earth are the important basis of maintaining life. In the course of Qi going up and down in the human body, the spleen acts as the pivot. It controls the action of Qi of the internal organs. Among the five solid organs, the burden of the spleen is extremely heavy. So we should try to be moderate in eating and drinking so as to protect the spleen. Some Qigong masters hold the idea of "Pi Gu" (fasting). This is a method of relaxing the spleen so as to ensure its normal functions. Some foreigners save a meal once a week, their purpose is also to give the spleen and stomach a chance to relax. Keeping the spleen in its normal state is a key link to maintaining normal life activities. TCM greatly emphasizes the function of the spleen and stomach. It holds that one can live with the stomach energy and will die without it. *Commentaries on Spleen and Stomach* (《脾胃论》) by Li Dongyuan is a famous work about protecting the spleen and stomach. All of the above shows the significance of protecting the spleen in life.

II. Luo Writing and the Five Solid Organs

The figures in the Luo Writing stand for the orientation and temperature of light and heat. The five solid organs in the human body match with them, which are of some help in the study of time and life sciences. Number "1" in the Luo Writing lies in the due north. It symbolizes the period with the lowest temperature and the dimmest light in one year or on one day. "1" is the emblem of cold water. The winter in one year and midnight in one day are both times with prosperous Yin and weak Yang. As for the human body, the kidneys correspond with this. During this period, we should take notice of protecting Yang. This is a period of "one Yang arising at midnight" and "one Yang arising from the extreme Yin". So a style of Qigong known as "Neidan" among Taoists suggests that at this period strength should be added to help the rising of Yang, just like adding fire in making pills of immortality.

"9" in the Luo Writing lies in the due south. It symbolizes the period with the highest temperature and the brightest light. It is the emblem of fire. Summer in a year and noon in a day are both the period with prosperous Yang and weak Yin. As for the human body, the heart corresponds with it. During this period, we should take notice of protecting Yin and preventing damage to Yang. This is the period of "Yin arising at noon". So "Neidan" Gong of the Taoists holds that at this period strength should be lessened to help the Yin arise.

The He Map and the Luo Writing have laid a foundation for the study of the combination of the orientation and the internal organs in the human body. The study of the combination of Qigong and orientation often takes this as its basis. The kidneys belong to water and the Trigram of Kan, lying in the due north. "Cold arises in the

north", cold air links with the kidneys; "The heart arises in the south", hot air links with the heart. So people who are weak in the Yang of the kidneys should face the south to acquire the Yang heat of the Trigram of Li when practicing Qigong. Similarly, the heart belongs to fire and the Trigram of Li; it lies in the due south. People with weak Yin but prosperous Yang should face the north but avoid the south so as to gain the water of Kan. The liver belongs to wood and lies in the due east. People with weak Yin of liver should face the north to acquire the kidney water with the view of moistening the liver. The lungs belong to dry metal, and lies in the due west. Those whose lungs are dry should face the north, absorb the Yin of metal and water.

To sum up, Taiji, the Eight Trigrams, the He Map, and the Luo Writing are closely related to the science of human life. They are of great significance in researching the mysteries of human life.

(Translated by Niu Jiezheng)

Chapter Thirteen

Research on the Temperament by the Eight Trigrams of *Book of Changes*

The division of temperament in *Book of Changes* is one of the oldest and most scientific dividing methods on which the temperament types of the *Emperor's Canon of Medicine* have developed. It is not only a model of the unity of mind and body, but also an example of the combination of Yin and Yang and the five elements.

Section 1 The Division of Temperaments and Its Significance

The concepts of the Eight Trigrams in *Book of Changes* include eight different sorts of things. Qian denotes heaven and gives the idea of strength; Kun, earth and docility; Zhen, thunder and firmness; Xun, wind and obedience; Kan, water and softness; Li, fire and fierceness; Gen, mountains and generosity; and Dui, swamp and tenderness.

Although they are called the Eight Trigrams, actually they stand for five different things with respect to their nature: metal, wood, water, fire and earth. Concretely speaking, Li suggests the

idea of fire, this is because Li represents the sun, which has the same property as fire; Kan represents water, Dui represents swamp, hence Kan and Dui both belong to the nature of water; Zhen stands for thunder, Xun stands for wind, they both embody the nature of wood; Kun represents earth, Gen represents mountain, so both of them acquire the properties of earth; Qian denotes heaven, it embodies the nature of metal from the sky. To sum up, people of the Eight Trigrams thus can be attributed to the following five types:

I. People of Li and its clinical significance

1) Temperament

Li suggests the sun, which is fire coming from heaven. *Treatise of Remarks on the Trigrams of Yi* says, "Li suggests the emblem of fire; of the sun." *The Great Symbolism in the Li Trigram of Yi* also says, "Li means being attached to; the sun and the moon have their respective places in the sky." Li implies the sun, Kan implies the moon, the characters of Li and Kan thus become apparent. *The Great Symbolism in the Li Trigram of Yi* says, "The great man, in accordance with this, cultivates more and more his brilliant virtue and diffuses its brightness over the four quarters of the land." With a ruddy complexion and a strong build, people of Li are outspoken, enthusiastic, easily excited and talented. They walk fast and think quickly. They have accurate and sharp eyesight. They are born inventors. *Treatise of Remarks on the Trigrams of Yi* says, "Li suggests the emblem of the eyes." People of Li can endure cold but hate hot weather, like a burning torch in winter. They are over self-confident, proud, aggressive and ambitious.

2) Figure

They are robust, and have a small head, a ruddy complexion, a rapid and strong pulse. Their eyes are not big, but shine like stars.

3) Possible Illness

People of Li have the nature of fire. Since fire is related with the heart, which is in charge of the pulse, they can easily suffer from heart diseases, such as coronary heart disease and arteriosclerosis. Again, since fire may cause damage to Qi and blood, this sort of people tend to be caught by apoplexy or cerebral hemorrhaging. People of fire usually have surplus Yang, which produces heat. These people, as a result, may easily get heart-syndromes and sthemia-syndromes. Because of the impairment of Yin fluid, there is a potential danger for them to have surplus Yang and deficient Yin. As for mental illness, there is a possibility of suffering from mania.

4) Life Expectancy

The Yang in people of Li is overabundant, thus injures the Yin fluid. So these people cannot live long lives, they may die of a sudden illness. As it is said in *The Small Symbolism in the Li Trigram of Yi*, "To say the manner of its subject's coming, how abrupt it is, as with fire, with death, to be rejected by all."

II. People of Kan and its Clinical Significance

1) Temperament

Kan indicates water from heaven, with the character of softness. *Treatise of Remarks on the Trigrams of Yi* says, "Kan suggests the idea of water, ... Kan, is precipitous and perilous." In other words, Kan denotes water, water goes down, so people of Kan are extremely introversive. *Zhuan in Kan Trigram of Yi* says, "repeated Kan shows us one defile succeeding another." It is also described in *The Great Symbolism*, "the first line, divided, shows its subject in the double defile, and yet entering a cavern with it." These people are calm, and their deep thoughts are hard to detect. They are qualified consultants with resources and astuteness.

They are greatly affected by the nature of water. Since things can be easily hidden in water, these people are quiet and calm like still water. *Treatise of Remarks on the Trigrams of Yi* says, "Kan, suggests the idea of the ears." This means people of Kan have excellent ears. They can predict things by listening to the sound of wind. As for character, they are depressed, cold, mysterious, and even dangerous." *The Great Symbolism* says, "It flows on, without accumulating its volume, it pursues its way through a dangerous defile, without losing its true nature. That the mind is penetrating is indicated by the strong line in the center, the action that is in accordance with this will be of high value, which tells us that advance will be followed by achievement." People of Kan make their lives hard, like water flowing, but they are confident and self-restrained. In general, in spite of their hardships, they will succeed in the end. *The Great Symbolism* also says, "The symbol of water flowing on continuously forms the repeated Kan. The superior man, in accordance with this, constantly maintains the virtue of his heart and the integrity of his conduct." They are described as perpetual, moistening the earth like flowing water, and devoting themselves quietly to the world.

2) Figure

People of Kan have dark skin and a thin figure. They are of middle height. They have a sunken pulse, deep eyes and big ears.

3) Possible Diseases

Kan suggests the idea of water. Water means coldness, which hurts the kidneys. So people of Kan are prone to such kidney diseases as edema, lumbago, jue-syndrome, sterility in females, morning diarrhea, and so on; Coldness may cause contraction and obstruction, so people of Kan tend to catch energy-stagnation, blood

stasis and meridian-stagnation. The water that Kan represents is coming from heaven. As a result, Yin is surplus in their bodies, while Yang is deficient. Therefore, they are likely to catch illnesses such as the deficiency of fire at the life-gate, deficiency of the Yang energy in the kidneys, and melancholia as far as mental illness is concerned.

4) Life Expectancy

These people usually live long lives. It is because their Yin energy is in surplus and there is little damage to Yang.

III. People of Kun and its Clinical Significance

1) Temperament

Kun suggests the idea of earth. It is mild and docile. *Treatise of Remarks on the Trigrams of Yi* says, "Kun suggests the idea of the earth, of a mother." *Tuan in Kun Trigram of Yi* says, "It's mild and docile, advantageous and firm." *The Great Symbolism in Kun Trigram of Yi* says, "the superior man, in accordance with this, with his large virtue supports things." Again in *Treatise of Remarks on the Trigrams of Yi*, we find, "By Kun, to store things up." People of Kun are shy. In *Zhuan in Kun Trigram of Yi*, we find, "Kun, in its largeness, supports and contains all things. Its excellent capacity matches its unlimited power. Its comprehension is wide." People of Kun are always mild, diligent and modest. In addition, since Kun suggests earth, which is moist, and moisture means stickiness and weight, the Qi and blood in these people circulates slowly in the body. As for character, they are firm, and as steady as mountains. They speak and react sluggishly. They lack sensitivity to new things. Some are quite satisfied with their present condition, and seldom ask for anything.

2) Figure

People of Kun have a yellowish complexion and a big head, they are of strong but short build, with a slow pulse, a big nose and thick lips.

3) Possible Diseases

Kun stands for earth, which is moist and belongs to Yin. Moisture corresponds with the spleen, so they have the possibility of catching illnesses of the spleen, such as diarrhoea and dropsy. Moisture also suggests stickiness and weight, the blood circulation in this sort of people tends to be slow, they easily get diseases like phlegm-retention syndrome, edema, abdominal mass, and prolapse of the viscera.

4) Life Expectancy

Blood in their bodies circulates slowly. Yin and Yang are nearly balanced. They seldom catch abrupt illnesses and usually lead long lives.

IV. People of Qian and its Clinical Significance

1) Temperament

Qian suggests the idea of heaven, symbolizes the metal from heaven. As for character, it indicates strength, firmness, fitness and justice. *Treatise of Remarks on the Trigrams of Yi* says, "Qian suggests the idea of heaven, of jade and of metal, ... Qian is the symbol of strength." *Zhuan in Qian Trigram of Yi* says, "Vast is the great and originating element indicated by Qian! All things owe to it their beginning; it contains all the meanings belonging to the name, heaven." Hence people of Qian are generous and calm. They are farsighted, and have a strong organizing ability. They can become great leaders, just as it says in *Treatise of Remarks on the Trigrams of Yi*, "Qian suggests the idea of the head."

Most people of Qian have a broad forehead, which suggests wisdom. They are broad-minded. They are able to bear as much as the sky. As for character, they constantly strive to improve themselves as it says in *The Great Symbolism in Qian Trigram of Yi*, "Heaven, in its motion, gives the idea of strength. The superior man, in accordance with this, turns himself to ceaseless activity." While on the other hand, they are hypocritical, vain, over self-respected, and even self-centered.

2) Figure

This kind of people usually have a broad forehead, a pale and square face and a strong body with thick bones. They are of medium-height with strong pulses.

3) Possible Illness

People of Qian have the nature of metal, and are overabundant with Yang, which implies heat and dryness. Hence, they tend to catch lung diseases such as a cough, bronchitis, constipation, and diabetes. Dryness may easily hurt the Yin fluid, so diseases reflecting a shortage of Yin may also occur.

4) Life Expectancy

People of Qian are generous and modest. They can bear as much as a valley. In general, they live long lives. But since excess Yang may damage Yin, their life span can be only of medium length.

V. People of Xun and its Clinical Significance

1) Temperament

Xun suggests the idea of wind, wind from the sky. *Treatise of Remarks on the Trigrams of Yi* says, "Xun suggests the idea of wood, of wind, ... wind serves to scatter the genital seeds of things." The nature of wind belongs to Yang and controls motion.

Hence people of this sort also show the character of Yang. They are impetuous, nimble and acute. They are good at diplomacy, having the qualities of a diplomat. People of Xun come and go in a hurry like a gust of wind. Wind is apt to change, once in a while it becomes fierce, and then changes into a breeze. Just like the wind, these people are changeable too. Sometimes they are stubborn like a strong wind, sometimes docile like a soft wind. *Zhuan in Xun Trigram of Yi* says, "We see the weak obedient to the strong. ... The strong has penetrated into the central and correct place, and the will of its subject will be carried into effect." What's more, people of this kind tend to be jealous, over-sensitive, doubtful and narrow-minded.

2) Figure

People of Xun are usually thin with a dark complexion. They are either a little bit tall, or very short. They have a string-like pulse.

3) Possible Illness

People of Xun have the characteristics of wind, wind matches with liver, so they have the potential tendency of catching liver diseases. Wind controls movement, there is a possibility of liver-wind stirring inside the body. High blood pressure, apoplexy, and allergy also occur frequently. Wind suggests change, accordingly, these people's nervous systems seem unstable. As a result, they easily suffer from the unbalance of the nervous system, such as the stagnation of liver energy, hysteria, and neurosis.

4) Life Expectancy

These people are fond of activities. Their Yang energy is quickly consumed. In general, they lead short lives.

People of the Eight Trigrams are grouped into the above five

types. This means, Gen, Dui and Zhen have merged into the five types. For instance, Gen actually possesses the character of Kun, as it says in *Treatise of Remarks on the Trigrams of Yi*, "Gen suggests the emblem of a mountain." Mountain belongs to earth, which is firm and unmovable. *Zhuan in Gen Trigram of Yi* says, "Gen denotes stoppage and rest." *Treatise of Remarks on the Trigrams of Yi* says, "He rejoices in Gen." People with the character of Gen are as docile and kind as the people of Kun; Dui suggests swamp, which implies moisture. *Zhuan in Dui Trigram of Yi* says, "The strong in the center, the weak on the outer edge." *Treatise of Remarks on the Trigrams of Yi* says, "Dui is the symbol of pleasure and satisfaction." People of Dui are just like people of Kan, they are introverted, belonging to Yin character; Zhen suggests the emblem of thunder, *Treatise of Remarks on the Trigrams of Yi* says, "Zhen is the symbol of a stimulus to movement." *The Small Symbolism in Zhen Trigram of Yi* says, "When the movement approaches, he is in a position of peril: the weak line is mounted on a strong level." People of Zhen are active, they appear strong, but are actually weak in nature. *Zhuan in Zhen Trigram of Yi* says, "The movement like a crash of thunder terrifies all within a hundred li; it startles the distant and frightens the near." Also in *The Great Symbolism in Zhen Trigram of Yi*, it says, "The superior man, in accordance with this, is fearful and apprehensive, cultivates his virtue, and examines his faults." Zhen is something like Xun. Therefore, the temperament of the people of the Eight Trigrams are actually grouped into the above five types.

In addition to the born elements and social elements, temperament is affected by geographical elements too. For instance, in southern places where the sun always shines, people of Li are more

numerous; in northern places where water flows constantly, people of Kan are more numerous; in eastern places where sea wind blows hard, people of Xun are more numerous; in western places where the climate is hot and dry, people of Qian are more numerous; and in the central land where there is wet earth and a range of mountains, people of Kun are more numerous.

Although people of the Eight Trigrams are divided into Li, Kan, Kun, Qian and Xun, modern people who live in society are highly involved in many social activities, so they are also greatly influenced by social elements. Therefore, people of typical attribution are quite few, but frequently seen are those with several kinds of characters mixed together. For instance, the type of pure fire is seldom seen, but the combination of wind with fire, earth with fire, or metal with fire appear everywhere. So, in judging the temperament of a person, one needs to make a synthetic study. The above descriptions concerning the people of the Eight Trigrams are of great value to the study of anthropology, sociology, psychology and clinical diagnosis.

VI. Features of the temperament by the Eight Trigrams

1) Temperaments by the Eight Trigrams are typical examples of the combination of Yin, Yang, and the five elements

Temperaments by the Eight Trigrams in *Book of Changes* have shown the combination of Yin, Yang and the five elements. Li (fire) shows the overabundance of Yang; Kan and Dui (water) shows the overabundance of Yin; Qian (metal) means that Yin and Yang are balanced, but with a little surplus of Yang; Xun and Zhen (wind) show the overabundance of Yang; Kun and Gen (earth) indicate that Yin and Yang are in equilibrium but with a little surplus of Yin. See the following table:

Table.13-1 Matches of temperament of the Eight Trigrams with Yin, Yang and the five elements

Types of temperament of the Eight Trigrams	Five elements	Yin - Yang
Kan, Dui	water	Overabundance of Yin
Li	fire	Overabundance of Yang
Qian	metal	Yin - Yang in balance but with excess of Yang
Xun, Zhen	wood	Overabundance of Yang
Kun, Gen	earth	Yin - Yang in balance but with excess of Yin

2) People of similar characters are on good terms

Each of the Eight Trigrams has its own features, people in accordance with this also have their respective temperaments. *Treatise of Remarks on the Trigrams of Yi* says, "Thunder serves to put things in motion; wind to scatter their genital seeds; rain to moisten them; the sun to warm them; what is symbolized by Gen, to arrest and keep them in their places; by Dui, to give them joyful course; by Qian, to rule them; and by Kun, to store them up." People of similar kind are on good terms. *Wen Yan in Qian Trigram of Yi* says, "creatures of the same nature seek one another, water flows towards the place that is wet and damp; fire rises up towards what is dry." The same happens to human beings. People with similar characters may easily get along and cooperate well. For instance, Kun (earth) and Kan (water) both belong to Yin, their attributive people may get along well with each other; Xun (wind) and Li (fire) belong to Yang, their respective people are also on friendly terms. On the other hand, Kun (earth) and Xun (wind) are different, their respective people seldom meet. Wind tends to move,

earth is sticky, therefore, one is quick, the other is sluggish. It is hard for them to be in accord. Kan (water) and Li (fire) are incompatible with each other, it is also hard for these two kinds of people to cooperate, which is called "the eight characters do not fit." (The eight characters are in four pairs, indicating the year, month, day and hour of a person's birth, each pair consisting of one Heavenly Stem and one Earthly Branch, formerly used in fortune-telling.)

3) Each of the Eight Trigrams has its own features, but their attributives can get along harmoniously with one another

Just as it says in *Treatise of Remarks on the Trigrams of Yi*, "the symbols of mountains and collection of water interchanged their influences; those for thunder and wind excited each other the more; and those for water and fire did each other no harm." This shows whether in the natural world or human society, although there exist so many different things, they can get along harmoniously. Even opposite things, or contradictory people in nature, can ensue a harmonious conformity.

Section 2 The Theory of Temperament in the *Emperor's Canon of Medicine* and Its Clinical Significance

The feature of the temperament theory in the *Emperor's Canon of Medicine* lies in the combination of mind and body, just as in *Book of Changes*. The division of different types takes Yin, Yang and the five elements as their theoretical basis. For a detailed description one can consult *Spiritual Pivot: Yin Yang Twenty-five Kinds of People* (《灵枢: 阴阳二十五人》) and *Spiritual Pivot:*

Tong Tian (《灵枢:通天》). The first book takes the division of fire, metal, wood, earth and water as its basis. People in accordance with this are called people of fire, of metal, of wood, of earth, and of water. Here we have a selection from the original treatise: "to talk about the people of wood, ... his face is long but pale, the head is small, the back and shoulders are broad, with little hands and feet. Very capable, using the mind more, taking a lot of trouble in thinking, but doing less physical work. He is active in spring and summer, but inactive in autumn and winter. Being affected and then catching illness." The second book *Spiritual Pivot: Tong Tian* (《灵枢:通天》) considers Yin and Yang as its basis, dividing people into five types as follows: people with overabundant Yang, people with overabundant Yin, people with Yin and Yang in balance, etc.. Concretely speaking, they are people of Greater Yang, of Lesser Yang, of Sunlight Yang, of Greater Yin, and of Lesser Yin. As the original treatise says, "People of Greater Yin are greedy, unmerciful and stingy; they seem humble and neat, but are actually evil and dirty in their hearts. They like receiving, but hate giving. They do not submit to the circumstances. They always follow behind others in doing things so as to see clearly whether the thing to do is beneficial or harmful."

I. The theory of temperament of the *Emperor's Canon of Medicine* connotes pathology and pathogeny

In addition to the individual differences in physiology and psychology, temperament theory also includes pathology. Every kind of person has its own tendency of contracting possible diseases. As described in *Spiritual Pivot: Yin Yang Twenty-five Kinds of People*, "People of wood, ... they are active in spring and summer, but inactive in autumn and winter. After being affected, they are caught by

illness; people of fire, ... they tend to lead short lives and die abruptly. They can bear spring and summer, but cannot endure autumn and winter. When autumn or winter come, they get affected and then catch a disease." In *Spiritual Pivot: Tong Tian*, it points out, "people of Greater Yin present themselves that their Yin blood is turbid, their Protecting Qi is weak and unstable, they lack for the coordination between Yin and Yang; people of Lesser Yin lack in the coordination among the six hollow organs, so hemorrhaging easily occurs, Qi easily declines; people of Greater Yang are usually ill-tempered and die suddenly; people of Lesser Yang are strong in Yin, but weak in Yang. Their lung power is also weak. Once getting sick, it is hard for them to recover. The above descriptions can be regarded as clinical references.

On the aspect of pathogeny, the temperament theory of the *Emperor's Canon of Medicine* puts much emphasis on the significance of temperament to the cause of disease. It shows that diseases are greatly influenced by the temperaments of people, including the individual differences in physiology and psychology. It is believed that the occurrence of illness is not only related to the physiological conditions of the patient, but also with his psychological state. This is why the *Emperor's Canon of Medicine* takes into consideration the patient's courage or timidness in the study of the occurrence of diseases.

II. Foundations of treatment

According to the different state of blood and Qi of the five Yin-Yang types of people, the temperament theory of the *Emperor's Canon of Medicine* brings forth the rule of treatment, emphasizing the adoption of different therapies for different individuals. For instance, *Spiritual Pivot: Tong Tian* says, "People of Greater Yin,

more Yin but no Yang, their Yin blood in turbid, or their Protecting Qi is not smooth, then Yin and Yang are not harmonious. They have relaxed muscles and thick skin. To this kind of people, it's not proper to give cathartics; ... people of Greater Yang, more Yang but less Yin. ... Do not lessen his Yin but try to lessen his Yang. ... Examine whether surplus or deficient, if surplus, you can use cathartics; if deficient, you can nourish him by tonic; if neither surplus nor deficient, you can treat him by the book. This indicates, to recuperate the Yin and Yang of people, one must examine which type they belong to, and treat them differently. *Plain Questions: San Bu Jiu Hou Lun* (《素问:三部九候论》) says, "We must observe his figure to see whether he is thin or obese so that you can recuperate his Qi and blood. If it is a full case, you can use cathartic; if it is a weak case, then you can use tonic". *Spiritual Pivot: Ni Shun Fei Shou* (《灵枢:逆顺肥瘦》) says, "If a patient is strong in Qi and blood with solid skin, after being affected, you can give him acupuncture treatment, while at the same time, make sure to put the needle into a deeper place under the skin and keep it inserted for a while. ... If a patient is all skin and bones with thin lips, low voice, dilute blood and smooth Qi, in this case, it's easy to cause damage to his Qi and blood. If giving acupuncture treatment, be sure to put the needle into a shallow position and withdraw it quickly." The above shows that the establishment of laws for treatment in the *Emperor's Canon of Medicine* take the physical conditions of people as a criteria.

III. The foundation of diagnosis lies in the overall analysis of the illness and the patient's conditions

The temperament theory of the *Emperor's Canon of Medicine* attaches great importance to the individual physical conditions in di-

agnosis, and is always adopted to predict the occurrences of diseases. For instance, in *Plain Questions: on Channels* (《素问:经脉别论》), it says, "The method to diagnose a disease is to examine the psychological state and the physical conditions of a patient, then you can judge what kind of disease he has caught."

The temperament theory of the *Emperor's Canon of Medicine* has developed down through the ages. It is of practical significance in guiding the theories, methods, prescriptions and the pharmacy of TCM.

The temperament theory of the *Emperor's Canon of Medicine* not only bases itself on the temperament analysis of the Eight Trigrams in *Book of Changes*, but also makes further developments to it. Moreover, it has promoted the development of the basic theories of TCM.

Section 3 Contrastive Studies of Temperament in China and Abroad

Indications:

I. By contrastive study of the division of temperaments in China and abroad, we come to realize that the division of *Book of Changes* is the oldest and the most scientific method in the world. Later, it was greatly developed in the way the combining physiology with pathology in the *Emperor's Canon of Medicine*, then applied in medicine, and later became one of the basic theories in the field of TCM.

II. The advantage of the division of temperaments in *Book of*

Changes and the *Emperor's Canon of Medicine* lies in that they adopt Yin, Yang and the five elements to communicate the nature of the universe with the temperaments of human beings, showing that the conformity between them is also the combination of biology with physics, and suggesting that creatures in nature and properties of substances supplement each other, which lay a theoretical foundation for the medicated diet of TCM (for further details, see Chapter Nineteen)

III. The dividing method in the two books puts special emphasis on the relationship between human beings and society, claiming that temperament is not isolated but changeable.

IV. The advantage of the dividing method of temperaments in the two books lies in the conformity of mind and body, that is, the conformity between form and soul.

V. The division in the two books shows that temperament changes with the flourishing and declining of the Yin, Yang, Qi and blood of people, emphasizing the importance of postnatal influence on human temperaments. (See Table 13-2)

Table 13-2 The comparative study of temperament in *Changes* and *shrewd*

People of Li	People of Xun	People of Kun	People of Qian	People of Kan
Li suggests the emblem of fire coming from the sky. People of Li are strong with a ruddy complexion and quick, solid pulse. They are enthusiastic, vigorous, brave, quick-minded, and outspoken; but they are also ambitious, proud and aggressive. They can endure cold, but hate hot weather. They tend to suffer from heart disease and do not live long.	Xun suggests wind coming from the sky. People of Xun are thin and have a yellowish complexion, with thin pulse like a string. They are active, nimble, capable, outspoken, and good at diplomacy, but hot-tempered, oversensitive, and unstable on the other hand. They tend to catch liver diseases, and live medium-length lives.	Kun suggests the earth. People of Kun are mostly short and fat with big heads and a yellowish complexion. They are docile, honest, hard-working, practical, steady and introverted; but slow-minded on the other hand. They tend to catch spleen disease, but live long lives.	Qian suggests the metal that comes from the sky. People of Qian are those with white complexions, big foreheads, square faces, big bones, thick pulses, and strong builds. They are generous, far-sighted, capable, energetic, and self-restrained; but hypocritical, vain, and over self-absorbed. They tend to catch lung diseases, and live medium-length lives.	Kan suggests water. People of Kan are those with dark complexions, thin figures, and a sunken pulse. They are highly introverted, shrewd and deep by nature, sometimes depressed. They tend to catch kidney disease, but live long lives.

People of Eight Trigrams in *Book of Changes*

	People of Greater Yang	People of Lesser Yang	People of Greater Yin	People of Yin and Yang in balance	People of Lesser Yin
	<p><i>The five types of people in the Emperor's Canon of Medicine</i></p>	<p>With more Yang and less Yin in their bodies, people of Greater Yang tend to concern themselves with great affairs, do everything of their will, and never regret anything done. They are ambitious, rash and boastful.</p>	<p>With slightly more Yang than Yin, people of Lesser Yang are self-important and self-conceited. They usually stand the chance to be low officials. They prefer social intercourse rather than domestic affairs.</p>	<p>With more Yin and less Yang, people of Greater Yin are greedy without mercy. They prefer taking to giving. They appear humble, but are actually evil in nature. They do not submit to circumstances. They take a wait-and-see attitude to almost everything.</p>	<p>With both Yin and Yang in balance, this sort of people enjoy living in quiet places. They are steady and resistant. They have nothing to fear and nothing to cheer. They submit to circumstances. While holding high social positions, they are courteous and modest; in humble positions, they do not fawn upon others.</p>

	People of fire	People of wood	People of earth	People of metal	People of water
	<p><i>Spiritual Pivot: Yin Yang Twenty-five Kinds of Persons in the Emperor's Canon of Medicine</i></p>	<p>With ruddy complexions, little heads, small hands and feet, and fast-beating hearts, people of fire are fiery-tempered; they always think before coming to a conclusion; they neglect money. They are active in spring and summer, but inactive in autumn and winter; they have short life spans with sudden deaths.</p>	<p>With white complexions, little heads, broad shoulders, straight backs, small hands and feet, people of wood are capable; they do much thinking but less physical work. They are active in spring and summer, while inactive in autumn and winter.</p>	<p>With yellowish complexions, round faces, big heads, big bellies, people of earth are fat, docile, easygoing and goodnatured. They do not enjoy politics. They are active in autumn and winter, but inactive on spring and summer.</p>	<p>With white complexions, square faces, little heads, little bellies, small hands and feet, light bones, people of metal are honest and upright, calm and firm. They show great abilities as officials. They are active in autumn and winter, while inactive in spring and summer.</p>

Greek	Choleric type	Sanguine type	Phlegmatic type		Melancholic type
	brave, energetic, enthusiastic, easily excited, straightforward, and outspoken.	nimble, flexible, unsteady, with rapid response.	slow-minded, quiet, calm, with remarkable endurance.		lonely, envious, with many doubts, but good at thinking and observation.
German	Short but strong type		Muscle type		Thin but long type
	with broad shoulders and round waists, small bulky hands and feet, short figures but powerful builds, this kind of people are outspoken, and easily get excited.		muscular, active, introverted, with moderate figures.		with long arms and legs, thin figures, this kind of people are quiet, calm, and thoughtful.

Russia	Knotted type	Active type	Quiet type		Weak type
	aggressive, powerful, easily excited, unbalanced, uncontrollable.	clever, active, nimble, powerful, optimistic.	with moderate character, quiet, calm, and self-restrained.		timid, self-restrained, irresolute, slow and passive.
Japan	B type		AB type	O type	A type
	active, eloquent, sociable, credulous, unsteady and easily distracted.		with the character of both A and B.	firm, calm, confident, steady, energetic and self-controlled.	sensational, taking too much bother in thinking, prejudicial, and over-critical.

(Translated by Niu Jiezhen)

Chapter Fourteen

Book of Changes and Forecasting

Section 1 *Book of Changes* Series and Forecasting

“Along with the development of science, man’s ability to forecast a potential danger is enhanced. Man’s ancestors in remote antiquity came down from the trees, went out of the forests, and lived on through countless hazards. This was impossible without certain forecasting abilities.”

However, these abilities have degenerated. It is true that while evolving, man also degenerates. To arouse these abilities and bring them back to life is not a historical regression, but just the opposite. It is necessary for human development, and is a breakthrough in biology.

As the earliest book on forecasting in the world, *Book of Changes* contains profound forecasting theories, which are of great forecasting value, and predates the Delphi Art of Ancient Greece, which was purported as communing with the gods.

Forecasting is the science to foretell future things. It can infer and judge the tendency of development and the ending of things. Forecasting methods include inferring according to causality and judging according to the interdependence between the forecasting

objects and inter-related factors. It is of great significance in military affairs, economics, human affairs, meteorology, and the treatment of disease.

Book of Changes is in the form of divination and is the earliest account of it. This can be seen in the *Great Treatise on Yi*, “The sages set forth the diagrams, inspected the emblems contained in them, and appended their explanations — in this way the good fortune and bad fortune (indicated by them) were made clear. ... When initiating any movement, he (the superior man) contemplates the changes (that are made in divining), and studies the prognostications from them. ... Heaven hangs out its (brilliant) figures from which are seen good fortune and bad, and the sages made their emblematic interpretations accordingly.” There are 384 divination judgements and 450 commentaries. The divination methods were recorded in the *Great Treatise on Yi* and *Zuo Zhuan* (《左传》) and *Guo Yu* (《国语》), so it is necessary to consult these two books while studying divining methods in *Book of Changes*. In *Zuo Zhuan*, the forecast for the 12th year in the reign of Emperor Zhao, includes; Nan Kuai was going to betray his country and divined Kun 坤 and Bi 比 (Bian Gua): ‘The yellow lower-garment; — there will be great good fortune.’” In *Zhou Yu: Guo Yu* (《周语: 国语》) there is, “The King Xiang was seriously ill ... and said, when King Cheng of Jin went back to ascend to the throne, I heard that the people of Jin divined Qian 乾 and Pi 比 (Bian Gua): ‘High prestige that does not last long — there will be three kings returning from Zhou to claim the throne. The first was King Cheng, the third is not known yet, but the second must be Prince Zhou.’” The great military forecasting book *The Art of War* was also enlightened by *Book of Changes*. The earliest divining methods recorded in

Changes is that of the Eastern Zhou Dynasty.

Forecasting is a profound and mysterious science the secrets of which cannot yet be revealed by modern science and technology. The boundless universe is so intricate that the objects have thousands of links. Living things cannot be isolated from physics, and the relations (including reactions) between them cannot yet be explained by human beings. Modern science forecasts by applying physical methods and by employing instruments and equipment. If we could combine living things' potential reactions with science, we would have unexpected forecasting abilities. While this sounds like a scientific fantasy, it is realizable. As a reaction of living things and physics, of nature and psychology, forecasting analyzes and judges many uncertain factors, so those who forecast need knowledge of many subjects.

At all times and in all countries, forecasting develops fairly slowly, because it is often mixed with superstition. In our research into forecasting, we should neither make it a mystery nor degenerate it into fatalism, but should combine it with modern science and turn it into a driving force to improve production. This is the orientation of forecasting.

In other countries, efforts are being made to probe forecasting. According to *The Old Testament*, the prophet Moses was the first to find the source of water through forecasting. German miners used forecasting in prospecting mines, the Frenchman Ama forecasted in detective work, and American soldiers in the battlefields of Vietnam forecasted to find land mines. That is to say, many standard ways failed, while forecasting gained unexpected results. It might link living things and physics through the sub-consciousness, and therefore make psychology react to nature. Forecasting is unfathomable.

(If we can discard the mysterious color and select its scientific connotations, it will offer boundless prospects.) No wonder a scholar at the Finnish Academy of Science and Technology said, "The achievements in forecasting of *Book of Changes* will shock the world."

Forecasting is the science to foretell future things, to infer and judge their developing tendencies and final results. It includes short-term, middle-term and long-term forecasting. As to forecasting methods, there are external, cause-and-effect, and perceiving methods. The external method is to foretell developing tendencies according to external signs. Those signs will surely be confirmed through the objects. This method includes omen forecasting and analogy forecasting. The former is to foretell concealed signs from warning signs, and the latter is to foretell analogous results from analogous signs. The cause-and-effect method is to forecast according to the relationship between cause and effect, of which the cause-and-effect in time is chief; that is, to make comprehensive analysis of the relation between the past, the present and the future. The perceiving method is to forecast internal signs from external audiovisual signs, as in the physiognomy of TCM. These three methods are all normal methods, while *Changes* is a special one. That is, it belongs to procedure forecasting and reaction forecasting. Procedure forecasting is uncontrolled by human beings. It combines the complex relationship between heaven, the earth, and man through certain forecasting procedures, simultaneously making use of inference, association and prejudgment. Because the Ci covers a wide range, psychological forecasting must be employed, too. The essence of divination methods in *Changes* lies in "inferring images from numbers". The forecasting methods in *Qi Men Dun Jia* (《奇门遁甲》) and *Liu Ren* (《六壬》) belong to this sort of forecasting, as it is

said in the *Great Treatise on Yi*, "If we prolonged each by the addition of the proper lines, then all events possible under the sky might have their representation". Perceiving forecasting includes various forecasting methods developed among the people based on that of *Changes* and forecasts mainly through the reaction between living things (life) and physics, at the same time encompassing the Eight Trigrams of *Book of Changes*. This has developed the procedure method. For example, in the state of Qigong or a similar state, to forecast by making reaction between man and man, or between man and objects, at the same time combining with certain procedure (e. g. the Eight Trigrams). The advantage of this method lies in bringing man's intelligence into full play. This is a forecasting method with great potential. If it could be combined with modern science and technology, it would offer boundless prospects.

Section 2 Divination in *Changes* and Information

Divination, image, reason, and number are the four components of *Book of Changes*. The substance of divination is forecasting. *Book of Changes* was the earliest book on forecasting, and its trigrams and Yao Ci are the text of divination. *Book of Changes* is in the form of divination, and divination is an inseparable part of the book. The trigrams and Yao Ci themselves are the stock of information, which is the information concluded from social practice and productive practice. Divination links all kinds of information, helps human beings adapt themselves to the changes of the environment, and makes psychological preparation through forecasting. Mr. Cao

Heng suggested the text of divination in *Book of Changes* was of the same kind as the oracle inscriptions of the Shang Dynasty (16th-11th century B. C.) on tortoise-shells or animal bones, and was mainly used to divine things about fights, sacrificial rites, fortunes, marriages, food and drink, etc. "The numbers of the Great Expansion, (multiplied together), make 50" in the *Great Treatise on Yi* is the divinatory method recorded in *Book of Changes*. Divination has spread far and wide among the people. In the Han Dynasty, the *Tai Yi Xing Jiu Gong* method in *Yi Wei: Qian Zao Du* (《易纬: 乾凿度》) was very popular, out of which the mysterious *Qi Men Dun Jia* (《奇门遁甲》) was developed. It includes the Three Stems and the Six Branches, which are put separately in the Nine Gongs. The Three Stems are Yi, Bing, Ding of the Ten Heavenly Stems (used as serial numbers, and the Six Branches are Wu, Ji, Geng, Xin, Ren and Gui of the twelve Earthly Branches (used in combination with the Heavenly Stems to designate years, months, days and hours). The Three Stems and Six Branches are put separately in the Nine Gongs, and are governed by Jia (the first of the twelve Earthly Branches). Dun Jia is used to foretell good or ill luck and so be able to know when or how to avoid bad luck. It is also called the Dun Jia Scriptures.

Taoist magical figures and incantations belong to another branch of divination. In *Magic Figures and Incantations Scriptures* (《灵枢经》) is an account of this point. Chanting incantations had been employed in Taoist Qigong.

The divining Ci in *Book of Changes* is the origin of the divination in the system of Yi; and in the Han and Song Dynasties, divination in Yi was developed. Content in Yi is a theory based on Yin and Yang and the Five Elements, as well as the inter-promoting

and counteracting relations of the Five Elements; and is a branch of the theory of changes. In the successive dynasties, there have been many books on content or divination. One feature of these books was that they all employed the Eight Trigrams and Heavenly Stems and Earthly Branches, that is, through what were called "Adopting the Stems Method" and "Adopting the Branches Method" to extend the relation between the Eight Trigrams and the objects and foretell good or bad luck. Therefore, divination was made a mystery, and fatalism was mixed in it. Divination in the Han Dynasty actually originated from Meng Xi, a specialist in the theory of changes of the Western Han Dynasty. His way of divination was to accord the sixty-four hexagrams and 384 positions (of the hexagrams) with years, seasons, months and days. *The Jiao's Book on Yi* (《焦氏易林》), written by Jiao Gan in the Han Dynasty, was the ancestor of the two branches of changes and divination in which one hexagram was expanded into sixty-four hexagrams, and then 4,096 hexagrams. *The Jing's Commentary on Book of Changes* (《京氏易传》), written by Jing Fang, is a relatively early book on changes and divination, written in the Han Dynasty. Taught by Jiao Gan, Jing Fang was the founder of "Jing's Theory" on changes in the Western Han Dynasty. This book involved Yi Die Hun Bu Gua, Method of Na Jia, Solar Terms Hexagrams, etc.. The divinatory method accounted for in this book was to take the Eight Trigrams as eight Gongs, with one pure trigram governing the other seven, changing ones in each Gong, and combining the hexagrams's emblems of the lines. This became the basis of divination afterwards.

Huang Ji Jing Shi (《皇极经世》), written by Shao Yong in the Song Dynasty, may be classified as a book of forecasting. It is a book on changes and divination that had great influence in the Song

Dynasty and is a master of argumentation, physics, and life. As a book of inferring astronomical phenomena, it employs twelve trigrams symbolizing the twelve periods and infers good or bad luck according to the periods. Every rise and fall, order and disorder, can be foretold from divinatory symbols. This book had a great influence on mathematician Cai Jitong, whose knowledge in mathematics was imparted by Shao Yong.

The divination in *Book of Changes*, in addition to space and position, also stresses time. Each trigram is divided into six positions, each bearing a certain time posture, so that things in different stages can be foretold. It is the character of precise time and space that is the advantage of forecasting in *Book of Changes*. Therefore, forecasting in *Changes* is the outstanding embodiment of oriental thought.

The reason *Book of Changes* is considered a great book of methodology is that it is a book on forecasting, and views of forecasting are found through the book, which is embodied in the *Great Treatise on Yi*, "*Book of Changes* exhibits the past, and teaches us to discriminate (the issues of) the future; it makes manifest what is minute, and brings to light what is obscure." "That solid ice comes after force" is a good embodiment of the method of prediction. Mr. Li Yan suggested the forecasting of *Book of Changes* is "first come the numbers, then the images", and is "non-normal cause-and-effect forecasting".

In *Book of Changes*, symbols take the place of language. These symbols, including divinatory symbols, symbols of places, the Taiji overlapping hexagram patterns, 64 trigrams, and the 384 positions of the hexagrams, is a center of information and the material basis of divination. In every dynasty, the Eight Trigrams was em-

ployed in divination, and also widely used in forecasting weather, geography, disease, good or bad luck, fortune or misfortune, etc.. There were many forecasting methods in addition to those recorded in books that were spread far and wide among the people. Among those recorded in ancient books, *Qi Men Dun Jia* (《奇门遁甲》) and *Liu Ren* (《六壬》) are the most famous, with the character of forecasting as the organic unity of time and space. In the earliest use of Chinese characters, inscriptions on bones or tortoise shells during the Shang Dynasty, there were accounts of weather forecasting using the Eight Trigrams. It is said that, in the period of the Three Kingdoms, (220 - 280AD) Zhuge Liang, a statesman and strategist, summoned wind and rain, using the Eight Trigrams to divine weather.

At present, the Eight Trigrams are used to divine weather condition, disease, and good or bad luck. Architects use it to divine the best location of a building, and it is said that this has certain accuracy, the mystery of which remains to be unrevealed. Recently, some have used the Eight Trigrams to divine the sex of the foetus. The method is: set the positions of heaven and earth by the dates of birth of the parents: if the date is an odd number, the position will be a Yang line; if the date is an even number, the position will be a Yin line. Then set the position of man by the date of pregnancy. Three positions form a trigram, and then decide whether the trigram is Yin or Yang according to the Eight Trigrams, thus the sex of the foetus is inferred. This method is said to be efficacious to a certain degree. (created by Ma Qingyu, a physician-in-charge in the People's Hospital of Mengzi County, Yunnan Province). It is clear that forecasting can be used in all walks of life. In short, *Book of Changes* contains rich theories and methods of forecasting. Also

the development and creation among the people, forecasting, much of which is concealed, is radiating with light. It is worth exploring and should be distinguished from superstition.

Section 3 Divinatory Methods in *Book of Changes*

I. The set-up of a Trigram

The method is recorded in the *Great Treatise on Yi*, "The numbers of the Great Expansion, (multiplied together), make 50, of which (only) 49 are used (in divination). (The stalks representing these) are divided, into two heaps to represent the two emblematic lines, or heaven and earth). One is then taken (from the heap on the right), and placed (between the little finger of the left hand and the next), that there may thus be symbolized the three (powers of heaven, earth, and man). (The heaps on both sides) are manipulated by fours to represent the four seasons; and then the remainders are returned, and placed (between) the two middle fingers of the left hand, to represent the intercalary month. In five years there are two intercalations, and therefore there are two operations; and afterwards the whole process is repeated ... Therefore by means of the four operations is the *I* completed. It then eighteen changes to form a hexagram. (The formation of) the eight trigrams constitutes the small completion (of the *I*). " In other words, take one alpine yarrow out of 50 and use the remaining 49 to forecast, and there will be eighteen changes, every three constituting one trigram. Eighteen changes constitute six lines, and therefore, a hexagram is formed. Each change consists of four steps: 1) divide the

49 alpine yarrows into two piles randomly; 2) put one aside from the right pile; 3) divide the right and left piles separately into groups of four; 4) set aside the remaining alpine yarrows with the one from step 2. Thus change 1 is completed. Then proceed with those in groups of four to complete change 2, the four steps are the same as those of change 1. Similarly, change 3 is completed. Now, the number of the groups of four is odd, that is Yang line (undivided) —. If the number is even, it is Yin line (divided) --. Thus every three changes constitute one line, and eighteen changes constitutes six lines; the set-up of a hexagram is completed. This is an Original trigram. Then we can consult the texts of the lines to foretell good or ill luck. For example, if we get Kan, we can consult the text of the line about Kan.

II. Changed Trigram

According to the *Great Treatise on Yi*, "To heaven belongs (the number) 1; to earth, 2; to heaven, 3; to earth, 4; to heaven, 5; to earth, 6; to heaven, 7; to earth, 8; to heaven, 9; to earth, 10. There are five numbers belonging to the heaven and five to the earth. The numbers of these two series correspond with each other (in their fixed positions), and each has another that may be considered its mate. The heavenly numbers amount to 25, and the earthly to 30. The numbers of heaven and earth amount to 55. It is by these that the changes and transformations are effected, and the spirit-like agencies kept in movement." In *Changes'* divination are changed trigrams in the divining procedure. A changed trigram is a Zhi trigram, based on the original trigram. Changed trigram must be employed according to changes and Yao Ci (the text pertaining to individual lines). There are 64 trigrams in *Book of Changes*, and six lines in each trigram, and the numbers of every line (we get in

the set-up of trigram) are no more than 9, 8, 7, and 6. After we get the original trigram, we have to get a changed trigram. 7 and 8 are numbers of no changes, while 9 and 6 are those of changes. Therefore, we must seek changed trigrams if we meet 9 or 6. How do we get the four numbers: 9, 8, 7, 6? As mentioned above, whether the line is Yin or Yang is decided after change 3, and there are 4 possible conditions of the number of groups of 4:

36 alpine yarrows: $9(4 \times 9 = 36)$, called Lao Yang (change)

32 alpine yarrows: $8(4 \times 8 = 32)$, called Shao Yin (no change)

28 alpine yarrows: $7(4 \times 7 = 28)$, called Shao Yang (no change)

24 alpine yarrows: $6(4 \times 6 = 24)$, called Lao Yin (change)

Lines of 7 or 8 are those of no change, while 9 and 6 are those of change. To prepare for changed trigram, the number of the lines gained after every 3 changes must be one of those 4 numbers. The principles of changing trigram are: 1) if all the numbers of the 6 lines are 7 or 8, which are numbers of no change, consult the original trigram; 2) if the number is 9 (Yang) change it to 6 (Yin); if the number is 6 (Yin), change it to 9 (Yang) and consult changes and Yao Ci of the original trigram; 3) if all the 6 numbers are 9 or 6, then it is completely a changed trigram, so changes and Yao Ci is not needed here, but just change 9 to 6, or 6 to 9, to get the Zhi trigram. Change a trigram to another trigram and consult the Gua Ci (judgements) of the resulting trigram.

How to get changed Yao:

Step 1: get 6 lines after 18 changes, and get the numbers of each of them (9 or 8 or 7 or 6), for example, ☰ is the Jing trigram.

Step 2: 55, the number of heaven and earth minus the sum of

the 6 numbers, and get the number of Ying, for example, Jing trigram ䷗, $55 - (8 + 9 + 8 + 7 + 7 + 8) = 55 - 47 = 8$ (number of Ying). Then count the number of Ying from bottom to top, then from top to bottom of the trigram, each line corresponding to one number, and the line at which the counting ends is the changed line (Yao). For example, in Jing trigram ䷗ (original trigram), the number of Ying is 8. Count 8 from bottom to top and from top to bottom of Jing trigram, and end the counting at the fifth line from the bottom, which is the changed line, and so Jing trigram is turned to Sheng trigram ䷗ (changed trigram), then consult Yao Ci of the fifth line of the changed trigram.

III. Which Ci should be consulted

After getting the 6 positions, whether we should consult judgements of the original trigram or texts of the changed line of the Zhi trigram or texts of changed line of original trigram depends on the following: 1) if all the 6 lines are 7 or 8, no change, consult judgements of the original trigram; 2) if all the 6 lines are 6 or 9, change them all, 6 to 9, 9 to 6, and consult corresponding judgements of the Zhi trigram; 3) if all 6 lines except the one on top are 6 or 9; and there is no changed line, the number of Ying is 7 or 8, consult judgements of the original trigram; 4) if one line is a changed line, consult the text of the changed line of the original trigram; 5) if there are more changed lines than lines of no change, consult texts of the lines of the Zhi trigram (changed trigram); 6) if there are less changed lines than lines of no change, consult texts of the changed lines of the original trigram; 7) if there are 3 changed lines and 3 lines of no change, consult judgements of both the original trigram and the changed trigram.

In general, the process of divination in *Book of Changes*

Numbers — Images (Trigrams) — Inference of Conclusion.

(The divination method is based on *Annotation of Book of Changes, New Research on Divination Methods of Book of Changes* by Gao Heng.)

Section 4 Characteristics of Divination in *Book of Changes* and Its Influence on Forecasting

As the earliest forecasting method, divination in *Changes* is characterized by its flexibility in explaining the trigrams. The Eight Trigrams and the 64 trigrams form a huge stock of information, so the trigrams, lines and texts in it are all-inclusive and can be comprehended by analogy. The well-informed nature has positive significance to psychological forecasting. In addition, according to texts of individual lines, phased forecasting can be made from the line at the bottom to the line on the top, so the forecasting method in *Yi* has advantages in time. According to the Circle of Hexagrams and the Circle of the Eight Trigrams, the forecasting method in *Yi* can forecast directions, too. This point was fully developed by later forecasting methods such as that in *Qi Men Dun Jia* (《奇门遁甲》) and in *Liu Ren* (《六壬》). Another important feature of the forecasting method in *Yi* is, as Mr. Li Yan has said, "Non-normal cause-and-effect forecasting, means first come numbers, then come images". This is distinctive Chinese forecasting method (the method of forecasting images with numbers) and is a great creation of content in *Changes*. Following the forecasting method in *Yi*, forecasting methods prospered in the Han, Wei and Jin Dynasties. Famous

books on forecasting, such as *Jing's Commentary on Book of Changes* (《京氏易传》) *Huang Ji Jing Shi* (《皇极经世》), *Qi Men Dun Jia* (《奇门遁甲》), *Liu Ren Da Quan* (《六壬大全》) and so on, appeared in succession; various forecasting methods spread far and wide among the people. Forecasting human affairs, astronomical phenomena, geomantic omens, and so on, the all-inclusive and multifarious classical forecasting art in *Changes* can be looked on as the basis of forecasting in later ages. Although the forecasting art in *Changes* was once regarded as superstition, and was misunderstood for a time, the embryo of forecasting art contained in it may be after all accepted as the pioneer of modern forecasting art. Many mysteries of the forecasting methods in *Changes* and of various forecasting schools developed from it are still confusing, and the gate of this mysterious forecasting palace is still waiting for us to open it. Certainly, to explore the reasonable core of the serial classical forecasting art in *Changes*, and disclose the mystery so as to take it as the enlightenment to develop the rising modern forecasting art, it can not be lumped together with superstition. It is totally unrelated to those swindlers who deceive people through forecasting.

There is an upsurge abroad in research and study of *Book of Changes*, and the Eight Trigrams forecasting art in it has aroused interest among scholars. The Chan Yi Gong created by a famous Chinese artist, Li Kuchan, has been used for a hundred years and is said to be rather efficacious. Shao Weihua reported that, for many years, using the Eight Trigrams, he had forecasted the weather, industrial injuries, accidents, missing men, diseases, life and death, marriages, disasters, success or failure, and so on and had proved fairly efficacious. It is mentioned in Section 2, to forecast the sea, the embryo with the Eight Trigrams, and in Hong Kong and Taiwan,

some practice Fengshui geomancy with the Eight Trigrams, and apply it to architecture. The facts, which are too numerous to mention individually, show that the Eight Trigrams forecasting art has a bright future.

Section 5 Forecasting with Qigong

Forecasting with the Eight Trigrams is the comprehensive effect of information and psychology, as well as biological and physical reactions. In addition, the interactions between the one who forecasts and that who is forecasted should be taken into consideration.

The forecasting ability can be improved when integrated with, especially, Qigong. Mr. Liu Dajun suggested, "In the hundreds of millions of years of the ancient people's evolution towards modern times, a lot of the forecasting instinct of human beings has degenerated. Still, living beings retain some of these instincts. For instance, animals can foretell earthquakes, while human beings cannot. It is not that human beings have never had this ability, but, after evolution, this ability has degenerated. Can human beings be inferior to those animals? If human beings had never had forecasting ability, they would not have survived those dangers and disasters time after time. This instinct is preserved in very few people, and is called an "unusual faculty". There is nothing strange for it is just a form of intelligence. There are always reports and stories at home and abroad about people with forecasting aptitude. It is impossible to say that all the ancient people possessed this ability. Maybe just some

people had it. Qigong can bring out man's unusual faculties, so it is possible that Qigong can arouse and revive the former forecasting ability of human beings. Therefore, marvelous forecasting effects will be achieved if the state of Qigong can be applied to forecasting in cooperation with the time-and-space forecasting process of the Eight Trigrams in *Book of Changes*, and if it makes use of the mental, biological and physical interaction between the one who forecasts and what is forecasted. Probably, this will be a new field of the development of Qigong. In the process of forecasting, if we make full use of the sixth sense, the forecasting effects will certainly be improved.

The method is, the one who forecasts stands quietly (or sits quietly) facing south, adjusts his breathing, gets rid of distracting thoughts, closes his eyes and imagines, and thoughts highly concentrated on who is forecasted or what is forecasted, then enters the state of Qigong. When there is a sense transfer reaction distinguishing whether it's negative (Yin) or positive (Yang) and make analysis and judgement:

I. Judge the quality: if the reaction is positive, that is, one feels pleasant, the body light and floating, the skin warm, the body slightly trembling, all these senses symbolize success, and smoothness. Otherwise, if there is a negative reaction, for example, one feels depressed, the body heavy and sinking, and apathetic as well as cold, these symbolize failure, and adversity.

II. Judge the direction: the Later Arrangement of the Eight Trigrams in *Book of Changes* should be adjusted. The one who forecasts stays at the center of the Eight Trigrams, facing south, and judges the directions according to the direction from which the reaction comes and the Eight Trigrams. For instance, if the reaction comes towards him, it is Li (South); against him, it is

(North); directed at the left side of him, it is Zhen (East); directed at the right side of him, it is Dui (West); and those from the other 4 directions, are Yin (Northeast), Xun (Southeast), Kun (Southwest), and Qian (Northwest).

III. Judge the time: it is decided by the speed of the occurrence of the reaction. If it comes fast, that means it will be in the near future; if it comes slowly, that means it will be in the distant future. According to the specific matters, further analysis can be made on the specific time.

With the Eight Trigrams, if only positions are to be decided, one needs not consult the judgements. In judging human affairs, psychological tactics can be employed through cooperating with texts of divination.

Not all of us are capable of these methods, but only those who have activated their potential forecasting aptitude in the state of Qigong. However, some people can do it after exercising Qigong and getting training. It is because we are all human beings, just like many children after training can "read" with their ears. Since the state of Qigong is sometimes not steady, forecasting often fails, and therefore presents a profound mystery to be explored.

In recent times, although there are man-made satellites, probes and spaceships, telecommunications, radars, and other advanced apparatus used in telemetering, only physical methods are used. Presently, the development of science has not risen to the level of biological and physical sense transfer, so the forecasting is quite limited. With the rapid development of science, we can apply the most advanced technology, at the same time, without forgetting the ancient enlightenment. Therefore, there will be a combination of macro and micro as well as modern and ancient methods.

Probably, in some areas which cannot be explored with modern equipment, the ancient methods are available. It was because they lacked advanced equipment to rely on that human beings had to develop various defensive and forecasting abilities, containing scientific and physiological theories. Exploring this degenerated ability, revealing these mysteries, and arming them with modern equipment, the vistas of scientific forecasting will be vast.

So far, no one can combine ancient forecasting methods with modern advanced science and technology. Any scholar who can integrate the most advanced modern forecasting methods with the Eight Trigrams forecasting system of *Book of Changes* will surely make great contributions to the science of forecasting. Consequently, there will be a great breakthrough in forecasting earthquakes, diseases, weather, architecture, human affairs, disasters and accidents. The above-mentioned facts at home and abroad, the achievements made in forecasting orbits and the movement of the planets, the new period of elements, the 8 electron structure, and so on, all suggest that the Eight Trigrams forecasting system of Yi contains a broad field in both macro and micro aspects. Since Chinese and foreign scholars applying the Eight Trigrams forecasting system have made outstanding achievements in astronomy, chemistry and biology, we can expect epoch-making developments in forecasting geology, weather, diseases, and human affairs. Along with the exploration of the science of human body, this will surely come to pass.

(Translated by Zhao Chenwei)

Chapter Fifteen

Book of Changes and Forecasting Medical Science of TCM

Section 1 Physiognomy in TCM

Physiognomy in TCM, actually referring to reading one's skull and face, mainly includes reading the skull, face, eyebrows, nose, mouth, philtrum, eyes, ears, hair and so on, and belongs to examination by the eyes in TCM. These body parts can foretell not only various diseases but also one's life and death as well as one's temperament to a certain extent.

Physiognomy, the practice of foretelling diseases and life and death through reading one's face, has great value in TCM. "That which must be reflected outside." This is the specific application of "penetrating the concealed from the appearance" and belongs to penetrating forecasting methods. In ancient times, there had been reports about Bian Que (an ancient noted physician, about 500 B.C.) diagnosing the disease for the crown prince through observation and feeling his pulse as it says in the *Emperor's Canon of Medicine* that "He who observes and knows the diseases is a highly skilled doctor." The face is the representative part in diagnosing

diseases through observation, because channels and collaterals converge here. "The twelve channels and 365 collaterals of the human body, of which all the blood and Qi (vital energy) converge in the face and empty into various orifices, ... the body fluids fume and stream in the face." Therefore, in the *Emperor's Canon of Medicine: Xie Qi Zang Fu Bing Xing* (《黄帝内经: 邪气脏腑病形》), it says, "The Yang meridians of the hands and feet converge in the face." The channels and collaterals are bridges between the internal organs, so the face centrally reflects the condition of the vital essence and energy of the internal organs. So the face is a mirror of the internal organs and the center of various parts of the body, as well as the path linking the five Zang organs (the heart, liver, spleen, lungs and kidneys). A sage of the past said, "One's Qi and vitality is concealed in the heart during the night and seen from the eyes in the day." There are special articles in the *Emperor's Canon of Medicine* on foretelling one's life and death and diseases through observation. For instance, *Spiritual Pivot: Five Colors* (《灵枢: 五色》) says, "the bridge of the nose bulges high, and is straight and regular, the five Zang organs are distributed in order along the central line of the bridge, and the six Fu organs (the gallbladder, stomach, large intestine, small intestine, bladder, and triple energizer) along the two sides of it, the head is in the area between the eyebrows and the central part of the forehead, and the heart is below the area between the eyebrows. If the five Zang organs are in good condition..." That is, from the face, we can determine the conditions of the internal organs. Still in *Spiritual Pivot: Five Colors*, it says that "The deep sinking into the bone is the sign of inevitable diseases; if there is a transitional color, it shows that even if the disease is very serious, it will not cause death." The sinking and the

change of colors suggest diseases in corresponding parts. Also in *Five Colors*, it says that those who have clear sense organs live long: "Mingtang is the nose; Que, the area between the eyebrows; Ting, the forehead; Fan, the outer side of the cheeks; Bi, the area in front of the tragus. If these parts of a man are regular and full-grown, and can be seen clearly ten steps away, he will surely live long, until over 100." That is the so-called long-life appearance. There are definite accounts in *Spiritual Pivot: Wu Yue Wu Shi* (《灵枢: 五阅五使》), "The colors of the five sense organs are clear. The center of the forehead must be wide and plump, so that the five colors can be determined from the nose. If one has a wide nose, his cheeks and tragus appear outward, the muscles are thick and full, the earlobes look downward and outward, the five colors are normal, and five sense organs are regular, he will surely live a long life." This is a good and long-life appearance. On the contrary, "If the five sense organs are not clear, the center of the forehead is not wide, and the nose is narrow, the cheeks and tragus appear inward, the muscles are thin, the earlobes and the upper angles turn inward, the man with such an appearance, even though he has normal pulse condition and complexion, is weak; let alone when he is ill." This is a bad or dying-early appearance. In short, regular five sense organs, clear outlines, and plump and lustrous face suggest a long life span; while irregular five sense organs, unclear outlines, and thin and gloomy face suggest dying young. (See Figure 31.)

It has been proved in practice that physiognomy is important in knowing a man. Wide forehead and full Qi in the forehead suggest a well-developed brain, sufficient brains, and much intelligence; while a pointed head, narrow forehead, short distance between the

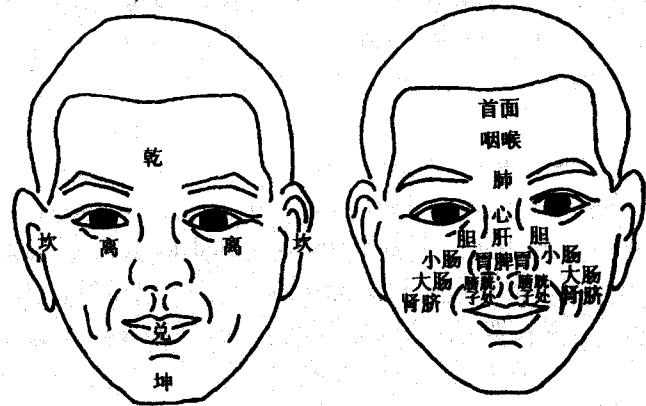


Figure 15-1 The Internal Organs and the Face

Notes to this figure:

乾 Qian 坎 Kan 离 Li 坤 Kun 首面 head and face 咽喉 throat 肺 lung
 心 heart 肝 liver 胆 gallbladder 小肠 small intestine 大肠 large intestine
 肾 kidney navel 脾 spleen 胃 stomach 膀胱子处 bladder & genitals

two eyebrows suggest badly-developed brain and low intelligence. The eyes are like the sun and moon of the body. Those eyes with vital energy and essence concealed, the black and white sharply contrasted, the pupils set and regular, and sight sharp, suggest good luck. The nose is like a mountain in the middle, belonging to the element of Tu (earth). It is the exterior of the face, and the body opening of the lungs. Round apex nasi, high and regular bridge, nostrils not turning up, and the whole nose looking full and ruddy, mean a long life span. The mouth is like the gate of a city. A mouth looking regular and the teeth not seen when the mouth closes, and bright red lips, mean good luck. The ears link up the brain and the heart. They gather information for the heart and act as the body opening of the kidneys. If the auricle is big, thick, bright and

ruddy, and the earlobes are plump and hang down like two pearls, it means a long life span. Having bushy and black and long eyebrows, the ends of which look full means good luck. As in *Shen Xiang Quan Pian* (《神相全篇》), "Yin tang, at the midpoint between the eyebrows, should look purple and plump, the eyebrows spread smoothly out," and *Ren Mian Zong Lun* (《人面总论》) also states this point, "Yin tang and the central part of the forehead with full Qi and bright-looking mean good luck." Ren zhong, if it looks wide and long and bright, means a long-life span. All of these points can be referred to in inferring one's life and death. (See Figure 15-1.)

I. Reading the skull and the face

The shapes of the skull and the face are divided into four groups: round crown and elliptic face, round crown and round face, round crown and square face, and round crown and pointed face. One's temperament can be foretold according to the shapes. For instance, those with a round crown and round face usually are straight forward and good-natured, diligent and conscientious, and are men of action; those with a round crown and elliptic face are active and clever and are talkative; those with a round crown and square face are steady, frank, and self-restraint; those with a round crown and pointed face are shrewd and deep by nature.

There are a lot of accounts in ancient China about inferring one's life and death as well as temperament according to the shapes of the skull and the face. In the *Emperor's Canon of Medicine*, it is held that a man with a small head and a long face and bluish discoloration of the complexion is a man of Wood, who is gifted and capable, over-suspicious, over-anxious, lacking strength, active in spring and summer, and inactive in autumn and winter. A man with a pointed face and ruddy complexion is a man of Fire, who is ener-

getic, lively, quick in mind, impatient, and will not live long, and will have a sudden death. A man with a big head, a round face and yellow discoloration of the complexion is a man of Earth, who is steady, honest, sincere, diligent and conscientious. He always does solid work. A man with a square face and white complexion is a man of Metal, who is introverted, shrewd and calm. He could easily be a good official, active in autumn and winter, inactive in spring and summer. A man with a rough face, a small head and dark complexion is a man of Water, who tends to conceal rather than reveal, has a gloomy disposition, and is active in autumn and winter, inactive in spring and summer. (*Spiritual Pivot: Yin Yang Twenty-five Kinds of Persons* (《灵枢: 阴阳二十五人》) Sages of the past offered many brilliant expositions about reading the shapes of the skull and the face: the head is the honorable part of the body, the core of the bones of the body, and the confluence of all the Yang meridians. The five parts that represent the Five Elements, are high and full, symbolizing the noble sky. The forehead bulges high and thick, the hairline looks plump and the bones are high, this is an appearance of good luck and long life. The following is also for reference, "A man with a strong appearance, his crown is round and thick, the abdomen and back are full, his forehead is smooth and square, his lips are red and teeth are white, his ears are round like wheels, his nose is straight like a gallbladder, and the white and black in his eyes are clear. ... The bridge of the nose should be regular and straight, Yin tang (located between the eyebrows) is smooth, the radix nasi should join to the Yin tang, the bridge of the nose should bulge high, the apex nasi be round and full, and like a hung gallbladder or an evenly cut bamboo, of which the color should be bright yellow; the mouth should be square and wide, the lips

red." (*Ma Yi Xian Sheng Ren Xiang Pian* 《麻衣先生人相篇》 by Lu Yun in the Ming Dynasty)

It is reported that, "A German named Gull and his assistant Spool put forward and developed the theory that: every 'spirit and ability' of a man is strictly located in parts on the cerebral cortex. The conditions of the development of these parts will be reflected on the surface of the skull. So Gull, foolishly divided the skull into over 30 parts, such as 'intelligence, greediness, kindness, hope, and so on', and thus formed the well-known Skull Appearance System." (*The Dialectical Realization of the Function of the Cerebral Cortex* by Qin Chao, *Medicine and Physiology*, January 16, 1985) Although the relationship between morality and skull appearance is not like Gull's idea, which does suggest the value of the science of skull appearance, which can at least reflect the development of the brain.

II. Reading the Complexion

The complexion is the outer reflection of Qi and blood (vital energy) of the internal organs. The vital essence and energy of the body, transmitted by the Qi and blood in the meridian system, flourish outside the body, just as "The blood has its manifestation in the complexion, the Qi has its manifestation in the luster." It is thus clear that the Qi and blood inside and outside the human body are linked, and through reading the complexion we can infer the condition of the vital essence and energy of the internal organs, just as it is said in *Wang Zhen Zun Jing* (《望诊尊经》), "The five colors of the complexion correspond to the five Zang organs, like roots and branches and leaves." The face is the center of the channels and collateral, "the twelve channels and 365 collaterals of the human body, of which the blood and Qi converge in the face and empty into various orifices ... body fluid fumes and steams in the

face." Therefore, the face can reflect the condition of the vital essence and energy of the human body.

A doctor of TCM, when practising physiognomy, lays great stress on reading the complexion, which is the reflection of the life-activities of the organism as well as the external symbol of the condition of the Qi and blood of the internal organs. Through the gloom, brightness, revealing, and concealing of the complexion, one can infer future smoothness, adversity, good luck, and bad luck. The complexion can promptly reflect coldness and heat, deficiency and excessiveness of diseases as well as the rise and fall, life and death of the vital essence and energy. In clinical practice, a gloomy complexion suggests that the vital essence and energy of the internal organs can not flourish outside — the deficiency of the internal organs is reflected externally in the complexion, so from the changes of the complexion we can observe the changes in the body. For instance, it says in *Plain Questions: Ci Re* (《素问: 刺热》), "For a patient with heat in the liver, his left bucca turns red first; for a patient with heat in the heart, his forehead turns red first; as for a patient with heat in the spleen, his nose turns red first; a patient with heat in the lungs will have see right bucca turn red first; a patient with heat in the kidneys, will see his lower cheeks turn red first." While reading the complexion, a doctor of TCM lays great stress on reading the vitality of the complexion. Complexion with vitality looks bright and smooth, containing the vitality without revealing it, as it says in *Plain Questions: Five Zang* (《素问: 五脏生成》), "(The color of the complexion,) bluish like the feather of a kingfisher, red like the color of a cock-comb, yellow like the color of the abdomen of a crab, white like the color of the fat of a pig, and dark like the feather of a crow symbolize vitality." These colors symbolize

long life and good luck. Complexion without vitality, looking gloomy, thin and pallid, and thoroughly revealed, symbolizes early death and bad luck, as it says in *Plain Questions: Mai Yao Jing Wei Lun* (《素问: 脉要经纬论》), "As for the color of the complexion, red should look like cinnabar covered with white silk, but not an ochre; white should look like the feather of a goose, but not salt." The gloomy color thoroughly revealed is called visceral exhaustion complexion. According to the *Emperor's Canon of Medicine*, the visceral exhaustion complexion of the liver is "bluish like the color of withered grass"; that of the spleen is "yellow like the color of a bitter orange not yet ripe"; that of the heart is "red like the color of congealed blood"; that of the kidneys is "dark like the color of coal". Visceral exhaustion complexion suggests the exhaustion of the vital essence and energy of the internal organs. In clinical practice, visceral exhaustion complexion is always gloomy and suggests serious diseases, so it is also called the complexion of death. If a patient who has lain in bed for a long time suddenly bears a strange complexion and looks delicate and charming as if he has been made up with the appearance of the refined nutritious substances, it is actually the last strive of the dying, and this complexion, called "making-up complexion", is an ill omen of the diseases. So in *Plain Questions: Mai Yao Jing Wei Lun* (《素问: 脉要经纬论》), "The visceral exhaustion complexion of all the five Zang organs means imminent death." This is worth note.

In addition to foretelling life and death, good luck and bad luck, reading the complexion can be used as a reference in the classification of temperaments in TCM, that is, a certain complexion symbolizes a certain temperament. For instance, those with a ruddy complexion are mostly men of Fire, those with a bluish complexion

are mostly men of Wood, those with a yellowish complexion are mostly men of Earth, those with a dark complexion are mostly men of Water, and those with a white complexion are mostly men of Metal. This is also stated in *Spiritual Pivot: Yin Yang Twenty-five Kinds of Persons* and it can be seen that physiognomy in TCM is rich and varied, and has its own distinctive features.

III. Reading the eyebrows

The eyebrows indicate the kidneys, and thus are the external sign of the kidneys. The lungs influence the skin and hair, so the eyebrows are signs of both the kidneys and the lungs, at the same time reflecting the rise and fall of Qi and blood. Therefore, the eyebrows are important signs that reveal deficiency of the kidneys and suggest aging. From the thickness, length, color and luster of eyebrows, and the distance between the eyebrows, we can infer one's constitution and disposition. For instance, a man with bushy eyebrows is usually energetic and has a strong constitution; a man with sparse eyebrows is usually not so energetic and has a comparatively weak constitution; a man with bushy and short eyebrows is usually impatient and tends to get angry, and is often suddenly caught in a severe disease; a man with long and thin eyebrows is usually docile and is slow in reaction; a man with eyebrows that point down: "\/" is usually fierce and tough; a man with eyebrows that point up "/\" is usually timid and weak-willed; a man with eyebrows shaped like brooms is usually cunning; a man with eyebrows between which the distance is comparatively long is usually broad-minded; a man with eyebrows between which the distance is comparatively short is usually narrow-minded.

IV. Reading the eyes

The eyes are like windows to the heart and external mirrors of

the internal organs. "The Father of Western Medicine" Hippocrates said, "The look of the eyes indicates the state of the body." This stresses the importance of the eyes in the human body. The eyes are the important information center of the human body and have various links with the internal organs, as it says in *Spiritual Pivot: Xie Qi Zang Fu Bing Xing* (《灵枢：邪气脏腑病形》), "Within the twelve channels and 365 collaterals of the human body, of which all the blood and Qi converge in the face and empty into various orifices, the vital Qi pours into the eyes so that the eyes can see things." *Spiritual Pivot: Questioning* (《灵枢：口问》) says, "The eyes are a place where many meridians converge ..." this also suggests the eyes are closely related to the internal organs, and so in *Spiritual Pivot: Wu Long Jin Ye Bie* (《灵枢：五癯津液别》), it says, "the eyes reflect the conditions of the vital organs of the human body."

Reading the eyes mainly refers to reading the expression in the eyes. The expression is linked with the heart and is reflected in the eyes, which express one's feelings. As Ikhard Hayes of Chicago University has said, "From the position of anatomy, the eyes are the extension of the brain." Expression in the eyes can reflect one's temperament. For instance, those who like looking around rapidly and glow with health and radiating vigor are usually men of Fire; those who have bright piercing eyes and look calm and relaxed are usually men of Metal; those who glance right and left and look healthy and vigorous are usually men of Wood; those who look around slowly and do not look sideways are usually men of Earth; those who have deep eyesight and look absorbed are usually men of Water.

In addition, those with eyes the corners of which hang upward

are usually brave, those with eyes which always open wide and look like the eyes of a tiger are usually fierce and tough, those with triangle-shaped eyes are usually treacherous, those with long and thin eyes are usually gentle and agreeable, those with small and round eyes are usually intelligent.

In addition, according to the Eight Trigrams of *Book of Changes*, the six Fu organs are combined with the eight regions of the eyes to observe the condition of the internal organs in TCM. This has certain distinctive features. The eight regions of the eye belong separately to the six Fu organs and the pericardium and the Mingmen, and are called the regions of water, wind, heaven, earth, fire, thunder, marsh, and mountain. The eight regions of the eyes are combined with the Eight Trigrams: region of water, also called region of body fluid, refers to the pupil of the eye, corresponding to Kan ☵, and is related to the bladder; region of wind, also called region of nourishing and transformation, refers to the pupil, corresponding to Xun ☴, and is related to the gallbladder; region of heaven, also called region of transmission, refers to the white of the eye, corresponding to Qian ☰, and is related to the large intestine; region of earth, also called region of diet, refers to the upper and lower eyelids, corresponding to Kun ☷, and is related to the stomach; region of fire, also called region of Bao Yang, refers to the inner canthus, corresponding to Li ☲, and is related to the small intestine; region of thunder, also called region of gate and source, refers to the inner canthus, corresponding to Zhen ☳, is related to the Mingmen; region of marsh, also called region of peace, refers to the outer canthus, corresponding to Dui ☱, and is related to the triple energizer; region of mountain, also called region of Hui yin, refers to Wai Jie (外眦) corresponding to Gen ☶, and

is related to the collaterals of the uterus. (Figure 12-3, 12-4)

V. Reading the nose

The nose is at the center of the face and is important in diagnosis through facial observation. As it says in *Spiritual Pivot: Five Colors* (《灵枢: 五色》), "The changes of the five colors take the nose as the criterion," the nose is the criterion of facial observation.

The complexion may be decided by the nose, and the significance of nasal inspection lies in that the nose is a place where the vital essence and energy of the Five Zang organs gather, the apex nasi corresponding to the spleen and the stomach, the radix nasi to the heart and the lungs, the area around the nose to the six Fu organs, and the area below the nose to the reproductive organs. Therefore, the nose is important in reflecting the changes of the vital essence and energy of the internal organs. The nose, mouth, and umbilicus are all placed in the middle and correspond to each other, so they are important in spleen diagnosis. The nose can foretell one's life and death to a certain degree. For instance, if the bridge is high and regular, the nose looks full and ruddy, the apex nasi is round, and the nostrils do not turn up, it means a long life span; while if the nose is flat and irregular, the apex nasi is not round, the nostrils turn up, and the nose looks thin and gloomy, it means an early death.

In addition, the shape of the nose has something to do with one's temperament. For instance, a nose looking like that of a tiger means bravery, that of a dragon means good fortune, and that of a long gallbladder means outstanding ability; an aquiline nose means nobility, a nose looking like that of a monkey means curiosity that an ox means tolerance, a pointed apex nasi means resourcefulness, a high bridge means great ambition, a fat nose means lack of

ambition, a round apex nasi means frankness and honesty. These can provide references for temperament researchers.

VI. Reading the lips

The lips are like a mirror to the muscles of human body and area fundamental part of the muscles. The spleen indicate the condition of the muscles, and the lips are the outer aperture of the spleen. So through reading the lips, we can infer the condition of the muscles. If the lips look haggard and gloomy, they indicate a deficiency of fluids in the muscles; if the lips look ruddy and bright, they indicate a sufficiency of Qi and blood in the muscles; if the lips turn outward, they indicate a necrosis of the muscles. So in *Spiritual Pivot: Jing Mai* (《灵枢: 经脉》), it says, "If the vital energy of the spleen Meridian is exhausted, the meridians cannot nourish the muscles, therefore, the muscles will become loose. Since the lips and the tongue are the fundamental parts of the muscles, the tongue will atrophy while the philtrum swells, and consequently the lips will turn outward, which indicates the necrosis of the muscles." It is also held in modern medicine that the lips, with abundant blood capillaries, can sensitively reflect diseases in the internal organs. The area around the lips is called the Sibai of the lips and is very sensitive in reflecting the rise and fall of Qi and blood in the internal organs. In *Plain Questions: Liu Jie Zang Xiang Lun* (《素问: 六节脏象论》) says, "The spleen... is indicated in the area around the lips." In clinical practice, if the area around the lips looks gray, it indicates a deficiency of Yang (vital function) in the heart; if that area looks bluish, it indicates poisoning; if that area looks pale, it indicates a deficiency of the Qi and blood. The lips, as the wall of the mouth and the gateway of language, should be plump, smooth-skinned, ruddy, fresh and regular. The shape of the lips can reflect one's

temperament. For instance, lips looking like a "四" in Chinese character mean ability, lips looking like that of a tiger mean a fierce disposition, lips looking like that of an ox mean honesty and kindness, that of a monkey mean suspicion; thick lips mean frankness and honesty, thin lips mean intelligence.

VI. Reading the philtrum

As the most important part in facial inspection, the philtrum, where the channels and collaterals crisscross and the Qi and blood converge, can reflect the condition of the kidneys, the Mingmen, and the Yang Qi. The appearance and complexion of the philtrum can determine one's life and death and hint the rise and fall of the vital essence and energy. In *Spiritual Pivot: Five Colors* (《灵枢: 五色》) it says that "the area below the nose corresponds to the bladder and the reproductive organs". This points out the relationship between the philtrum and the urinary and reproductive systems. But the philtrum actually has a more profound relationship with the human body. In clinical observations, the author has found out that the philtrum is closely related to the life center and the internal system. For instance, a patient with exhaustion of the sex-stimulating essence and deficiency of Thoroughfare and Conception Vessels, has a philtrum that looks dark brown or bears flat dark spots; for a patient with deficiency of adrenal cortex, such as patients of Addison's Syndrome or Xihan's Syndrome, the philtrum usually looks faintly dark or bears flat dark spots. In particular, patients with exhaustion of the kidney Qi will have philtrums looking dark. Therefore, darkness in the philtrum often indicates decline of the fire from the vital essence and exhaustion of the kidney Qi. In ancient documents, we read "dark philtrum means death". So the philtrum is often looked at as an important acupuncture point in revitalizing the center.

Since the philtrum can reflect the condition of the fire from the vital gate and the kidney Qi, from the complexion and appearance of it, we can infer one's life or death. A bright and ruddy philtrum indicates the sufficiency of the fire from the vital gate and the kidney Qi, and therefore means a long life span; while a gloomy and haggard philtrum indicates the decline of the fire from the vital gate and the exhaustion of the kidney Qi, therefore meaning an early death.

Ⅷ. Reading the ears

The ears are an important information center of the human body and were called "hearing organs" by ancient people. They are also an external mirror of the internal organs of the human body. As stated in *Spiritual Pivot: Questioning* (《灵枢: 口问》), "The ears are places where the channels converge." Most information on the human body is gathered here, and every organ or part corresponds to a point in the ear. Hence, the ears are like a screen of the body.

Since ancient times, there have been accounts about foretelling one's life and death according to the appearance of the ears. The ears are the specific openings of the kidneys. The kidney Qi reaches the ear and determines life and death. So the ears have distinctive value in inferring one's life and death. Generally speaking, if the auricle is big, thick, bright and ruddy, and the earlobe is plump and hangs down, it means long life; if the auricle is small and thin and gloomy, the earlobe is small and wrinkled, and does not hang down, it means early death. In *Spiritual Pivot: Ben Zang* (《灵枢: 本藏》), we see "If the ears look solid, the kidneys are strong; if the ears look thin and not solid, the kidneys are weak." Bei Runpu reported that in his ear diagnosis of fifty old men over the age of eighty, he found that all those long-living men have auricles and earlobes. According to his survey, all have auricles over 7cm long

(the length of the auricle of an ordinary man is 5-8cm), some even reach 8.5cm; and all had earlobes over 1.8cm long (the ordinary length is 1-2.5cm), some even reach 3.2cm. Some of these elderly men even felt their auricles and earlobes had tended to grow after the age of sixty. It can be obviously seen that auricles and earlobes have certain relationship with men's life and death. (The Clinical Application of the Inspection of Auricles by Bei Runpu, *A Magazine on TCM*, Liao Ning, Dec. 15, 1983)

In *Spiritual Pivot*, there are accounts of the relationship between the appearance of the ears and the rise and fall of the Qi and blood. For instance, in *Yin Yang Twenty-five Kinds of People* "If the vital energy is exuberant, one's eyebrows usually are long and good-looking, and one's ears are ruddy; if the vital energy is deficient, one's ears usually look haggard and gloomy." The condition of the vital energy directly influences one's life and death, so the appearance of the ears has value in forecasting life and death.

In addition, the shape and complexion of the ear have referential value in inferring one's temperament. For instance, if one's ears look round and rosy, one tends to be active and optimistic; if one's ears look big and yellow and hang down, one tends to be phlegmatic and patient; if one's ears look pointed and thin and dark, one tends to be shrewd and resourceful; if one's ears look long and gray, one tends to be irritable and suspicious; if one's ears look big and white, one tends to be steady and self-disciplined.

Ⅷ. Reading the hair

The hair is the crown of the head and is the outer manifestation of the brain, so the hair has significance in physiognomy. The hair has the closest relationship with the kidneys and the brain, with the essence of the kidney Qi directly influencing the hair, as it says in

Plain Questions: Liu Jie Zang Xiang Lun (《素问：六节脏象论》), "The kidneys... are where the vital energy and essence are stored, and they have manifestations in the hair of the head." In *Plain Questions: Shang Gu Tian Zhen Lun* (《素问：上古天真论》) "A seven-year-old girl's kidney Qi rises, her permanent teeth grow, and her hair looks thick... . A forty-year-old man's kidney Qi falls, his hair begins to fall out, and his teeth look gloomy; when he reaches the age of sixty-four, both his hair and teeth are lost." This states that the kidneys are manifested in the hair. Someone of later generations thought "the hair is the odds and ends of blood", so blood is the fundamental, as hair is the incidental. From the appearance of the hair, we can infer the rise and fall of the kidney Qi as well as the deficiency and sufficiency of both Qi and blood.

The hair contains many kinds of trace elements, so it can foretell diseases like premature senility, diabetes, consumptive disease, apoplexy, dementia, epilepsy, cancer, extravagated blood, obesity, gout, and endocrinopathy. In addition, reading the hair can also infer one's life and death, for the kidney is manifested in the hair and the hair symbolizes the rise and fall of kidney Qi and can reflect one's life and death. Black, bright and thick hair symbolizes long life; yellow, withered, and thin hair symbolizes an early death. One has about 100,000 hairs, which grow 0.33mm each day and have lives of 3~5 years. Too few hairs, trichomadesis or the hair turning white early are signs of premature senility.

The hair has a certain relationship with temperament. For instance, a person with black and stiff hair is short-tempered and indomitable; one with slender and soft hair usually is gentle and agreeable; one with thick hair, which erects easily, usually is fierce and tough; one with yellow and curly hair usually is unsteady. In addi-

tion, the hair is an important basis for blood group identification in medical jurisprudence. Researchers recently found age rings in the hair; so hair can be used as proof of age.

Section 2 Forecasting According to the Appearance of Hands

Reading the appearance of the hand is an important part of divination and physiognomy. Originated in China and ancient Greece, it can infer diseases, temperament, life and death, mainly according to the form and lines of the hands.

I. The forecasting value of the form of the hand

Inferring temperament depends mainly on reading the form of the hand. A big palm and long fingers symbolize open-mindedness, courage and high aspirations; a narrow palm and short fingers symbolize narrow-mindedness, timidness and low aspirations; a thick hand with a big center of the palm mean honesty and kindness and tolerance; a thin hand with a narrow center of the palm mean jealousy and unkindness. Big thick hands are less skillful than small and exquisite hands in meticulous work. If a person's thumb and index finger can stretch apart beyond a right angle, he is probably an open-minded and independent man; if under 45°, he is probably a narrow-minded and dependent man. A person with long little fingers usually has a glib tongue and is efficient. Slender and long hands symbolize gentleness, while thick and short hands symbolize firmness. If the lines of the hand look clear, sleek, and neat, and have few branches, it means long life; if the lines look short, gloomy, and unclear and have many branches, it means an early

death. A person with thin, long and winding lines on the hand is usually timid, weak-willed and kind; one with thick, short and straight lines is usually fierce, tough and short-tempered. A researcher has found that among 400 murderers examined each had a similar crossline of the hand (*Fujian Youth*, Oct, 1986). Of course, murder is a problem of morality, not genetics, but this can at least suggest that the lines of the hand have some relationship with temperament.

II. Forecasting value of the lines of the hand

1) the forecasting value of the lines of the palm

The lines of the hand are like the grain of wood. Woods with beautiful grain are wonderful timbers, and hands with beautiful lines reflect precious nature. Thin and deep lines mean good luck; thick and shallow lines mean bad luck; lines with many branches mean unsteady temperament; and having many horizontal lines means stupidity.

The exploration of the lines of the hand has aroused great interest among scholars at home and abroad, and there are many reports about it. For instance, it says in *Scientific and Technological World of Hong Kong*, "The length and thickness of the crooking line of the thumb are related to one's physique." If this line is long and thick, it means good health; if this line is short and thin, it means delicate health. If this crooking line of the fingers is too long, one is susceptible to diseases of the intestine and stomach; as to a patient with heart diseases, this line usually branches out or twists and winds. If the crooking line of the palm is thin and vague, it is related to the cranial nerve. If a person's line of health and strength is deep and thick and long, he is in good health; if it is shallow and short and vague or even cannot be seen, he is in delicate health. The

Qiu is where nerve endings gather and will look unusual when one is ill. If one suffers from diseases of the kidney, transverse lines or swelling will appear below his Yu Ji; when one suffers from diseases of the heart and kidney and dropsy, the transverse lines will increase on the palm. If the line of health is vague or breaks, it may be a sign of the early stages of hepatitis. The darkening of the area below the Yu Ji may suggest lumbago due to wind-dampness; while transverse grooves on the nails may be a sign of tuberculosis, thin nails may suggest that the respiratory system is not strong (*Line of the Hand Can Infer One's Health*, translated by Jin Quan, *Recovery*, Vol. 1, 1986, Shanghai). Some experts believe duodenal ulcer sufferers have bows and curves in the lines of their hands; Tongguan hand, or a over-wide triangle at the bottom of the palm, often indicates congenital stupidity. In brief, vague lines with many branches mean bad luck; deep, long, and bright lines mean good luck, and short, shallow, gloomy lines mean bad luck. In addition, three lines joining into one line often indicate congenital stupidity, and is called the "gorilla line" (Tongguan hand). See figures 15-2, 15-3, 15-4.

2) Forecasting value of the fingerprints

Fingerprints are thin lines of the hands and are permanent lines. Fingerprints take shape during the embryonic stage. In medical jurisprudence, they are used as irrefutable proof of identity; among people, they are used as symbols of credit; in medicine, fingerprints and lines of the hand are called dermatoglyphic and are very valuable in genetics. (See figures 15-5, 15-6, 15-7, 15-8). Most Chinese people and other mongoloids have whorls, while loops are more common among Caucasoids. The changes of the shapes and total number of the lines of fingerprints have diagnostic significance in the distortion of sex-chromosomes and autosome. The former is

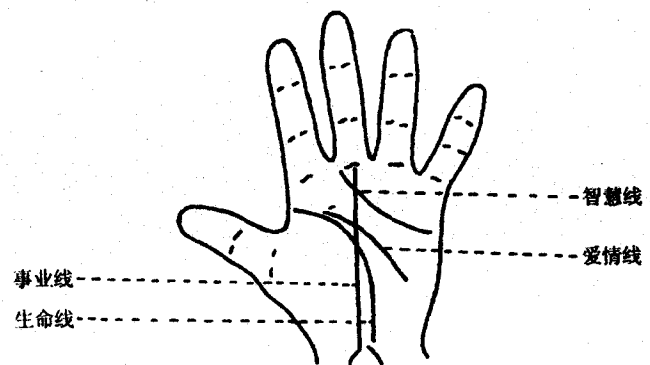
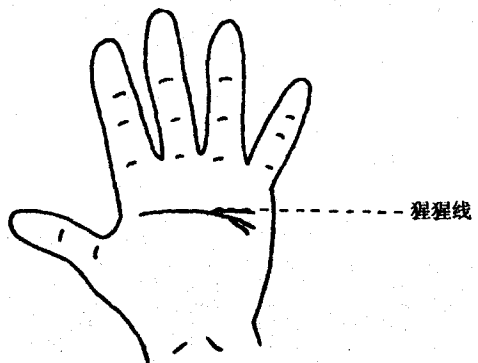


Figure 15-2 Lines of the Hand

Notes to this figure:

- 事业线 Line of work 生命线 Line of life
- 智慧线 Line of wisdom 爱情线 Line of love



猩猩线 "gorilla" line

Figure 15-3 Lines of a Tongguan Hand

shown in the changes of the total number of the lines of fingerprints, while the latter in changes of the shapes of fingerprints.

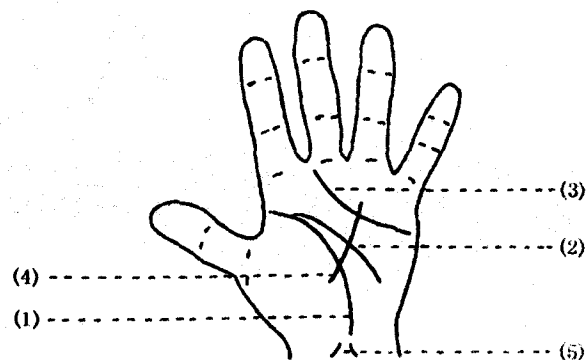


Figure 15-4 Names of the Lines of the Hands

- (1) The Crooking Line of the Thumb
- (2) The Crooking Line of the Palm
- (3) The Crooking Line of the Fingers
- (4) The Line of Health & Strength
- (5) The Triangle at the Bottom of the Palm

Changes in these two aspects have diagnostic value in certain hereditary diseases.

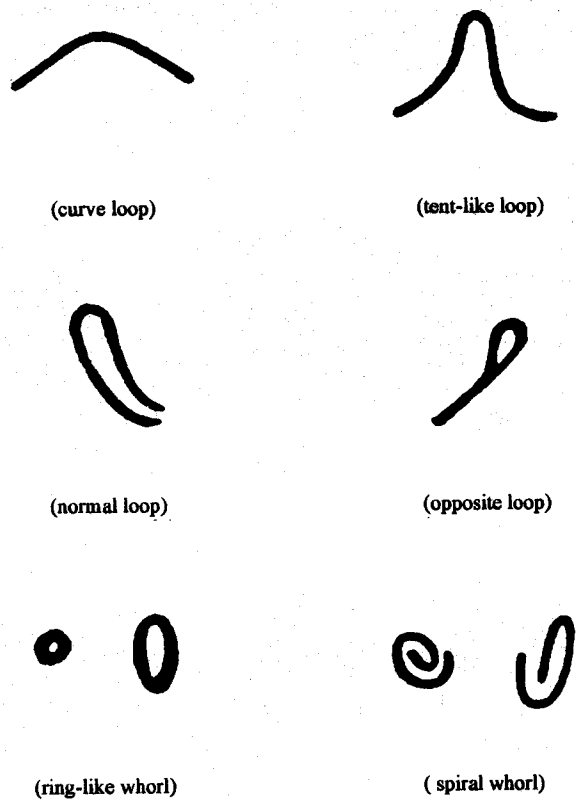


Figure 15-5 Fingerprint Figures

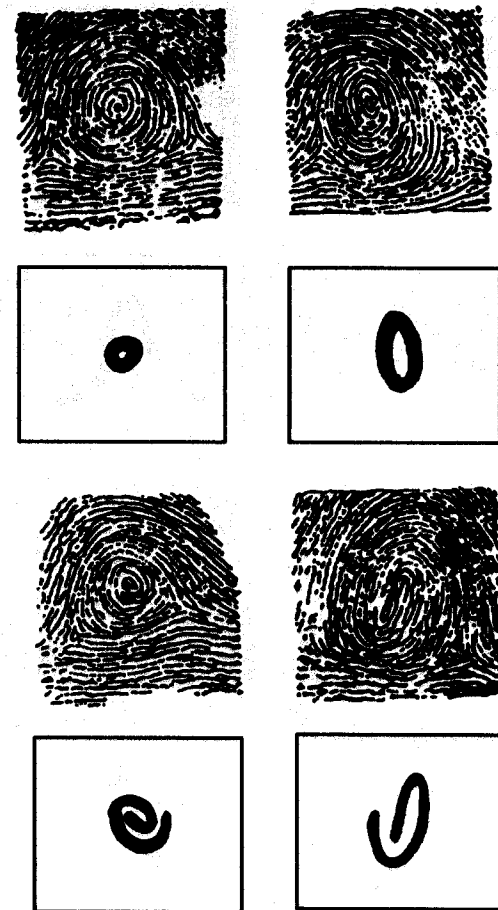


Figure 15-6 Fingerprints (1) (ring-like & spiral whorls)

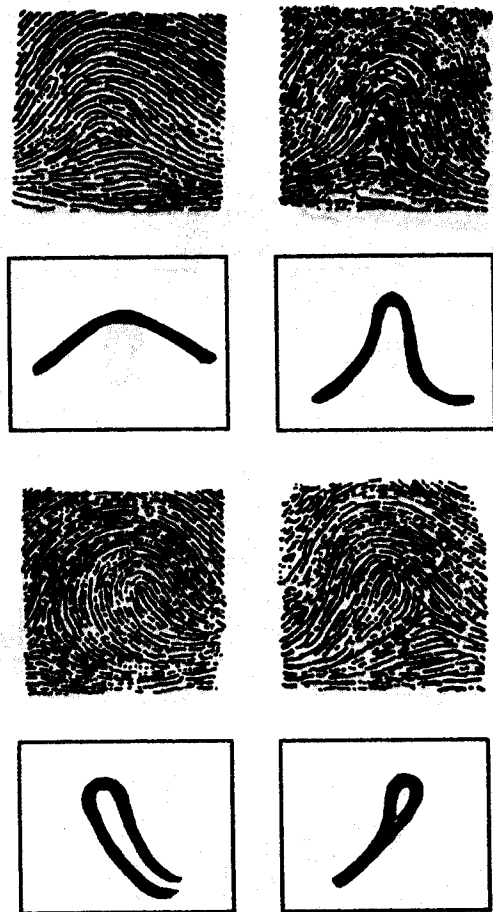


Figure 15-7 Fingerprints (2) (curve, tent-like normal and opposite loops)

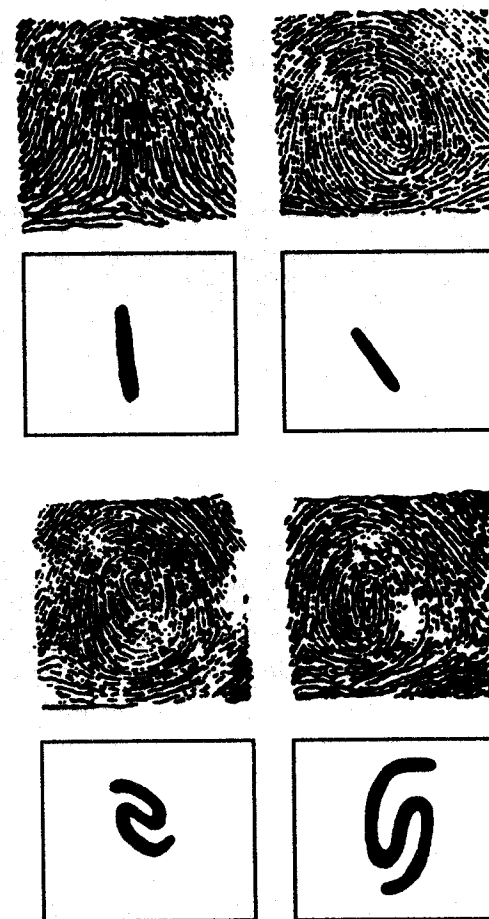


Figure 15-8 Fingerprints (3) (winding loops)

Section 3 The Forecasting Value of Dreams

Dreams are the comprehensive reflection of physiology and psychology. Modern medicine contends that dreams are excited activities under the background of the general inhibition of the brain and are the continuity on the part of the higher nervous activities of the brain. Dreams are divided into two groups: physiological dreams and pathological dreams. Physiological dreams include dreams of surreal imagination, dreams of reappearance of past scenes and dreams of inspiration, which are reappearances of impressions on the cerebral cortex made during waking hours. Psychological senses and external stimulus can also be reflected in physiological dreams. Generally, physiological dreams are harmless and can help to achieve psychological equilibrium, psychological dredging, and psychological forecasting. Most causes of pathological dreams are internal. These dreams are often caused by the information of the insidious focus in the body. So most pathological dreams are nightmares. On the material base of reflecting diseases, dreams can give us more information with which to foretell diseases. TCM science offers many such accounts, which have clinical value in foretelling diseases.

In the oldest book on pathogenesis, *Treatise on the Etiology and Symptomology of Diseases* (《诸病源候论》), it is recorded that "A consumptive man, whose blood and Qi are weak and whose internal organs are insufficient, is susceptible to pathogenic factors. The pathogenic factors gather in the body from outside, stay at no fixed position, but wreak wanton devastation in the internal organs

and rise with the soul, so the man can not sleep soundly, and often dreams." This record points out the relationship between dreams and insufficiency of the internal organs. *The Emperor's Canon of Medicine* also lays great stress on the fact that dreams can foretell the conditions of the internal organs. For instance, in *Plain Questions: Fang Sheng Shuai Lun* (《素问：方盛衰论》), it says that "the deficiency of the kidney Qi may make one dream of overturned boats and drowning men; the deficiency of the liver Qi may make one dream of exuberant grass and flowers, or that he himself lies at the foot of a big tree and is afraid to rise; the deficiency of the heart Qi may make one dream of fire fighting and thunders and lightning, or big fires burning fiercely". In *Plain Questions: Mai Yao Jing Lun* (《素问：脉要精微论》), it says that "exuberance of Yin makes one dream of wading across a big river in a great panic; exuberance of Yang makes one dream of a big fire burning violently; exuberance of both Yang Qi and Yin Qi makes one dream of mutual slaughter and hurt". In *Spiritual Pivot: Yin Xie Fa Meng* (《灵枢·淫邪发梦》), it adds that "if the upper part is exuberant, one may dream of flying up; if the lower part is exuberant, one may dream of falling down." "If the pathogenic factors harm the heart, one may dream of mounds and hills and smoke and fire; if the pathogenic factors harm the lung, one may dream of flying up..." This is because the internal organs are insufficient, and are easily harmed by external pathogenic factors, and consequently, one is distressed and often dreams. According to the relationship between the seven emotions and the Five Zang Organs (the heart, lungs, liver, spleen, and kidneys), dreaming of anger foretells the exuberance of the liver Qi, dreaming of fear foretells deficiency of the kidney Qi, dreaming of weeping foretells deficiency of the liver Qi, dreaming of

laughter foretells deficiency of the heart Qi, dreaming of singing foretells deficiency of the spleen Qi. The above mentioned dreams are all the result of internal causes. The sudden increase of those dreams has some forecasting value to the potential focus of infection. Therefore, forecasting with dreams has its inner background. At present, forecasting with dreams is in wide clinical practice. For instance, for those who are over mid-age and have corpulent carriages, frequent nightmares, thrilling dreams, or dreams of being pressed may be signs of coronary heart disease or arteriosclerosis; dreams of weeping may be signs of diseases of the nervous system; dreams of eating may be signs of diseases of the digestive system. Dreams have some significance in disease forecasting, and are worthy of further exploration. The phenomena of foretelling human affairs and luck through dreams are found in many accounts at home and abroad, and is still a mystery waiting to be revealed.

(Translated by Zhao Chenwei)

Chapter Sixteen

Book of Changes and Chinese Qigong (Breathing Exercises)

Qian Xuesen, a well-known Chinese scientist, once said, "Chinese Qigong is a window open to reveal the mystery of human body."

The extraordinary power of Qigong has made a breakthrough in the research on the human body. Qigong is becoming increasingly popular. It will surely make even greater contributions to the development of the science of the human body.

Section 1 The Theory of Chinese Qigong Originating in *Book of Changes*

China is the birth place of Qigong. The Chinese Qigong theory originates in *Book of Changes*, which abounds in Qigong theories and greatly influenced Qigong's formation and development. *The Harmony in Book of Changes* (《周易参同契》) and Taoist Qigong also draw some theories from *Book of Changes*.

Qigong is a system of exercises combining meditation with deep breathing. Qigong of the Confucianist, Taoist and Buddhist schools

have their own characteristics, including exhaling and inhaling, conducting, making pills of immortality and sitting in meditation. The process is to regulate breathing and posture under the control of the conscious mind, so as to improve the circulation of vital energy and to keep the internal organs free from any disease. Chinese Qigong is an important method of regulating the function of vital energy and the state of blood. It can also keep the balance of Yin and Yang.

In China, Qigong served to cure and prevent diseases thousands of years ago. It is recorded in the *Emperor's Canon of Medicine* that the mind can prevent disease. *Plain Questions: Acupuncture Methods* says, "Before we enter the room, we can think that Green Qi comes from the liver, which will change into Qi of forest guarding the East, White Qi rises from the lungs, which changes into Qi of soldiers and arms guarding the West. Heat sends out Red Qi, which changes into Qi of fire guarding the South, the kidneys send out Black Qi, which changes into Qi of water guarding the North, the spleen sends out Yellow Qi which changes into Qi of earth guarding the Center. Overhead there is also some Qi like the big Dipper. All these kinds of Qi safeguard our body and protect us against diseases."

Doing Qigong exercises can tap the potential of the human body, both in intelligence and in physical strength. This is called potential-tapping or wisdom-tapping. It is recorded that Qigong will develop the human body's visual potential and recover the lost eyesight of Tianmu acupoint. (Tianmu acupoint is located in the upper part of the forehead. It is probably a degenerated visual organ). In recent years, Qigong has been developing rapidly. Wang Jialin, a famous Chinese scholar in the science of the human body, has advanced a new theory that the internal organs of the human body are

under the control of consciousness (i. e. under the condition of doing Qigong, the operation of consciousness will remarkably change the activities of the involuntary functions in the body).

In the *Emperor's Canon of Medicine*, the theories of combining Yin and Yang and exhaling and inhaling methods are put forward to keep the body in good health. This theory is also a key to Qigong. The book *Plain Questions: Acupuncture Method* says, "If a patient suffers from a kidney disease for a long time, he can face to the south during the period of 3a. m. to 5a. m., concentrate and free himself from any confusion, inhale seven times without exhaling. After doing this, he will produce saliva in his throat and feel great comfortable." In the book *Keeping Fit and Longevity* (《养性集要》) by Tao Jinghong (a famous physician 456-536), it is recorded that there is only one inhaling method, however there are as many as six exhaling methods, including, blowing, breathing out, sighing, slow-breathing, breathing out with the mouth open and a raspy breath. Different breathing methods will cause different effects. Blowing will get rid of chills; breathing out will dissipate heat; sighing will dispel melancholy; slow-breathing will create smooth breathing; breathing out with the mouth open will make inhaling smooth, and "a raspy breath" will help patients recover from fatigue. The six different breathing methods will be employed to regulate the breathing rhythm. *Selection and Explanation of Prescriptions* (《医方集解》) says, "The method to regulate breathing is to concentrate your mind on counting how many times you have exhaled and inhaled, from one to ten, from ten to a hundred, and you will not miscount times if you focus on exhaling and inhaling." The record shows the importance of exhaling and inhaling in Qigong.

On the one hand, Qigong attaches importance to the operation of energy, including the operation of the Big Cycle and the Small Cycle and Dantian energy operation as well. The Big Cycle operation aims at making the twelve channels circulate smoothly. The Small Cycle operation will link up Ren and Du channels. Deep breathing controlled by the diaphragm aims at the energy of the diaphragm going along the channels. On the other hand, Qigong stresses exercises such as "turning essence into energy, then turning energy into thought, and then turning thought into emptiness". The purpose of energy operation is to strengthen the internal movement, i. e., to practise the internal energy. Qigong masters have also developed information treatment. The patient will receive treatment by "sending energy" given by Qigong masters.

Furthermore, a Qigong master can consciously conform to the change of Yin and Yang and the movement of the sun and the moon. They try to be in agreement with the natural biological clock so as to keep fit.

Generally speaking, under the influence of *Book of Changes*, the *Emperor's Canon of Medicine* and *The Harmony in Book of Changes* (《周易参同契》), the theory of Chinese medical Qigong comes into being. It is based on the energy regulation theory, the inter-influence of Yin and Yang theory, and exhaling and inhaling theory. In addition, *Book of Changes* is also a guide to sexual Qigong. (See Chapter Twenty-four *Book of Changes* and Sexology)

I. The Changes and open theory in *Book of Changes* and conducting method

Book of Changes illustrates that the Confucian school is in favor of moving, while the Taoist school is in favor of calmness. Both of them come from *Book of Changes*. However, the two points, mov-

ing and calmness, are not mutually exclusive. They contain each other. *The Great Treatise on Yi* says, "Changes must be made if the circulation channel is blocked. Smoothness can be achieved after change. If the circulation of energy is smooth, then permanence can be achieved." Conducting Qigong is greatly influenced by the change and open theory. Conducting Qigong means the vital energy is conducted by exercising the arms and the legs to keep energy and blood circulating smoothly. As the Taoist school is in favor of quietness, conducting Qigong is characterized by slowness and gentleness. Another distinguishing feature is that the shape of movement is circular, due to the influence of the Taiji Map in *Book of Changes*. Conducting Qigong was very popular in the Western Han Dynasty. In 1973, a cultural relic containing conducting Qigong drawings was found in Ma Wang Dui, an ancient tomb of the Han Dynasty in Changsha, Hunan Province. *Lü's Spring and Autumn: Gu Luo* also recorded this, "dancing and waving to guide the circulation of Qi". In *Synopsis of the Golden Chamber* (《金匱要略》), *Zhang Zhongjing*, a famous doctor in ancient China, said, "If a patient's arms and legs feel tired, he can practice conducting Qigong and receive acupuncture treatment. Then the energy and blood will work well." *Lü's Spring and Autumn: Jin Shu* (《吕氏春秋: 尽数》) says that "running water is never stale and a door-hinge never gets worm-eaten". It also illustrates the importance of conducting Qigong.

In addition, *Book of Changes* also stresses quietness and closing. *Wen Yan* in *Kun Trigram of Yi* says, "It is most still, but is able to give every definite form." The theory of quietness and closing is quite important to the Taoist school and the Buddhist school, which are two major branches in Chinese Qigong. Sitting in medita-

tion of the Buddhist school brushes ideas out of mind. The purport of sitting in meditation is emptiness. The Taoist school does not hold that ideas must be separated from the body. Its purport lies on void.

II. The open-close theory in *Book of Changes* and exhaling-inhaling Qigong

The *Great Treatise on Yi* says, "The process of change consists of closing and opening." In the process of closing and opening, the energy can be breathed in and out. Exhaling-inhaling method takes an important place in all Qigong schools. Each Qigong school attaches great importance to it. In the book *Acupuncture Method* (*《刺法论》*), the remains of the *Emperor's Canon of Medicine*, exhaling and inhaling Qigong is recorded. The method of energy conducting is included in jade inscriptions — the unearthed artifacts of the Han Dynasty. It says, "The energy will store up after it sends out. With its storing up, the energy will extend. While it is extending, it will lower down. After lowering down, it will become fixed, then it will become firm, which will sprout after becoming firm, then it begins to grow. When it grows to a certain degree, it will decrease, then it will decrease to the heaven. Then the energy will be divided into two parts: Yin and Yang. So, those that comply with the energy law will prosper, those that resist the energy law will perish. *A Collection of Hundreds Masters' Work* (*《百子全书》*), *To a Travelling Man: Huang Ting Pian* (*《至游子: 黄帝篇》*) said, "Exhaling refers to breathing out the waste air. Inhaling refers to breathing in the fresh air." Exhaling and inhaling is an important process in Qigong. It will promote the movement of energy and it can also speed up the exchanging frequency of waste and fresh air. The term energy-swallowing is an important content in exhal-

ing-inhaling Qigong.

Shan Hai Jing (*《山海经》*) is a mythological book that reflects the natural and social science. It is also a comprehensive book, in which there are many records of Qigong. *Da Huang Northern Classic* (*《大荒北经》*) says, "In Wu Ji Min, Wu Gu lived on exhaling-inhaling Qigong and fish. Wu Gu clan pays much attention to the exhaling-inhaling Qigong. A god, with a manlike face and a snake-like body, never eats, sleeps and rests. Yet he is able to live on non-breathing Qigong." The tale shows the importance of exhaling-inhaling Qigong. Non-breathing belongs to the type of close-Qigong. The theory of close-Qigong is that man has started using the reserve system in the body so as to improve the ability of meeting an emergency under the condition of insufficient oxygen. Close-Qigong is an exercise that requires a higher ability and is difficult to achieve.

III. Time and space theory in *Book of Changes* and Qigong

1) In the respect of time theory

Book of Changes values man's activity in agreement with the universe. For example, *Zhuan* in *Feng Trigram of Yi* says, "The (interaction of) heaven and earth is now vigorous and abundant, now dull and scanty, growing and diminishing according to the seasons. How much more must it be so with the operation!" The *Great Treatise on Yi* says, "Of all things that furnish models and visible figures, there were none greater than heaven and earth; of things that change and extend an influence (on others), there were none greater than the four seasons." *Zhuan* in *Bo Trigram of Yi* says, "A gentleman values the process of decrease and increase, of fullness and decadence, as seen in the movement of the heavenly bodies." This became the theoretical origin of later Qigong. Qigong has also gained a good deal of enlightenment from fifty operations in

the *Emperor's Canon of Medicine*. The significance of the fifty operations is that the movement of energy and blood in the human body, the small universe, should correspond to the movement of the sun and the moon in the universe. No individual life exists in isolation. Each has a close relation with the movement of the sun and the moon. This has laid the theoretical basis of the Qigong biological clock. Each Chinese Qigong school is influenced by the correspondence between man and the changes of the universe. So each pays attention to the relationship between Qigong, time and place. The four seasons of the year are a typical example. In spring and early summer, the Yang energy begins to rise. At this time, Yang is active. So it is suitable to conduct Yang in places full of sunlight. In high summer, Yang is at its prime, so quiet Qigong should be done in shade to lower Yang. As *Qian Trigram of Yi* says, "We see its subject as the dragon exceeding the proper limits. There will be occasion for repentance." *Wen Yan* in *Qian Trigram of Yi* also says that in autumn and winter Yang becomes weak and Yin gradually becomes strong. So it is a good time for doing exhaling and inhaling Qigong. The correct method is to have deep inhaling and shallow exhaling. In severe winter, Yin is at its prime. So it is suitable to sit in meditation at home or in places with sunshine. In terms of a day and a night, the Yang energy begins to rise and the Yin energy begins to decline during the period of 4a. m. -6a. m. At this time, the large intestine and the lungs are active. It is a good time for doing out-door exercises and exhaling-inhaling Qigong in order that the lungs can exhale the stale air. At noon, the Yang energy is at its prime. The heart and the small intestine are active, blood circulates fast. So it is a good time for doing quiet Qigong. At dusk, the Yang energy is active, the kidneys admit the energy. Slow conducting

should be done in order to collect the Yang energy. At night, the Yin energy is at its prime, it is a suitable time to do quiet Qigong to help the Yang energy collect.

2) In the respect of space theory

The Eight Trigrams in *Book of Changes* pays great attention to direction. The Eight Trigrams consists of four directions and four corners. *Treatise of Remarks on the Trigrams of Yi* says, "Everything comes out of Zhen, which refers to the east. Xun refers to the southeast. Li refers to the south, it means clear, i. e., everything can be seen there. Kan refers to the north, it means water." *Treatise of Remarks on the Trigrams of Yi* also stresses the significance of "facing south". It says that the Saint can hear and see everything when facing south. The south is a precious direction from which one can gain virtue. Therefore Qigong in later ages adopts the practice of facing south and develops on the base of facing south. For example, in the morning, when the sun is rising, one will face the east to do Qigong. At dusk, one will turn the direction to the west to do Qigong. The adoption of direction also depends on the health of the five internal organs. For example, a person whose liver lacks energy will face the east to do Qigong; a person whose kidneys lack energy will face the north to do Qigong. A person will face the south if his heart lacks energy, and one will face the west if his lungs lack energy.

Section 2 *Book of Changes* and Taoist Qigong

The Taoist school arose during the Eastern Han Dynasty. The

theoretical system of the Taoist school has fully made advances to *Book of Changes*, which possesses the distinctive characters of femininity, quietness, gentleness and smoothness. The Taoist school aims at void, desirelessness and detachment.

Taoist Qigong has distinguishing features. It is a major branch of Chinese Qigong. It consists of the Wudang, E'mei, and Hua Mountain schools.

I. Taoist Qigong pays attention to concentration

Laozi and Zhuangzi are the representatives of Taoist Qigong, both of whom are well-known ancient Chinese thinkers and health-keepers. As Laozi says, "The mind will become calm if he has no any desires at all." *Moral Classic* (《道德经》) also says, "If one wants his mind to keep concentration and to stick to it, the final energy will be slender." *Zhuangzi: Ke Yi* (《庄子: 刻意》) says, "Concentration can be achieved by reposing, energy increasing, keeping and sticking to it." *Zhuangzi* also says, "The mind should abstain from any desires or wishes." It was recorded in *Laozi: Zai You* (《老子: 在宥》): "if one can take no notice of what he sees and what he learns and what he knows, he can keep his mind in good state and have a long life." *Tai Ping Jing* (《太平经》) says, "The method of keeping concentration is the cardinal principle for each god to follow." *Guanzi: Zi Xin* (《管子: 自心》) says, "Man can live for a long time if he knows how to keep mind concentration." Tian Shitao, the founder of the Taoist school, also valued concentration. Concentration means the mind is at peace and quiet. The apertures are kept and breath is regulated to keep concentration. The position of keeping an aperture is different from another. *Huang Ting Jing* (《黄庭经》), a treatise of the Taoist school, says, "Huang Ting aperture should be kept." There are three Huang Ting aper-

tures, namely, the upper, middle and lower Huang Ting apertures. The upper Huang Ting aperture lies in the upper part of the diaphragm. The brain is under the control of the upper Huang Ting aperture. The middle Huang Ting aperture lies in the middle part of the diaphragm and controls the heart. The lower Huang Ting aperture lies in the lower part of the diaphragm and controls the spleen, which is about 10cm below the navel. The position of upper, middle and lower diaphragms is between the eyebrows, the breasts and below the navel respectively. In *Moral Classic* (《道德经》), Laozi put forward that the lower diaphragm should be kept and it is not proper for ordinary people to use the mouth and nose as apertures. *Fetal Breath Classic* (《胎息经》) says, "Qihai apertures are located 10cm below the navel, Qihai apertures are a synonym of lower diaphragm and Xuanpin. It is not proper for ordinary people to use the mouth and nose as apertures." Some argue that Zuqiao aperture (an aperture between the eyebrows) should be kept. The Taoist diaphragm-keeping method developed from the methods mentioned above. The Taoist scripture *Yin Fu Classic* (《阴符经》) advances the idea three major apertures should be kept, namely, the ears, the eyes and the mouth. So the mind would not be influenced by the external world and keep peace and quiet. As *Yin Fu Classic* says, "These three apertures, the ears, the eyes and the mouth are more important than the other six. They can move and keep quiet as well. Concentration is a Qigong terminology, which means the cultivation of the body and the mind. Yan Hui, a master of the Confucian school, called concentration "forgetting all while doing Qigong". It refers "to making the arms, the legs and the brain relaxed". In addition to this, the three schools stress exercising the mind's concentration. *Understanding the Truth* (《悟真篇》) says, "If the mind can keep

peace and quiet, he will possess the bravery and swiftness of a dragon and a tiger, he will not worry about his wife and children." *Book of History: Da Yu Mo* (《尚书: 大禹谟》) argues that both the mind and body should be cultivated. Buddhist school advocates "fixedness" and "abstinence". *Han Fei Zi* (《韩非子》), a treatise of the legalist school, also advocates inactivity and thoughtlessness. The exercises of concentration occupy an important place in Taoist Qigong.

II. Taoist Qigong is in favor of "fetal respiration"

Fetal respiration is a close — Qigong. It was recorded as early as in *Shan Hai Jing* (《山海经》), "A god, with a manlike face and a snakelike body, ... never eats, sleeps and rests." Fetal respiration of Taoist Qigong comes from the tortoise's breathing method. It belongs to bionics Qigong. Tortoise breathing is just like man's breathing, which is controlled by the diaphragm. It was also recorded in the *Emperor's Canon of Medicine*, "People whose kidneys do not work well, ... inhale, without exhaling seven times." It is said in *Bao Pu Zi* (《抱朴子》) written by Ge Hong that "People who know fetal respiration can breathe but not through the mouth and nose." Fetal respiration is a hidden breath or non-breath. *Keeping Fit and Longevity* (《养性延命录》) says, "Count the number from one to two hundred without breathing, then breathe out suddenly. After that, a person can feel comfortable and concentrate on what he is doing." Fetal respiration is a secret of Taoist Qigong. In fact, it is a rather slow and deep breath. As *Bao Pu Zi* (《抱朴子》) says, "A goose feather near to the mouth does not move when the air comes out of the mouth." Zhuangzi, a great master, also said, "If a person knows fetal respiration well, his deep breathing will make energy go back to the lower diaphragm." Another point argues that

the energy will return to the Zuqiao acupoint, which is located in the middle of the eyebrows. *Valuable Prescriptions: Adjustment of Respiration* (《千金方: 调气法》) says, "The key to keeping the mind at ease and to conduct respiration is to practice in a quiet place, — count to three hundred without breathing. Then the mind will keep peace and quiet. It will not be affected by what he hears and what he sees. This is a special Taoist Qigong that imitates the respiration of a tortoise." In *Immortal Biography* (《神仙传》), it is said that Master Peng was still alive and active when he was seven hundred and sixty-seven years old. When Master Peng was young, he was fond of quietness and often did closing and inhaling exercises. He sat upstraight and did massage on his eyes and body from morning to noon, ... moistened his lips and swallowed saliva. When he was two hundred and forty years old. He looked like a fifty-year-old man. *A Collection of Long Wei Mi Shu* (《龙威秘书一集》) says, "It is good to people's health if they frequently do the closing and inhaling exercises." Fetal respiration can make men attain the mystical realms, such as Bi Gu and energy-swallowing.

The general principles of fetal respiration Qigong are to be slow, gentle, deep and long. They are carried out by abdominal respiration. The principles conform to the theory in *Book of Changes*.

III. Taoist Qigong stresses the importance of cycles

The *Great Treatise on Yi* says, "The energy can be circulated through the body if it keeps moving all the time." It becomes the theoretical basis of how to regulate the energy through the body. Each Qigong school stresses the importance of cycle, which means the energy can be conducted in a circle through the body under the control of the mind. Pill-making Qigong in the Taoist school especially stresses the cycle exercises. Cycle Qigong consists of two

kinds, namely, the Big Cycle and the Small Cycle. The Big Cycle Qigong includes several processes, such as concentration, herb-mixing, herb-producing, herb-picking, oven-sealing and pill-making. The Small Cycle Qigong includes the connection of Ren and Du channels, and the combination of the Kan and Li trigrams, which is the quintessence of pill-making Qigong in the Taoist school. That is to say, the vital energy is conducted under the control of meditation. The route of energy starts from the Lower Diaphragm, then goes to the Lower Magpie Bridge, after passing through the sacrum, it goes to Yu Zhen; then to the top part of the head, out of the eyes to the Upper Magpie Bridge, along Ren channel to the chest and to the upper, middle and lower diaphragm. A complete cycle is finished and a new cycle begins.

Xuanpin cycle is also called Ziwu cycle. In congenital Eight Trigrams, Xuan and Qian trigrams are complete Yang ☰. Pin and Kun trigrams are complete Yin ☷. After man's birth, the congenital Eight Trigrams become postnatal Eight Trigrams. Qian trigram becomes Li trigram ☲, Kun trigram becomes Kan trigram ☵. So changes must be to fill Li trigram with Kan trigram. Then Li trigram goes back to Qian trigram ☰ and Kan trigram goes back to Kun trigram ☷. That is to say, the postnatal Eight Trigrams return to the congenital ones. Eventually, the purpose of mediating Yin and Yang will be achieved.

The juncture of upper and lower diaphragms is the Xuan apertures. The terms, Xuan and Fu apertures, were first recorded in Chapter Six. It says in *Laozi*, "The Valley Spirit never dies (谷神不死)", which is called Xuan and Pin. The Xuan and Pin apertures are regarded as the roots of life. The continuance of human beings is due to these two apertures." In *Book of Changes*, Xuan symbolizes

the heaven and Qian; meanwhile, Pin symbolizes the earth and Kun. Xuan and Qian apertures are the key organs of the body. Human life originates in them. The energy is circulated through the upper and lower diaphragms. It is also termed the small life cycle.

The Big Cycle refers to the intercourse of Qian and Kun. The first process is to fill Li with Kan trigram. The second process is that the postnatal Eight Trigrams return to the congenital Eight Trigrams. That is to say, Li trigram becomes Qian trigram, and Kan trigram becomes Kun trigram. At this time, Mao and You cycles are also called the intercourse of Qian and Kun, i. e., the Big Cycle. (Kan and Li trigrams have been in the position of Mao and You.)

The Big Cycle in modern Qigong develops the exercises of twelve-channel cycle on the basis of Ren and Du channel connection. At present, it is a popular method of Qigong. Both He Xiangshuang Qigong and Da Yan Qigong adopt this theory. The general purpose is that the energy is conducted under the control of the mind to make blood and energy circulate smoothly.

The Taoist school stresses the cultivation of mind and body. In mind, the upper apertures are in charge of the mind and the lower apertures are in charge of life. Li trigram and Fire belong to mind, Kan and Water belong to life. Mind and body depend on and link with each other. The Taoist school argues that both lower and upper apertures are kept. This means the cultivation of mind and body are of equal importance. So Taoist quiet Qigong stresses that both the upper Ziqiao and the lower Qihai apertures are kept. At the same time, Ren and Du channels are open. Thus the energy will circulate through the Small and Big Cycles.

Section 3 *Book of Changes* and Buddhist Qigong

Buddhist Qigong has the distinguishing features of gentleness, calmness and smoothness shown in the Kun trigram in *Book of Changes*, which belongs to quiet Qigong. Sitting in meditation is the basic cultivation in Buddhist Qigong. According to legend, Siddhartha Gautama, the founder of Buddhism became enlightened after sitting in meditation for seven days and nights under the *bodhi* tree. Thereafter known as "Budda" (enlightened one), he advocated abstention as the basic step to calmness. Calmness and wisdom are two aims of Buddhist masters. So the three major steps, abstention, calmness and wisdom, are important principles for Buddhists to follow. The Taoist school stresses void, the Buddhist school stresses emptiness. The branches in the Buddhist school, such as the Tiantai, Zongmi, and Eastern Mi branches, pay attention to the cultivation of the mind. In *Hui Ming Classic* (《慧命经》), the cultivation of both mind and body is stressed. *Buddhist Allegorical Words*, No. 12 says, "Buddhist doctrine compares mind to tiger, which means 'moving', and compares body to 'quietness'." The combination of moving and quietness means Buddhist allegorical words. *New Writings of Zhao De* (《昭德新篇》) says, "If water is still enough, everything is reflected clearly. If mind is calm, then wisdom grows." Calmness in the Buddhist school has a relationship with Indian Yoga. Chanmi Qigong is a secret of the Buddhist school. Wisdom Qigong belongs to Chanmi Qigong.

Calmness in Buddhist Qigong does not simply mean absolute

stillness. There is some movement in calmness. When sitting in meditation, there is a spontaneously slight quiver in the body; it is one of the eight movement forms. It is a physiological and psychological reaction after entering the state of calmness. The reaction benefits health. The Chan sect is the basis of the Buddhist school. Buddhists hold that the mind should be separated from the body, allowing each Buddhist to become enlightened. *Ban Ruo Classic* (《般若经》) gives prominence to this inactivity; everything can be activated, which means letting things take their own course.

Sitting in meditation in Buddhist Qigong is usually called the training of contemplation. It was introduced into China from India during the Northern and Southern Dynasties. "Ch'an" refers to deep meditation. Its theory lies in prolonged and intense contemplation so as to purify the mind. Sitting in meditation belongs to quiet Qigong, which can regulate thought and breathing in a harmonious condition. It is beneficial to some consumptive diseases. The posture of sitting in meditation is to cross one's legs and to straighten one's back. *Da Zhi Du Lun: Volume 7* (《大智度论: 卷七》) says, "Among all the sitting postures, crossing one's legs is most steady and comfortable. This sitting posture can also help the Buddhist easily reach deep meditation. Sitting in meditation in cooperation with the regulation of thought and breathing is beneficial to the body and mind and allow for a long life. What's more, it can aid in the recovery from some chronic diseases. For this reason, Buddhists greatly advocate Chan and compare it to a jewel. If a Buddhist masters it, he will master all else.

In brief, Qigong of the Buddhist school stresses calmness, emptiness and the separation of mind and body. Yet, Qigong of the Confucianist and Taoist schools adhere to the unity of the mind and

body.

The three Qigong schools have their own outstanding characteristics. But the theory of each school is drawn from *Book of Changes*. Each is the synthetic coordination of three principles, namely, exhaling and inhaling, conducting and meditation. Qigong of the Confucianist, Taoist and Buddhist schools, as the three major Qigong schools, has made great and positive contributions to the formation and development of Chinese Qigong.

(Translated by Sun Bingtang)

Chapter Seventeen

Book of Changes and the Science of the Brain

Section 1 The Re-evaluation of the Dynamic Role of Consciousness

Qian Xuesen, a famous scientist in China, once said, "The existence of man's therapeutics is the first leap in the history of medicine; prevention in medicine is the second leap; convalescence is the third leap; and intellectual medicine has become a part of the fourth leap."

At present, the significance of the developing psychophysiology has been called the fourth leap in medicine. Intellectual medicine is the main part of brain sciences and its purpose is to develop human intelligence.

The advanced development of the human brain has enabled man to surpass other animals. Therefore, it is still necessary to make the brain a breakthrough point in order to probe the mystery of human life. Great potential in the use of the brain remains to be exploited. The surprising capacity of the brain badly need to be revealed. Qian Xuesen has said, "Spirit is the motion of matter (brain) and it also

has an effect on matter (organs of the body).” That the consciousness under Qigong predominates the motion of the brain shows the dynamic role of consciousness upon functions of the human body. This is called “biological feedback”. That is to say, man can effect physiological action through consciousness, this is regarded as a kind of feedback of consciousness, which can react at a low level, but is the highest level of the phenomenon of life. Wang Jialin, who works in the Research Institute of Medical Sciences in Yunnan Province, through modern scientific experiments, has demonstrated that consciousness can dominate the internal organs. This has challenged the traditional idea that consciousness cannot dominate the internal organs.

The function of the brain under Qigong shows that we must reconsider the dynamic role of consciousness. The relationship between consciousness and matter is an important part of dialectical materialism, according to which, matter is primary while consciousness is secondary. As it develops to a certain degree, matter will produce consciousness, which reflects matter. However, the activities of consciousness under Qigong show the great power of consciousness. Thus to re-evaluate the capacity of consciousness challenges the realm of philosophy.

The practice of Qigong has proven the following aspects: First, it is obviously necessary to improve the position of consciousness; Second, consciousness should also be an independent matter; Finally, consciousness and matter depend on each other and are interchangeable. If not, how can we explain the various paranormal activities of the conscious mind under the influence of Qigong? The phenomenon of telepathy that has attracted attention both at home and abroad may be a matter phenomenon — a type of information

sign that lies in the universe and can be transmitted under certain conditions. Once the information ciphers can be revealed, human sciences will enter a new era. This forms the broad prospect of the study of the brain.

Section 2 A Brief Account of the Development of psychophysiology — Both at Home and Abroad

Psychophysiology is a new scientific frontier. In both Eastern or Western medicine, the study of the brain has long been in a stagnant condition. Two thousand years ago, records show China already had knowledge about the brain. For example *Qi wei: Chun-qiu: Yuan Ming Bao* (《七纬：春秋：元命苞》) says, “Human spirit lies in the brain.” In ancient China the brain was called a mud ball. A book in the Taoist school *Huangting Neijingjing* (《黄庭内景经》) says, “Each joint of the mud ball has spirit.” “The root of the cerebral nerve is the mud ball.” From this we can see that people in ancient China had already noticed the relationship between the brain and the neurology. *Plain Questions* and *Spiritual Pivot in the Emperor's Canon of Medicine* offer a clear understanding of the role of the brain. For example, *Spiritual Pivot: Hai Lun* says, “The brain is the marrow sea.” It is recorded in *Plain Questions: Mai Yao Jing Wei Lun* that if a person's brain is ill, he is likely to have tinnitus, to see nothing, and want only to lie and rest. His spirit may be gone. We often say a dizzy head and dim eyesight. These suggest the brain is related to the spirit, sense of hearing and sense of sight. It is recorded that “The brain, marrow, bones, ar-

teries and veins, gall and uterus, these six are all babies of Di Qi (vital energy of the earth) all hide in Yin and reflect the earth, so they store and won't discharge." The brain and marrow had been called organs. But the brain has never been regarded as an independent internal organ of the body. It has always been considered as a part of the heart. In the Ming Dynasty, Li Shizhen put forward that the brain was the home of the prime god. In the Qing Dynasty, the forerunner of Chinese anatomy, Wang Qingren put forward that sudden inspiration and memory lie in the brain (from the book *Correction on the Errors of Medical Works*). These two ideas brought psychophysiology into a new realm and broke down the theory that the heart and brain were united. Since TCM had long thought that the brain belonged to the heart, the central nervous system and blood had long been discussed together. As a result, the development of psychophysiology was greatly limited, though the brain is the supreme commander of the body and the center of human life.

The development of psychophysiology in the West was the same as in China. It did not embrace a rapid development until the research work of the cerebral hemispheres was done by Pavlov and another scientist in the 1870s. The rapid development of all sciences in modern times has pushed forward the development of psychophysiology. Some modern techniques, such as electroencephalograph, cerebral magnetogram, cerebral blood flow, etc., contribute to its development. Brain transplants in laboratory animals has been successful. The dream of human brain transplants will soon be a reality.

The human brain has great potential capacity that has remained untapped. That *homo sapiens* evolved into *homo sapiens sapiens* is above all the result of labor. Therefore, labor is the precondition to

the exploitation of the brain. In other words, use suggests progress, while disuse suggests regression.

Surprisingly only about 20% of our mental potential is normally exploited. Qigong is a good way to develop intelligence. The Taoist school and the Buddhist school have special ways. Thus to exploit Qigong becomes necessary.

The human brain is composed of over 15 billion nerve cells, which are classified as 50 million types. It is a tremendous information system. It can surprisingly store about 1.4 trillion types of information. Nevertheless, only a small number of nerve cells are used during one's life. Even the most modern computer cannot compare with the complex tissues of the human brain. What is astonishing is that the declination of the brain is much slower than that of any other part of the body. The size and weight represent its volume of information. After the age of 80, its weight is decreased by only 6.6 grams on average. Furthermore, it is uncommon for the brain to decline with age. Senility takes place only in a specified area. According to the research of modern scientists, the decrepitude of the brain is only the decrepitude of a certain group of brain cells, which will be replaced by another group. Its decrepitude is not in proportion to age. Especially, one's mental ability is not likely to decline. Two American scientists have found that the dendrite number, length and branches of brain cells of healthy elderly persons obviously surpass those of middle-aged persons. That is to say, although people get old, that does not mean the brain is getting old (Arteriosclerosis in the brain is a disease and should be excluded in this sense). Thus, we have reasons to say that brain capacity has no limit. The physiological structure of the brain provides us with a scientific basis for developing intelligence.

The potential capacity of the brain happens in time of emergency. The proverb "people show resourcefulness in an emergency" reveals this truth. Those whose brains have special functions can make full play of their brain's potential capacity. Some brains have the function of psychokinesis or telepathy or precognition or psychometry. For instance, Zhu Dazheng can predict earthquakes, and Du Yongcheng can prospect for mineral deposit without any instrument. From this we can see that the human brain is great. It has been found that Qigong can cause these special functions of the brain. Meditation under Qigong can discover, receive and deal with the information that ordinary people can't perceive. Du Yongcheng's case is a good example. He said, "May be this is a kind of receiving function for natural information. All the objects in the world send out information. The cerebral nerves work as a receiver. The receiving band of ordinary people is very narrow, or not opened. By practising Qigong, the receiving band can be enlarged or opened to receive the various information from far away." (page 19, Issue 4, 1987, *Chinese Qigong*). It has been proven in practice that Qigong can increase the intensity of an electroencephalograph. Zhu Cansheng of Nanjing University, together with a Qigong master, claims to have successfully projected thoughts to other professors. Therefore, some specialists say that many people can obtain such ability by learning and practising Qigong. If we can prove some principles in this aspect, we will be able to establish a new field in the development of intelligence.

The above indicates that Qigong may influence the development of the brain. Practising Qigong may improve the strength of brain waves and change the functions of the brain.

Section 3 Book of Changes and the Development of Psychophysiology

Book of Changes is the origin of Chinese Qigong. The motive and motionless Qigong and their theories in the Confucian, Buddhist and Taoist schools come from *Book of Changes*. *Changes* attaches much importance to both motion and rest, emphasizing the unity of motion and rest. Its general idea is "production and reproduction can be the process of change." The work also advocates training Jing Qi, that is to say, to preserve one's health by imitating creatures. For instance, it says in *The Great Symbolism in Ding Trigram of Yi*, "The symbol of wood and above it that of fire form Ding. The superior man, in accordance with this, keeps his every position correct and maintains secure in the appointment of heaven." It says in the *Great Treatise on Yi*, "Snakes and dragons preserve themselves by hibernating." It tells people to preserve themselves by imitating snakes and dragons in resting completely. This is in accordance with what is recorded in *Shan Hai Jing* — to keep one in good health by imitating snakes and dragons in not resting, not eating and not sleeping. In addition, people also imitate a tortoise in resting. As is recorded in *Shan Hai Jing*, the snake with a human head can change into 72 different shapes every day. *Book of Changes* advocates, "When a series of changes have run their course, another change ensues. When it obtains free course, it will long continue." In this sense, *Shan Hai Jing* and *Book of Changes* are in agreement, both emphasize the unity of dynamic and static. The theory of changes and free courses of *Book of Changes* form the theoretical

basis for the development of psychophysiology.

Section 4 Qigong of the Brain

Qigong of the brain is an effective way to improve the function and the potential capacity of the brain. Qian in *Book of Changes*, advocates motion and strength, Kun advocates rest and mildness. Under the outlook of the unity of dynamic and static, both motive and motionless Qigong have good effects on the brain.

I. Motive Qigong of the Brain

1) Mind leading bigcycle Qigong

Its purpose is to preserve one's energy and nourish one's brain. Do according to the following directions (see figure 17-1): First, stand naturally with your hands at your sides, close your eyes with your tongue at the roof of the mouth. Breathe several times, then raise your hands, lift your heels, drawing the Qi of Heaven (vital energy of heaven) from head top acupoint Baihui to your brain. Keep Qi by meditating on Mudball (hypophysis of the brain — the focal point of life). Second, lower the hands to behind the head, cross your hands and cup your head, draw Qi by the hands from your face to Shanzhong, keep Qi by meditating on Xingong (behind the central part of the chest bone). Third, draw Qi to Lower Elixir Field (3 *cun** under the naval). Put two hands together under the

* A: When the middle finger is flexed, the distance between the radial ends of the two interphalangeal creases of the patient's middle finger is taken as 1 *cun*. B: The width of the interphalangeal joint of the patient's thumb is taken as 1 *cun*. C: When the four fingers (index, middle, ring and little fingers) keep close, the width of them on the level of the proximal interphalangeal crease of the middle finger is taken as 3 *cun*.

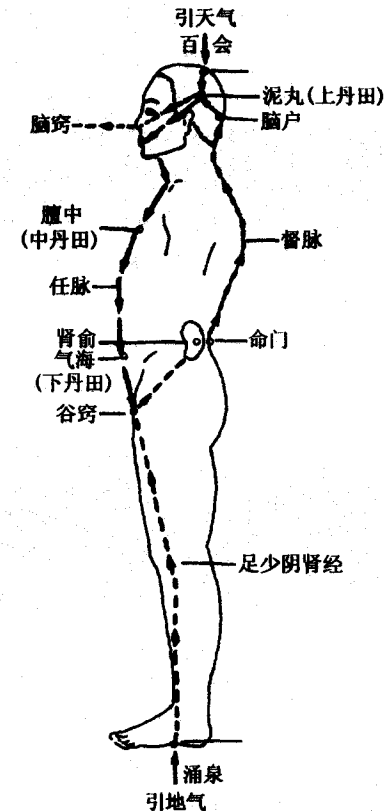


Figure 17-1 Mind-leading Big Cycle Qigong

Refer to this figure:

- 百会 Baihui 引天气 draw Heaven Qi from here
- 脑窍 Naoqiao 膻中(中丹田)Shanzhong (Middle Elixir Field)
- 任脉 Ren channel 肾盂 Shenyu (Kidney Yu)
- 气海(下丹田)Qihai (Lower Elixir Field) 谷窍 Guqiao
- 涌泉 Yongquan 引地气 Draw Earth Qi from here
- 足少阴肾经 Kidney channel of foot-ShaoYin 命门 Mingmen
- 脑户 Naohu 泥丸(上丹田)Mudball (Upper Elixir Field)

naval. Keep Qi by meditating on Minggong. If there is bad Qi, drive it out from Xia Gu Dao. Fourth, breathe several times, bend your body and your legs, hold Di Qi (vital energy of earth) with the hands and send Di Qi to the kidneys meridian from Yongquan at the bottom of the feet. Then send Di Qi through the meridian up to the kidneys. With two hands crossing at the back of the waist, keep Di Qi at Shen Gong (2 *cun* * inside Mingmei as in the chart) Then draw Qi from Shenyu through Mingmei to the Du meridian. Qi will continue going upwards to your back, neck, and finally reach your brain through Naohu, keep Qi there. Drive by meditation the bad Qi out from Naoqiao (at the back of the nostrils).

Mind-leading big cycle Qigong is a thought process, which, with the help of breathing, blends the Qi of heaven, earth, sun and moon and sends this Qi to the heart, brain and kidneys. While doing it, you can also use the hands and feet to cooperate with the breathing. You can be flexible, without necessarily being too consistent. It is true that where there is rising and coming, there is falling and going. When clear Qi is inhaled, bad Qi must be exhaled.

2) Mind leading small cycle Qigong

Stand naturally, breathe several times, close your eyes with your tongue at the roof of the mouth. Draw the kidney Qi by meditating on the acupoint of Shenyu through Mingmen to the Du meridian. Cause Qi to go up to the brain through Naohu. When the brain is filled with this Qi, keep Qi in Naogong (3 *cun* *) under Baihui, near the site of the cerebral hypophysis). Then cause Qi to come out from Naohu, and go down along Tianzhu to Shenyu, keep Qi in Shengong (2 *cun* * inside Mingmei). Then breathing several times, draw Qi again from Shenyu to the brain. Doing this repeatedly can invigorate your brain.



Figure 17-2 Mind-leading Small Cycle Qigong

Refer to this figure:

百会 Baihui 泥丸 Mudball 脑户 Naohu 天柱 Tianzhu
肾俞 Shenyu 命门 Mingmen

According to Later Arrangement of King Wen, the trigram Li refers to the heart (brain), representing fire. The trigram Kan refers to the kidneys (life) and is the lineal symbol of water. In other words, drawing Kan to help Li is drawing semen to nourish the brain. It says in the *Emperor's Canon of Medicine*, "The kidney produces marrow. ... The brain is the sea of marrow." At the tip of the forehead, The Du channel is linked to parietal. The Du channel

goes up into the Luo mind. The Du channel is also linked to the kidneys. Therefore, the principle of mind-leading small cycle Qigong is that drawing Qi of semen by meditation to the brain and nourishing it through the Du channel. During the whole course of Qigong of the brain, one's thoughts should be concentrated on the channel from the kidneys to the Du channel and finally to the brain. The thoughts should be kept at the point three *cun* * under Baihui. It is significant to stick to doing Qigong of the brain. It may develop the brain's functions and potential capacity and delay senility.

II . Motionless Qigong of the Brain

Motionless Qigong of the brain is to produce wisdom by calmness and rest. The Buddhist school believes that calmness and rest can improve the function of brain. The *Emperor's Canon of Medicine* includes reference to this practice. For instance, *Plain Questions: Sheng Qi Tong Tian Lun Pian* says, "Saints spread spirit and know what is done by the spiritual power." *Wu Zhen Pian* of the Buddhist school emphasizes exercising oneself and his will, that is to say, the cultivation of one's heart.

In one day, people may have thirteen billion distracting thoughts, which do harm to the brain, especially evil intentions. According to foreign research, jealousy can produce enough endotoxin to poison a small animal. Therefore, people should accumulate virtue and do good. People should try to have less evil, malicious and wicked thoughts. Only in this way can they have long life.

The purpose of motionless Qigong of the brain is to improve intelligence by eliminating distracting thoughts, purifying the brain and resting the brain. Chinese Taoists and Buddhists especially advocate producing wisdom by clearness and rest. *Dao Cang: Du Ren Jing* advocates single-mindedness, restraint and giving up improper

thoughts. Laozi (founder of Taoism) advocates being quiet and letting things take their own course. The Buddhist school advocates becoming devoid of the sensuous world. Motionless Qigong of the brain is divided into two aspects: Walking Alone Qigong and Sitting Quietly Qigong. Walking Alone Qigong: In a quiet and secluded place, walk slowly, breathe slowly, deeply, and rhythmically. Cherish a good wish, eliminate distracting ideas. Finally get intoxicated with the good wish and then get in a placid mood without any thought or desire. Rest your brain completely. At this time, you will be in such a state: You hear nothing though you hear something. This will do good to intellectual development. *Zhuangzi* recorded what Confucius said to Yan Hui, "When you listen, you actually listen with your heart, with your Qi will, not only with your ears ... Modesty is the training of your heart and mind" (*Zhuangzi: The Fourth in Human World*). It's better to do this Qigong at dusk in the moonlight. This method is especially suitable for mental laborers. After doing this Qigong, your brain will be refreshed, and you will be able to work more efficiently.

Sitting Quietly Qigong: Close the door, sit down with your head tilted back and your eyes half-closed in a comfortable state; breathe slowly and deeply or read silently. Gradually come into the state of Jing (motionless and stillness). But Jing doesn't mean restraining your cerebral cortex. After coming to the state of Jing, you must look actively inside the mud ball (brain), keep Qi in the point three *cun* * under Baihui. After a while, open your eyes slowly and wash your face. Your brain will feel fresh. Then you can work more efficiently. This is in accordance with what the Buddhist school says "Resting in meditation, calmness and rest can produce wisdom". *Zhuo De Xin Bian* says, "If water is clear enough, it can have a

very clear image; feeling calm enough can produce wisdom. Confucius told his student Yan Hui to sit as if forgetting himself and to come to such a state: quiet and clear minded. This is called "Zuo Wang" (坐忘). All these health-keeping principles are the application of the theory of the *Book of Changes* — Kun should be quiet, gentle and docile.

III. Invigorating Brain Qigong By Hand and Foot Exercises

The third way of Qigong of the brain is invigorating Brain Qigong By Hands and Feet. Because the hands and feet are linked to the brain, exercising the hands and feet can invigorate the brain. The *Emperor's Canon of Medicine* says, "The four limbs are the basis of all Yang," (*Plain Questions: Yang Ming Mai Jie Pian*). The head is the chief of all Yang. The relation between the head and the ends of the four limbs is of vital importance. The four limbs are closely connected with the head through meridians. For example, three Yang channels of the hand go from the hands to the head; three Yang channels of the feet go from the head to the feet. Hands and feet are the sources of Qi of three Yang channels of the hand and three Yang channels of the feet. So in the acupoints of Laogong on the palm and Yongquan on the sole, there are meridians leading to the brain. This is the theoretical basis for invigorating brain Qigong by hand and foot exercises.

It's suitable to do this Qigong during breaks in work. The two cerebral hemispheres function separately but cooperatively. The left side is mainly used for thinking, understanding, calculation and language (analytical). The right side is mainly used for memory, image, sense, feeling and music (creative). Therefore, people who work mainly with the left side may gain convalescence by exercising the right hand, while people who work mainly with the right side

may gain convalescence by exercising the left hand. They can also do Hand Gong or Foot Gong to invigorate the brain.

A person who is weak in heart Qi should do Hand Gong, for Qi of meridian in Laogong on the palm can reach the heart. The heart and the small intestine are connected. This Qi can go upwards from the small intestine to the heart, face, eye and finally to the brain. It is done by moving two walnuts or two steel balls in each acupoint of Laogong in the palm, drawing by meditation the meridian Qi from Laogong along the Heart channel of Hand-Shaoyin to the heart, then through the small intestine meridian of Hand-Taiyang to the head and filling the brain with Qi.

A person who is weak in kidney Qi should mainly do Foot Gong, for Qi can go upwards from Yongquan through kidney meridian to the kidneys, then through bladder meridian, which is connected with the kidneys, Qi can reach the brain from parietal. It is done by rolling a ball or a round stick with bare feet, drawing meridian Qi through the bladder meridian to the brain. If you do Hand and Foot Gong together, the effect will be better.

Invigorating the brain by manipulating acupoints:

Motive and motionless Qigong of brain and Hand and Foot Gong all can invigorate the brain. No matter which Gong you do, you should accentuate it by tapping the head gently, massaging the scalp, and manipulating the acupoints that can invigorate the brain.

When you massage or manipulate the acupoints, you should attach much importance to the Du Channel and liver and kidney meridian, because the Du Channel has the longest part in the head and is closely connected with the brain. The liver and kidneys are the resources of the brain. In addition, you should also pay much attention to the bladder meridian, gallbladder meridian, meridian of

San Jiao, large intestine meridian and small intestine meridian, because these meridians all go towards brain. You should manipulate the following acupoints:

Baihui belongs to the Du Channel, at the midpoint of the line connecting the apexes of both ears. Taiyang belongs to the extra points of the head and neck, between the lateral end of the eyebrows and the outer canthus. Shenting belongs to the Du Channel, at the midpoint of the anterior hairline. Fengfu belongs to the Du Channel, 1 *cun** directly above the midpoint of the posterior hairline. Fengchi belongs to the gallbladder meridian of foot-Shaoyang, on the dorsum, 1.5 *cun** lateral at the same level of Fengfu. Jingming belongs to the urinary bladder meridian of foot-Taiyang, on the face, in the depression slightly above the inner canthus. Dazhui belongs to the Du Channel, on the posterior midline, in the depression below the spinous process of the 7th cervical vertebra. Naohu is the crossing point of the Du Channel and the urinary bladder meridian, 1.5 *cun** above Fengfu. These acupoints have an adjusting role on the brain, so they are very important. Hegu belongs to the large intestine meridian of hand-Yangming, on the dorsum of the hand, between the 1st and 2nd metacarpal bones, and on the radical side of the midpoint of the 2nd metacarpal bone. This acupoint can affect the brain. Yongquan belongs to the kidney meridian of foot-Shaoyin, on the sunken point at the bottom of the feet, it effects the brain. Taichong belongs to the liver meridian of foot-Jueyin, on the instep of the foot, in the depression of the posterior end of the 1st interosseous metatarsal space. Shixuan belongs to the Extra Points, on the tips of the ten fingers, it is connected to the brain and the central nervous system.

These acupoints should be pressed gently together with

thought. You will obtain Qi, if you feel pain, apathy or bloated. Clear Yang will rise after you have pressed the acupoints, and your brain will be refreshed. In brief, it can improve the blood circulation and function of the brain.

Invigorating the brain Qigong is suitable to everyone, especially to mental laborers, because mental work is very intensive and the brain is always under a state of being overloaded. Qigong of the brain can benefit the brain and improve work efficiency. See the brain invigorating acupoints in chart 17-3 (the other points are in chapter 20, *Book of Changes and Aesthetic Medicine*)

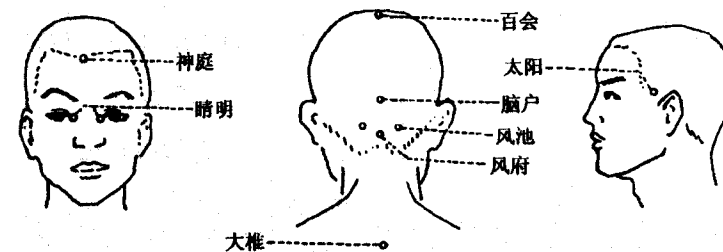


Figure 17-3 Invigorating the brain by manipulating the acupoints

Notes to this figure:

神庭 Shenting 睛明 Jingming 百会 Baihui 大椎 Dazhui
脑户 Naohu 风池 Fengchi 太阳 Tai Yang 风府 Fengfu

(Translated by Wang Suqing)

Chapter Eighteen

Book of Changes and the Study of Acupuncture and Moxibustion

Section 1 *Book of Changes* and the Midnight-Noon Ebb-Flow Technique and the Eight Magic Turtle Techniques

Book of Changes is closely related to acupuncture and moxibustion. It provided a guide to the study of acupuncture and moxibustion.

Midnight-Noon Ebb-Flow is a classical theory of acupuncture time; it selects the appropriate acupuncture points in terms of the time of opening and closing of the Qi of the Twelve Channels; its method is to predict the status of the ebb and flow in terms of the Heavenly Stems and Earthly Branches. The changes of the Qi and blood of the Twelve Channels are based on the ebb and flow of Yin and Yang in the day and at night. Therefore midnight is Zi, Zi is supreme Yin and inevitable transmutation of the superposed Yin into Yang, Qi ascends at midnight; morning is Mao, in which Yin is de-

ficient and Yang is excessive; noon is Wu, which is the supreme Yang, the superposed Yang is inevitably transmitted into Yin and Qi descending at noon; dusk is You, in which Yin flows and Yang ebbs gradually. The ebb and flow of Yin and Yang are the quintessence of *Book of Changes*, which holds that the changes of two influences of Yin and Yang originate in the work of the universe, the sun and the moon. Therefore, based on the ebb and flow of Yin and Yang of *Book of Changes* and the *Emperor's Canon of Medicine*, the theory of Midnight-Noon Ebb-Flow is that the ascending and descending and multiple abscess of the Qi, corresponds to the work of the day and night or the sun and moon, which selects the acupuncture points in terms of the periodical ascent and descent of the Qi as well as the elaboration of the biological clock's law of the *Emperor's Canon of Medicine* and the timing of the Stems and Branches.

Midnight-Noon Ebb-Flow regards the Twelve Branches as the mark, accumulates the Twelve Shichen (each of the twelve time periods in a day), each Shichen has two hours, and the Twelve Channels of the body representing the Twelve Shichen respectively, as seen in table 18-1.

The following rhymes help to recall the relationships:

Lungs stand for the Yin; large intestine, the Mao; and stomach, the Chen.

Spleen stands for the Si; heart, the Wu; and small intestine, the Wei.

The Shen represents bladder; the You, kidney; and the pericardium, the Xu.

The Hai stands for the triple warmer; the Zi, gallbladder; and the Chou, liver.

Figure 18-1 explains that the Qi of the body ebbs and flows like the tide and the Qi at the Shichen is the fresh Qi. Therefore, the effect of selecting the acupuncture points at the time is the best, which is the quintessence of the Midnight-Noon Ebb-Flow.

Both the "taking-Stems" method and the "taking-Branches" method of the Midnight-Noon Ebb-Flow come from *Book of Changes* and *Jing's Commentaries on Yi*. Midnight-Noon Ebb-Flow cooperates with the Zang and Fu (viscera), creating the opening-acupuncture point method (the taking-Stems method) based on the daily-Stems and the taking-Branch method on the hour's Branches. The timing of the Stems and Branches of the Midnight-Noon Ebb-Flow are created by means of the *Emperor's Canon of Medicine* and the timing of the ancient age, which is extremely valuable in the practice of acupuncture and moxibustion.

Table 18-1 The Twelve Channels Standing for the Twelve Shichen

The twelve branches	Yin	Mao	Chen	Si	Wu	Wei
The twelve Shichen	3-5 o'clock	5-7	7-9	9-11	11-13	13-15
The twelve channels	lung	large intestine	stomach	spleen	heart	small intestine
The twelve branches	Shen	You	Xu	Hai	Zi	Chou
The twelve Shichen	15-17	17-19	19-21	21-23	23-1	1-3
The twelve channels	bladder	kidney	pericardium	triple	gallbladder	liver

The eight magic turtle technique is a method of selecting acupuncture points based on the ebb and flow of Yin and Yang and the Eight Trigrams of *Book of Changes*, it coordinates the acupuncture points on the extra channels intersecting the regular channel into the Eight Trigrams and Stems and Branches to predict and select the acupuncture points, that is, the Eight Trigrams of *Book of Changes* are used to stand for the eight Huitong points and the Nine Gongs, and the Stems and Branches to select the acupuncture points in time.

Selecting acupuncture points in the eight magic turtle technique is related to the convergent acupuncture points of the eight channels and the position of the Eight Trigrams of King Wen, and the figures of the Luo Writing, which means that the eight convergent points of the Eight Extra Channels are corresponding to the digit of the Luo Writing and the position of the Eight Trigrams of King Wen; Kan number 1 corresponds to Shenmai; Kun number 2 to Zhaohai; Zhen number 3 to Waiguan; Xun number 4 to Linqi; Qian number 6 to Gongsun; Dui number 7 to Houxi; Gen number 8 to Neiguan; and Li number 9 to Lieque. These reflect the interrelation between medicine and *Book of Changes*.

The eight magic turtle technique, combining the ebb and flow of Yin and Yang of *Book of Changes* with the Eight Trigrams of *Book of Changes* and the timing of Stems and Branches of the *Emperor's Canon of Medicine*, creates the cyclic plate opening the acupuncture points according to the Shichen daily, which shows that selecting the acupuncture points is only in terms of the day, Shichen, Stems and Branches. The eight turtle techniques coordinates the Eight Trigrams into the Nine Gongs and the Ten Stems. The above both Midnight-Noon Ebb-Flow in acupuncture and moxibustion and the eight magic turtle techniques embody the effect of

the law of *Book of Changes* on acupuncture and moxibustion.

Section 2 The Eight Trigrams in *Book of Changes* and Acupuncture and Moxibustion

The human body is a large Eight Trigrams, and the various parts of body are microcosms of the Eight Trigrams. Therefore, acupuncture and moxibustion points can be selected according to the meridian. In addition, it is valuable to do acupuncture and moxibustion according to the microcosm of the Eight Trigrams, which includes the Eight Trigrams of the umbilicus, nose, hand, foot, ear, eye, etc., as shown in Figures 18-1, 18-2, 18-3.

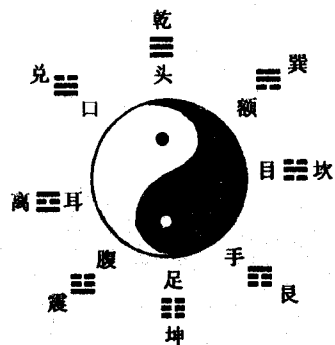


Figure 18-1 The Eight Trigrams of the umbilicus(1)

Notes to this figure:

乾头 Qian, head 巽额 Xun, forehead 坎目 Kan, eye 艮手 Gen, hand
坤足 Kun, foot 震腹 Zhen, abdomen 离耳 Li, ear 兑口 Dui, mouth

(for the other microcosms of the Eight Trigrams see Chapter Twelve *Book of Changes and the Science of Human Life*)

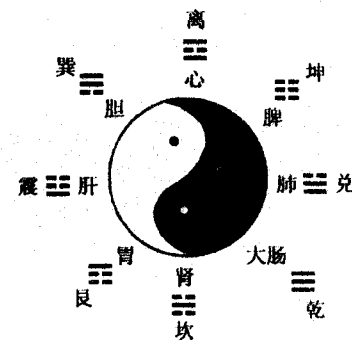


Figure 18-2 The Eight Trigrams of the umbilicus(2)

Notes to this figure:

离心 Li, heart 坤脾 Kun, spleen 兑肺 Dui, lung
乾大肠 Qian, large intestine 坎肾 Kan, kidney
艮胃 Gen, stomach 震肝 Zhen, liver 巽胆 Xun, gallbladder

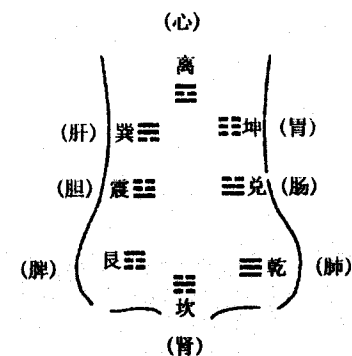


Figure 18-3 The Eight Trigrams of the nose

Notes to this figure:

(心) 离(heart) Li (胃) 坤(stomach) Kun
(肠) 兑(intestine) Dui (肺) 乾(lung) Qian
(肾) 坎(kidney) Kan (脾) 艮(spleen) Gen
(胆) 震(gallbladder) Zhen (肝) 巽(liver) Xun

The holistic acupuncture and moxibustion of the Eight Trigrams has the collective effect of strengthening acupuncture and moxibustion, which is the complement in selecting the acupuncture points according to the meridian and visceral outward manifestations, gives the positional study of acupuncture and moxibustion a new content, and has an important meaning in acupuncture and moxibustion.

Section 3 *Book of Changes* and Coordinating the Acupuncture Points

The method of coordinating the acupuncture points makes full use of the firm-flexible theory of *Book of Changes*. For example, the method of firm-flexible coordinating acupuncture points is to regard the Yang-Stems (odd numbers) as the firm and the Yin-Stems (even numbers) as the flexible in "Ten Heavenly Stems", it coordinates the meaning of interdependence between Yin and Yang into the acupuncture points. The method often coordinates Yang points into Yin points basically in terms of the Twelve Channel-taking Stem method, which is shown in Table 18-2.

In the method, for example, it is common practice to coordinate the Hegu (large intestine, firm) with the Taichong (liver, flexible) and Houxi (small intestine, firm) with Lieque (lung, flexible), which has the effect of adjusting Yin and Yang of viscera (Zang and Fu).

In addition, the tonification-purgation techniques of acupuncture are based on the theory of descending excess and reinforcing de-

fiency of *Book of Changes*. "Setting the mountain on fire" or "cool

Table 18-2 The Twelve Channel-taking Stem Method

Ten Heavenly Stems	Jia	Yi	Bing	Ding	Wu
Twelve Channels	gallbladder	liver	small intestine	heart	stomach
firm-flexible	firm	flexible	firm	flexible	firm
Ten Heavenly Stems	Ji	Geng	Xin	Ren	Kui
Twelve Channels	spleen	large intestine	lung	bladder	kidney
firm-flexible	flexible	firm	flexible	firm	flexible

like a clear night sky" is the method of tonifying deficiency and purgating the excess. As to the tonification or purgation by opening and closing the puncture hole of acupuncture and moxibustion, as is said in *Plain Questions: Acupuncture*, "The time of tonification and purgation is according to the opening and closing of Qi," which is equal to the open-close theory in the *Great Treatise on Yi* "to open and to close is to change". In ancient times, there had been the method of coordinating the Eight Trigrams with acupuncture and moxibustion.

In the tonification-purgation techniques, all kinds of theories pay attention to the "Purgation Nine and Tonification Six". "Setting the mountain on fire", "cool like a clear night sky", or "dragon and tiger fight each other" work with "nine" and "six", because

"nine" is the digit of the supreme Yang of *Book of Changes* and "six" the digit of supreme Yin. In *Book of Changes*, the properties of the Gua (trigram) and Yao regard "nine" as the Yang, "six" as the Yin, "Nine" is the sum of the odd numbers 1, 3 and 5. "Six" is the sum of the even numbers 2 and 4. Because an odd number is Yang and an even number is Yin, "nine" and "six" represent the Yin and Yang in the Gua (trigram) and Yao in *Book of Changes*. In acupuncture and moxibustion, "nine" and "six" stand for the number of tonification or purgation according to the Yin and Yang, which is equal to *Book of Changes* in the law but different in method. *The Great Collection of Acupuncture and Moxibustion, Li's Tonification and Purgation in Nan Feng* said: "In the method, "nine" represents the Zi Yang and "six", the Wu Yin, but the number "nine" or "six" is not equal, nor is the tonification or purgation by different ways of lifting and trusting, ... to work like the ebb of the tide, the first is the tonification "six", and the second the purgation "nine", the time is not until the ebb of the tide."

The descriptions above show that acupuncture and moxibustion in TCM are closely related to *Book of Changes*.

(Translated by Wang Yongmei)

Chapter Nineteen

Book of Changes

and Medicated Diet

People are closely bound to the outside world, besides breath, eating is an important part of this relationship. Eating and discharging are being done around the clock, which occupies one of the most important parts in human life.

Biology is an open system, and man is a huge open system as well, which continually exchanges with the outside world. Eating is a very important exchange medium.

Medicated diet means the relationship between medicine and eating. Medicine and eating have the same origin. They help each other and make use of each other. There is no strict demarcation between them, thus, combining medicine with food to improve health and to cure diseases is an important medical undertaking.

Book of Changes contains medicated diet principles. And the *Emperors Canon of Medicine* develops these further, which gives the foundation and development of TCM.

Section 1 Xiang in Book of Changes and Medicated Diet Principles

"Xiang" literally means symbol. *Book of Changes* is a book of symbols with sixty-four hexagrams, each of which is a small symbol. All of them vividly reflect all kinds of things, such as "Qian" stands for heaven, "Kun" for earth, "Gen" for mountain, "Li" for sun, "Kan" for moon. *Treatise of Remarks on the Trigrams of Yi* says, "Zhen suggests the idea of thunder, ... of bright young bamboos, of sedges and rushes. ... Qian for heaven means fruit." Sky is so high as to be called the highest wood, so it's called "wood fruit". There is a general character among the things similar in appearance. A common law exists in the natural universe, meaningly, minerals, animals and plants have similar characteristics. So they can be found in each other. This theory found the foundation that medicine and food have the same source so they can supplement each other. TCM theory suggests to take medicine by appearance, that is, we take the foods that appear similar to human internal organs as medicines. For example, a walnut looks like the human brain, therefore it's a tonic for the brain. Semen astragali complarati looks like a human kidneys, so it's a tonic for the kidneys. Based on the theory of taking food as medicine based on appearance, we adapt another method which is "organs nourished by organs". For instance, we take pig's kidneys as a tonic for human kidneys, cattle's eyes for eye problems, pig's bladder for enuresis. This is significant to medicated diet in TCM.

Book of Changes recommends taking food as medicine according to its meaning. This statement is also very instructive. "Li", in *Book of Changes* suggests the emblem of fire; of a turtle; of a crab; of a spiral univalve; of the mussel; and of the tortoise. All these seem to have a hard cover and a soft inside. "Gen" suggests the emblem of a mountain, of fruit, of trees and creeping plants. Most fruits grow in the mountain area. TCM theory believes in taking food as medicine by its character. For example, water plants are cool in character, so it's better to remove heat with them. The mineral plants growing among the stones in the mountains are warm in character, so they are made into medicine to expel cold. The cicada is good at chirping, so it is made into medicine to cure dysphonia. Red colored food is warm in character, therefore it's for expelling cold evil, while green food is cool in character and used for heat-clearing.

Section 2 The Eight Trigrams, Medical Food and Medicated Diet

The Eight Trigrams in *Book of Changes* are as follows: Water (Kan Shui, Dui Ze), Fire (Li Huo), Earth (Kun Tu, Gen Shan), Metal (Qian Jin), and Wood (Xun Feng, Zhen Lei). Trigrams are divided by their characters. In the Eight Trigrams there are five attributes, which are not only for human beings but also for animals, plants and minerals. Being a general rule of nature, it becomes the material foundation of medicated diet. Because they possess the same characteristics, these animals, plants and minerals are mutually suited to a human's Five Qi (elements). For example, Trea-

tise of Remarks on the Trigrams of Yi says, "Qian suggests the idea of heaven, of jade, of metal, of an old horse, and of the fruit of trees; Li suggests the idea of fire, of the sun, of buff-coat and helmet, of a turtle, of a crab, of a spiral univalve, of the mussel, and of the tortoise; Gen suggests the idea of a mountain, of a small rock, of the fruit of trees and creeping plants; Kan suggests the idea of water, of pain in the ears; ... the moon, referred of trees, it suggests that it is strong and firm-hearted." The *Emperor's Canon of Medicine* applied this theory to practice and developed it. It says in *Yin Yang Da Lun in Plain Questions*, "There is wind in the east, wind produces wood, wood produces acid, acid for liver, liver for muscle, muscle for heart. There is heat in the south, heat produces fire, fire produces bitter, bitter for heart ... Here is humidity in the centre, humidity produces earth, earth for sweet, sweet for spleen, spleen for heat, heat for lung. There is dryness in the west, dryness produces metal, metal for hardness, hardness for lung, lung for skin and hair, skin and hair for liver ... It produces cold in the north, cold produces water, water for salty, salty for kidney, kidney for bone marrow." The theory, which human and animals and plants are beneficial to each other, enriches and enlarges the content of TCM. *Zang Qi Fa Shi Lun in Plain Questions* says that poisonous medicines attack evil and diseases, crops and grains are nutritious, fruits are helpful, poultries are beneficial, vegetables are sufficient. We take a mixture of them to store energy. It is vital in TCM that we take medicine combined with grains, fruits, poultries and vegetable to cure diseases and to make us healthy.

The Chinese medicated diet has developed into a theory on the foundation of the combination of medicated food with adjuvant cooking materials, which has peculiar value in medical treatment, nutri-

tion and good taste.

The Chinese medicated diet has a strong influence on the study of nutrition around the world. Today companies produce a variety of wines, candies, pastries and soft drinks that are healthy and ward off senility or are effective in curing diseases. Our medicated diet has a bright future and will make great contributions to keeping man in good health.

Section 3 Rising and Decreasing of Qi According to Time in *Book of Changes* And the Biological Clock in Taking Medicated Food

Book of Changes emphasizes the ebb-flow of Qi according to time, namely there are high and low changes in Yin and Yang during a year or even within 24 hours. So when to plant medicinal herbs, to pick medicine or to take medicine should be based on the rules in the changes of Yin and Yang. *Book of Changes* has seven articles about Qi that state in detail that picking and planting medicinal herbs should be in accordance with the seasons. *Zhi Zhen Yao Da Lun in Plain Questions* proposes to use different medicines in different years. This means that we should pick and plant medicinal herbs by the character of Qi. For instance, in "Fire Year" warm medicines can be picked and planted because their warm character is the strongest in this year. In "Water Year", Yin medicine is fit to be picked and planted, because its cool character is the strongest.

The taste of vegetables and fruits will not be good if they are not in season, though they have a good appearance. As Confucius

said, "Don't eat when they are not in season." This is also true with medicines. Picking and storing medical herbs should be in time. The seven articles about Qi suggest eating new crops (or fresh crops), a practice that is vital to keep the medicated food in high quality.

The effect will be doubled if the time of taking medicine is fixed by the rising and decreasing of Qi according to time and midnight-noon ebb-flow. For instance, it is the best time to take herbal medicine between 11:00 p. m. and 7:00 a. m. the next day, and from Winter Solstice to Spring Equinox of a year when Yang is rising and Yin is decreasing, it is twice as effective to take warm Yang medicine. From 1:00 p. m. to 7:00 p. m. or from Mid-summer to Autumn Equinox is when Yang decreases and Yin increases, and is therefore a good time to take Yin cool medicine. This means it is best to take warm Yang medicine in the early morning and cool Yin medicine in the afternoon, which is in accordance with the medicine's natural tendencies.

In addition, at 11:00 p. m. and in winter, Yin is high and Yang is low. So it is best to take warm Yang medicines before midnight. At noon or in summer, Yang is high and Yin is low, so it is best to take heat clearing medicines to reduce "Fire" before noon and in summer. The biological clock for taking medicine is a study with both treating efficiency and economic efficiency. It should be applied to medical practice.

People's need for five tastes lies in the biological clock. During the day, over a whole year, or even during one's entire life, the need for five tastes changes regularly with the change of Yin and Yang. For example, at noon in summer, or in youth, Yang is high while Yin is low. People like to eat cool and sour foods, to naturally warm Yin. At night, in winter or in an old age, people like to eat

warm sweet food to warm Yang and restrain Yin.

Our body appears to apply for Wu Wei (Five Tastes) by high or low of Zang Qi, namely "Take in the tastes for self-save." For instance, a person tends to eat sweet foods when the spleen is weak and tends to eat bitter foods when the heart is too strong. This is because sweet foods are helpful to the spleen, bitter and cool food can reduce heat of the heart. When Zang Qi, vital energy, begins to demand certain tastes, it tends to be exhausted, it is called real Zang Taste, which is a sign that the internal organs have gone wrong, people have a strong desire for a certain taste. This case is also a basis for a doctor to make diagnoses about a certain disease. The gall-bladder will have bi-syndrome when the mouth feels sweet, the kidneys will be sick when the mouth feels salty, etc.

In short, the biological clock of medicated diet is a major subject of time medicine and should be studied further.

Section 4 The Theory of Purgation and Invigoration and Medicated Food to Life

The internal organs from the first day after birth to the time of death never stop working. Therefore, they lose a lot of energy and the energy storing ability is gradually reduced. This means we have to invigorate ourselves. In *Zheng Tong Dao Cang* (《正统道藏》), it says, "A person can live no longer than 30,000 days. We can't live a day without purgation or invigoration." When a person gets to a certain age, he can not get rid of some waste from his body, such as sputum and fat. People need help to get rid of the waste,

otherwise, it will accumulate in body. People need to purge them. *Zhuan* in *Sun Trigram of Yi* says, "Diminution and increase, overflowing and emptiness, these take place in harmony with the conditions of the time." There is a time when the strong should be diminished, and the weak should be strengthened. *The Orderly Sequence of the Hexagrams on Yi* says, "When diminution is going on without end, increase is sure to come; when increase goes on without end, there is sure to come a dispersing of it." *Treatise on the Hexagram* says, "Diminution and increase are the beginning of fullness and decay." The *Emperor's Canon of Medicine* has developed further the theory of loss and invigoration advanced by *Book of Changes*. It also puts forward a principle that states loss is going on when it is more than enough, and invigoration is going on when it is not sufficient. This principle is applied to the treatment in TCM. It says in *San Bu Jiu Hou Lun* in *Plain Questions*, "Purge when it is too strong in the internal organs. Supply to invigorate when it is too weak." But invigoration should be limited in degree, not too much, or it will cause illness. This theory is stated in detail in the *Emperor's Canon of Medicine*. In *Sheng Qi Tong Tian Lun* in *Plain Questions*, it says, "Qi in the liver is well, the spleen Qi is exhausted when the taste is too sour. Qi in the bone is exhausted and Qi in the muscle is stagnant when it is too salty. If the taste is too sweet, Qi in the heart is too much and it can make people out of breath and appear black because Qi in the kidneys is off balance. There is a depression of the spleen Qi and indigestion of the stomach when the taste is too bitter. The muscle and pulse are relaxed and spirit is low when the taste is too hot." *Zhi Zhen Yao Da Lun* in *Plain Questions* also says, "It takes as long to increase Qi as to improve it. But if it is increased too long, it will be damaged." So

eating to keep good health aims at light taste rather than heavy taste, dietary bias and too much food as well. In 1973, the Han Tomb in Ma Wang Dui was unearthed. It included accounts on the unearthed historical records referring to "Que Gu", which means to be on a diet. Confucius proposed in *The Analects* (《论语》), "Don't eat until you are full." It is also recorded in *Shen Xian Zhuan* "Do not eat too much, or this will cause disease and sputum." Ji Kang suggests in his *On Health* to "get rid of heavy taste." Fushan Dao Shi, who lived over a hundred years, also emphasized in his works taking light taste. Zhu Daxi in *Ru Dan Lun* (《茹淡论》) proposed, "Don't grant indulgence in heavy taste, if Five Wei (five tastes) is too heavy, it will cause illness." These statements emphasize "light taste" and "on diet", which are very helpful to improving health.

Between "hurt" and "invigoration" is "adjustment". There are two periods that are out of control during a life. One is during adolescence, when the body grows too rapidly to keep in step with the brain. It is normal at this time to be out of control. Another is the climacteric period, which is when the brain and mind can't keep in step with the rapidly declining body. It is normal at this time to be out of control. So it is a time for supplement, not for purgation, but for adjustment. The adjustment includes to disperse the stagnant liver-energy, to adjust the mind, and to alleviate mental depression.

At adolescence, it is good to increase supply to meet the necessities of growth. At middle age and after, it is a period of purgation and invigoration together. We should adjust Wu Wei to supply the storage of the internal organs, and have adequate purgation to eliminate sputum, fat, etc. to remove blood stasis and promote blood circulation, and to remove waste from the body. When we choose medicines for purgation and invigoration, we have to pay attention

to Wu Wei and their relation with the five internal organs (e.g. sour easily goes into the liver, bitter into the heart, sweet into the spleen, spicy into the lungs, salty into the kidneys). So we take the Wu Wei sour, bitter, sweet, spicy and salty to supply the liver, heart, spleen, lungs and kidneys respectively. We should also supply or purge the five internal organs according to their physiological character. If the taste complies with the organ's character it is called invigoration, against the character, purgation. *Zang Qi Fa Shi Lun* in *Plain Questions* says, "When the liver is seriously hurt, invigorate it with sweet. When it tends to be dispersed, supply spicy food to disperse, to invigorate and purge it with sour." The liver governs the function of smooth and free flow, when it is depressed sweet is fit for its invigoration. Spicy fits for adjusting and invigorating the liver according to its features. Sour is against the liver's character, so it is used for purgation.

(Translated by Ma Xuemei)

Chapter Twenty

Book of Changes and

Aesthetic Medicine

Aesthetic Medicine is a borderline science combining medical science and aesthetics. Beauty is an important part in the process of life. Aesthetic Medicine includes beautiful sounds, lusters (lights and colors), vigorous and graceful figures, beautiful countenance, and so on. It is a branch of preventive medicine as well as of rehabilitative medicine. Its significance lies in achieving health through the good stimulation of music, luster, vigorous and graceful figure, and beautiful countenance. The stimulation has wonderful effects on the mental state, which then acts on the body, and through biological feedback, the beauty of the figure is coordinated with the health of the internal organs.

Section 1 Connotation of Aesthetic Medicine in *Book of Changes*

Book of Changes implies the mystery of aesthetic medicine. The S curve in the Taiji Map is the most beautiful curve in the universe. The beauty of the curve refers to the shape of S, which is a symbol of Yin-Yang harmony. Keeping the S curve is an important

sign of maintaining the beauty of the figure. Figure beauty reflects the health of the internal organs. *Book of Changes* emphasizes the coordination of internal and external beauty. *Wen Yan* in *Kun Trigram of Yi* states, "His excellence is in the center, but it diffuses a complacency over his four limbs". This means that the health of the internal organs is the basis of external beauty, the physical beauty of the body is a reflection of health. TCM also has similar saying, such as "Internal beauty leads to external beauty."

Keeping the S curve should begin with the internal organs. According to the theory "decrease the full and increase the deficit" in *Book of Changes*. Before middle age, nourishment is important, especially nourishing Yin and the increase of Qi. Healthy internal organs are the basis of a strong and handsome shape. After middle age, "decrease" is stressed. That is to say, one should clean out the accumulated waste of the body, including reducing eczema, phlegm and diffusing silt. The healthy beauty of females should emphasize nourishing Yin, because the luxuriant Yin Qi leads to a graceful and vigorous figure. A female experiences pregnancy, child bearing, and menstruation in her life, all of which make her lose a lot of blood. So, removing stagnancy of the liver and restoring its function in addition to replenishing blood is the way to keep Yin Qi luxuriant and help form a vigorous and full figure. As for males, a handsome and healthy body lies in Qi, as it is said in *Wen Yan* in *Qian Trigram of Yi*, "Qian, origination, is able, with its admirable benefits, to benefit all under the sky", "How great is Qian! — strong, vigorous, undeflected, and correct." This means strength and vigor are symbols of a man's handsomeness. During a man's life process, he loses a lot of Qi, so nourishing Qi assisted by replenishing the kidneys and vitality becomes very important.

Beauty must be healthy and full of vitality rather than a morbid state, it requires a certain amount of movement to keep the shape. In the *Great Treatise on Yi*, it is said, "They change and move without staying in one place, flowing about into any one of the six places of the hexagram." "Production and reproduction is what is called the process of change." It emphasizes the truth "life lies in movement". Beauty can be found in constant movement, and movement creates a beautiful life.

Book of Changes attaches importance to the function of inner beauty on the body shape. In addition to the beauty of the internal organs, inner beauty also includes the most important beauty — spiritual beauty. The important connotation of spiritual beauty is to attain a handsome and vigorous body through the influence of psychology on physiology. *Book of Changes* stresses the virtue of loyalty, filial piety, integrity, honesty, benevolence and modesty. As it says in *The Great Symbolism of Kun Trigram of Yi*, "The superior man, with his large virtue, supports things", *The Great Symbolism in Xian trigram of Yi*, "The superior man keeps his mind free from pre-occupation, and open to receive others", in *The Great Treatise on Yi*, "He rests in his own position, and cherishes generous benevolence, and hence he can be loved." If a person has virtue, his mind is wide and his body is full. Both Confucius and Laozi attached importance on the coordination of spiritual and physical beauty. It is true that an insidious and crafty person seldom has a rosy complexion while the person of high virtue usually has a good color and an imposing appearance.

Section 2 The Application of Aesthetic Medicine in *Book of Changes*

I. Beautiful Sound and Luster Medicine

The most important beauty implied in *Book of Changes* is harmony and coordination. Harmony is the representation of beauty. The S curve in the Grand Terminus Map symbolizes the perfect harmony between Yin and Yang. The Xun Gua (Gentle Penetration) looks like a gentle breeze and drizzle, which add to the natural world a fine harmony. The harmonious sounds and lusters are the applications of aesthetic medicine as well as the aim of audio medicine and luster medicine. The beautiful and harmonious music or luster is a good stimulus, benefiting health and recovery. It says in the Chinese history book *Shi Ji* (《史记》), in the section *On Music*, "Music functions inside the body ... The mood changes with the heart-moving music. ... So the sound of music helps the flow of blood, comforts the spirit and supports the heart." Nowadays, good effects have been achieved through the cooperative use of music and Qigong.

TCM emphasizes the relationship between the five sounds and the internal organs. It judges a person's constitution and foretells the disease according to the sounds. As it says in the *Emperor's Canon of Medicine: Bao Ming Quang Xing*, "A musical instrument with a broken string produces a hoarse sound and a person in disease produces a voice like vomiting." In *Five Sounds and Five Tastes* in the *Emperor's Canon of Medicine*, "Listen to the sound

and we can know the shape." In this chapter, the five sounds Jiao, Zhi, Gong, Shang, Yu are matched with the five solid organs: the liver, heart, spleen, lungs and kidneys. This indicates that the five sounds are relevant to the five solid organs. So, in clinical treatment different kinds of music are chosen to adjust the five solid organs according to their Xu and Shi (weakness and strength). For example, the characteristic of the liver is hardness and it favors clarity. So if the liver Qi is blocked, the high-pitched, bold and flowing music should be used to adjust it. Conversely, if the liver is solid and with too much Yang Qi, the patient should listen to soft, slow and low-pitched music in order to aid in the release of Yang Qi. A person's spirit lies in the heart. If the spirit is unquiet, the patient should listen to smooth and steady music. In short, adjusting the weakness and strength of the five solid organs by listening to the five sounds is a characteristic of Chinese traditional audio medicine. In modern history, more and more importance has been attached to the treatment and recovery of patients by using harmonious music. Most patients are willing to accept such treatment and the effects are remarkable, especially in recovery from some chronic diseases. The beautiful music is a good stimulus leading to physiological changes and benefiting recovery. Physiology and psychology create feedback. The spirit greatly influences the body. Only when the spirit is in a good condition can the body be strong and handsome.

Beautiful and harmonious luster is also an important content of aesthetic medicine. TCM emphasizes the correspondence between the five countenance colors and the five solid organs. By examining the five colors, a patient's constitution can be observed and the disease can be foretold. For instance, green matches the liver, red matches the heart, yellow the spleen, white the lungs and black the

kidneys. Putting the five colors, the five sounds and the five solid organs in cooperation also nourishes or purges the body. TCM is good at adjusting and nourishing the internal organs (Zang and Fu) by selecting medicines and foods according to their colors. For example, red medicine or food acts on the heart, black on the kidneys, yellow on the spleen, green on the liver and white on the lungs. In addition, beautiful and harmonious luster is also a good stimulus with good effects on the body's recovery. Today, in medical sciences, great attention has been paid to the application of colors and lights in recovery and care.

II . Body-building and Facial Beauty Methods

1) Body-building Gong

A beautiful shape is a symbol of healthy internal organs. In TCM, the core of the organ and appearance theory is the unity of external appearances and the internal organs. The shape of the body is the external appearance of the internal organs. Only when the internal organs are healthy can the shape of the body be healthy and handsome. Similarly, a healthy and handsome shape is a sign of strong and energetic internal organs. The unity of appearance and internal organs is the main idea of the organ and appearance theory. The body is nourished by the internal organs. In return, it can act on them too. Both a vivacious and an obese shape can directly influence the internal organs.

The shape's decline is an important sign of the whole body's decrepitude. As *Zhi Zhen Yao Da Lun* in *Plain Questions* says, "Women... forty-nine, pulse weak, shape declined and sterilized. ... Men... fifty-six, kidneys declined, body exhausted." It means when a woman is forty-five years old and a man fifty-six years old, their shapes are declined. According to the state of the shape, the condi-

tion of the internal organs, strong or weak, can be known, and the future development of the disease, good or bad, can be foretold. As it says in *Mai Yao Jing Wei Lun* in *Plain Questions*, "If the head inclines with deep-caved eyes, the spirit is going to be declined; if the back is bend with inclining shoulders, Fu is going to be declined; if the body cannot twist, the kidneys are going to be exhausted; if the limbs cannot bend and spread, the tendons are going to be exhausted; if the person cannot stand for a long periods, his bones are going to be exhausted."

The above indicates the close relationship between the shape and the internal organs. So training the shape is very important to the training of the internal organs. The training for a vigorous and graceful figure must be combined with the training of the whole quality, including: body-building gymnastics, dance, Taiji boxing, Dao Yin, Qigong, and all sorts of sports. And it should be maintained all the year round. (For a detail method, see Chapter Sixteen, *Book of Changes* and Chinese Qigong.)

2) Skin-Internal Organs Training (Gong)

The training of skin and internal organs is an important content in body-building. The health and beauty of the skin is closely related with the health of the body. The skin is the first defense of the human body. The care of the skin relates to the internal health of the body. Thousands upon thousands of pores are "places where Qi penetrates". The health of the skin is closely linked with the health of the internal organs, as it says in *Spiritual Pivot: Ben Zang*, "The lungs match the large intestine, which is reflected by the skin ... the kidneys match the triple warmer bladder, which is reflected by the hair and the space between the skin and the flesh." So, the *Emperor's Canon of Medicine* claims, "All diseases, when they

rise, are to begin with the skin and hair. ... There are different corresponding parts of human skin, if the changes on them are neglected, people may have serious diseases." (*Pi Bu Theory in Plain Questions*) These attach importance to the relationship between skin and the internal organs. The skin is the reflection of Qi and blood. The prosperity and decline of the solid and hollow organs can be forecasted according to the luster of the skin. Plump and smooth skin suggests the prosperity of Qi and blood inside the body. Conversely, shivelled and rough skin suggests the decline of the internal organs, as it says in *San Bu* and *Jiu Hou Lun* in *Plain Questions*, "Those with pale skins will die"; *Channels* in *Spiritual Pivot*, "When the hand Taiyin Qi is exhausted, the skin and the hair on it will become dry"; *Lin Yong* in *Spiritual Pivot*, "Thin skin and flesh cannot defend oneself from the wind in winter"; *Five Changes* in *Spiritual Pivot*, "Person with thin skin and loose flesh will easily fall ill." The decline of the skin is the beginning of the body's decrepitude, as well as a sign of early senility. *Tian Nian* in *Spiritual Pivot* claims, "Forty ... the skin begins to be loose, the hair begins to be scarce, the vitality declines and the hair turns gray." This indicates the relationship between healthy, beautiful skin and human biological activities. Hence, it is of great significance to keep the skin's health and beauty. The training of skin-internal organs includes self-massage, tapping and manipulating points. Massage, also called "dry bathing", should be carried out according to the twelve Pi Bu. The so-called twelve Pi Bu are recorded in *Twelve Pi Bu* in *Plain Questions*, "All the twelve channels, twelve skin's Bu." That is, twelve channels have twelve corresponding Pi Bu, they are the superficial positions that reflect the functional activities of the twelve channels. Twelve Pi Bu are also the reactional regions of

twelve meridians. Twelve Pi Bu correspond with the internal organs through twelve meridians. So, good stimulation passing through twelve Pi Bu can act on the internal organs and gradually improve the organs' functions.

Method:

Meditation leads Qi to go along the circulation sequence of twelve channels, emphasis should be laid on the correspondence between the skin and the internal organs, in cooperation with the massage along the meridians, tapping and manipulating vital points. Skin massage must be done following the circulating direction of the meridians. The means of manipulating the vital points is to manipulate Yuan acupoints of the twelve meridians so that the meridian Qi can be generated. For example, Zhongfu acupoint of lung meridian (in the superior lateral part of the anterior thoracic wall, on the level of the 1st intercostal space, 6 *cun* * lateral to the anterior midline), Shangyang acupoint of the large intestine (on the radial side of the distal segment of the index finger, 0.1 *cun* * from the corner of the nail), Chengqi of the stomach (on the face, directly below the pupil, between the eyeball and the infraorbital ridge), Yinbai of the spleen (on the medial side of the distal segment of the great toe, 0.1 *cun* * from the corner of the toenail), Jiquan of the heart (at the apex of the axillary fossa, where the pulsation of the axillary artery is palpable), Shaoze of the small intestine (on the ulnar side of the distal segment of the little finger, 0.1 *cun* * from the corner of the nail), Jingming of the bladder (on the face, in the depression slightly above the inner canthus), Yongquan of the kidneys (on the sole, in the depression appearing on the anterior part of the sole when the foot is in the plantar flexion), Tianchi of the pericardium (on the chest, in the 4th intercostal space, 1 *cun* * lateral to the nipple and

5 *cun* * lateral to the anterior midline), Guanchong of the triple warmer (on the ulnar side of the distal segment of the 4th finger, 0.1 *cun* * from the corner of the nail), Tongziliao of the gall bladder (on the face, lateral to the outer canthus, on the lateral border of the orbit), and Dadun of the liver (on the lateral side of the distal segment of the great toe, 0.1 *cun* * from the corner of the toenail). When manipulating, massaging and tapping, Qi must be introduced by thought, and follow the in-and-out order of the twelve meridians. If coordinated with manipulating the Yuan acupoints of the twelve meridians, better effects will be achieved, for Yuan acupoints are a source in moving the kidney Qi, and they are the basis of the twelve meridians, the beginning power of human life and the important acupoints in adjusting the internal organs. The Yuan acupoints are: lung meridian Taiyuan (at the radial end of the crease of the wrist, where the pulsation of radial artery is palpable), the large intestine Hegu (on the dorsum of the hand, between the 1st and 2nd metacarpal bones, and on the radial side of the midpoint of the 2nd metacarpal bone), spleen meridian Taibai (on the medial border of the foot, posterior and inferior to the 1st metatarsophalangeal joint), stomach Chongyang (on the dome of the instep of the foot, 3 *cun* * from the Xianggu point), heart Shenmen (on the wrist, at the ulnar end of the crease of the wrist, in the depression of the radial side of the tendon of the ulnar flexor muscle of the wrist), the small intestine Wangu (on the ulnar border of the hand, in the depression between the proximal end of the 5th metacarpal bone and hamate bone, and at the junction of the red and white skin), kidney Taixi (on the medial border of the foot, posterior to the medial malleolus, in the depression between the tip of the medial malleolus and the Achilles tendon), bladder Jingu (on the lateral side of the

foot, below the tuberosity of the 5th metatarsal bone, at the junction of the red and white skin), the pericardium Daling (at the midpoint of the crease of the wrist, between the tendons of the long palmar muscle and radial flexor muscle of the wrist), triple warmer Yangche (at the midpoint of the dorsal crease of the wrist, in the depression on the ulnar side of the tendon of the extensor muscle of the fingers), liver Taichong (on the instep of the foot, in the depression of the posterior end of the 1st interosseous metatarsal space) and gall bladder Qiouxu (anterior and inferior to the external malleolus, in the depression lateral to the tendon of the long extensor muscle of the toes).

Skin massage all over the body should follow the running direction of the meridians, "Hand Sanyang runs from hand to head, hand Sanyin from chest to hand, foot Sanyang from head to foot and the foot Sanyin from foot to abdomen." The following six meridians should be stressed: the spleen, stomach, liver, kidneys, Ren and Du, for the spleen and stomach are the sea of Qi and blood, the liver and kidneys the source of energy, and blood and Reng Du the sea of Yin-Yang bloodvessels. (see figure 20-1)

3) Beauty Gong

Countenance is an external mirror of human body. It is a part in which the appearances of Qi and blood centralize. Every small external change is a sign of change inside the body. Particularly the condition of the face potentially influences senility and relates physical decrepitude. Human psychology interacts with physiology. Psychology can promote physical decline and delay the process as well. So, maintaining facial beauty plays a subtle role in preventing the decline of the whole body. Therefore preventing the decrepitude of the face is of great importance.

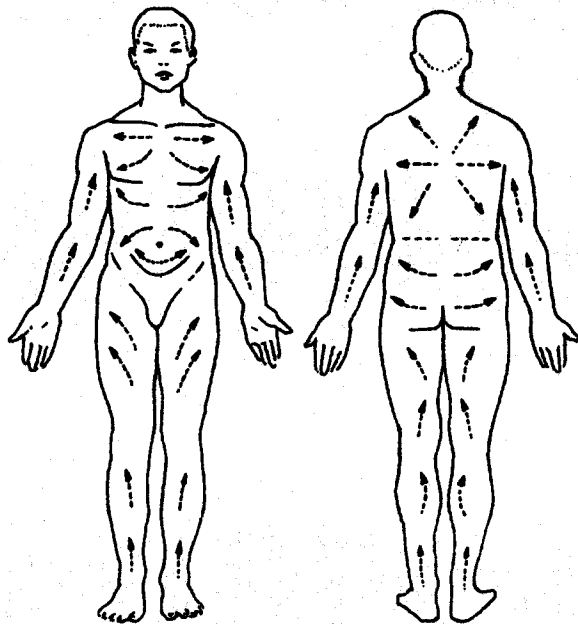


Figure 20-1 Massage on the skin and the internal organs

Besides sports concerning the body, exercises for facial beauty are necessary in order to prevent facial decline. Facial beauty exercises must be based on the meridians. The face is a gathering point for meridians, as in *Xie Qi Zang Fu Bing Xing* in *Spiritual Pivot*. "Twelve channels, three hundred and sixty five Luos, their blood and Qi all run up to the face and penetrate through the seven holes." Among them are, foot Yangming stomach meridian, hand Shaoyin heart meridian, hand Taiyang small intestine meridian, foot Sun bladder meridian, foot Sun gall bladder meridian and hand Shaoyang triple warmer meridian. Their meridian Qi all run to the face. The foot Yangming stomach meridian has plentiful Qi and blood. Its cir-

culatory area is the widest. So, *Shang Gu Tian Zhen Lun* in *Plain Questions* says, "Women ... 35, Yangming channel declines, face begins to decline. ... Men ... 48, face dry." This means that facial decline becomes the sign of decrepitude when women are thirty-five years old, and men forty-eight. Because of this, to achieve the health and beauty of the face, stress should be laid on meridians, especially on the foot Yangming stomach meridian.

Method:

With meditation guiding Qi, massage, tap, and manipulate the vital points along the run of the facial meridians. The thought guidance should be based on the circulation of the twelve meridians and more attention should be paid to the meridians that circulate through wider areas, such as the meridians of foot Yangming stomach, hand Taiyang small intestine and hand Yangming large intestine. Massage should be done along their course of the meridians or along their distribution, the course of the channels and the muscles. (see figure 20-2)



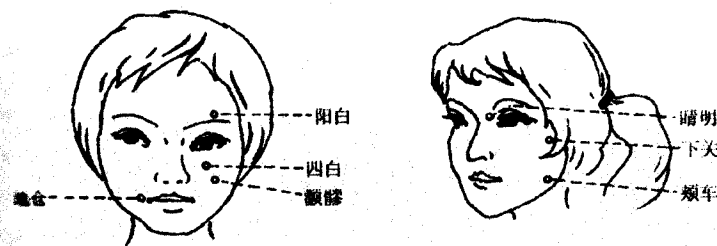
Figure 20-2 Massage on the face

Manipulate Vital Points: Zusanli (gathering point foot Yangming stomach meridian, on the anterior lateral side of the leg, 3 *cun** below Dubi, one finger breadth from the anterior crest of the tibia) does good to promoting stomach functions. Sanyinjiao (on the medial side of the leg, 3 *cun** above the tip of the medial malleolus, posterior to the medial border of the tibia) is an acupoint of the foot Taiyin spleen meridian, having good effects on the function of the spleen and stomach. It can also adjust the balance of Ying and Yang. Hegu (hand Yangming large intestine origin acupoint, on the dorsum of the hand, between the 1st and 2nd metacarpal bones, and on the radial side of the midpoint of the 2nd metacarpal bone) adjusts the Qi and blood in the head and face. Sibai (foot Yangming stomach, on the face, directly below the pupil, in the depression of the infraorbital foramen) can adjust the Qi and blood in the head and face as well as brightening the eyes. Quanliao (hand Taiyang small intestine, on the face, directly below the outer canthus, in the depression below the zygomatic bone) can adjust facial blood and Qi. Yangbai (food Shaoyang gall bladder, on the forehead, directly above the pupil, 1 *cun** above the eyebrow) adjusts the Qi and blood in the forehead. Dicang (foot Yangming stomach, on the face, directly below the pupil, beside the mouth angle) plays a role in improving the Qi and blood of the mouth, lips and jaw. Xiaguan (foot Yangming stomach, on the face, anterior to the ear, in the depression between the zygomatic arch and mandibular notch) can adjust facial Qi and blood. Jiache (foot Yangming stomach, on the cheeks, one finger breadth anterior and superior to the mandibular angle, in the depression where the masseter muscle is prominent) effect the face and facial nerves.

The above nine acupoints, six on the face, three on the limbs.

are easily found. manipulate and press until you feel a tingle, then Qi is obtained and it is best to stop the practice. If such manipulation is regularly practiced, the effects of facial beauty can be achieved.

The effect will be better if the hands are warmed before massaging, manipulating, and pressing the acupoints. Some predecessors advocated rubbing the face with saliva. This can be taken as a reference. (see figure 20-3)



Figur 20-3 Facial acupoints for manipulation

Notes to this figure:

阳白 Yangbai 四白 Sibai 地仓 Dicang
 睛明 Jingming 下关 Xiaguan 颊车 Jiache
 颊髎 Quanliao

(Translated by Li Ge)

Chapter Twenty-one

Book of Changes and the Three Basic Laws of the Universe

The Grand Terminus, the Eight Trigrams, the He Map, and the Luo Writing are miniatures of the laws of the universe.

The Grand Terminus, the Eight Trigrams, the He Map and the Luo Writing contain three basic laws of the universe: the laws of the unity of time and space, the unity of motion and relative rest, and the unity of Yin-Yang opposites.

Section 1 The Unity of Time and Space and the Holistic View of the Grand Terminus, the Eight Trigrams, the He Map and the Luo Writing

Ai Siqi, a Chinese philosopher said, "The motion of matter shows in time and space, which are the existing form of matter. There is no matter motion beyond time and space, and there are no time nor space that has nothing to do with matter motion."

Time and space are objective reality. The belief in the objective reality of time and space is the standard for distinguishing materialism from idealism. There is no matter existing alone beyond time and space, and there is no time nor space which has nothing to do with matter motion. As Lenin said, "There is nothing in the world

except moving matter, and moving matter can only move in time and space." Time represents the speed of matter motion, both time and space are endless. Time cannot go backwards, space cannot appear again. The past cannot return, so time and space are always new.

The Grand Terminus, the Eight Trigrams, the He Map and the Luo Writing embody a concentrated reflection of the relation between time, space and matter, of the basic law of the universe, which is the unity of time and space.

What is the unity of time and space in the universe? Time and space are combined into one and cannot be separated. Without space, there is no time; without time, there is no space. Neither time nor space can exist alone. It is matter motion that combines time and space. So all things in the universe are moving unities of time and space. Time and space are a contradictory unity, they restrict each other and depend on each other. Matter motion would be affected if either of the two factors were ignored.

Time and space are not only the factors helping to bring about matter motion, but the factors hindering matter motion. People often pay attention to the sense of time, but ignore the sense of space. In fact, the sense of space has more influence on matter motion than the sense of time does. For example, the space of the earth is fairly large, but it still limits the development of human beings. Here is another example, space often becomes an important factor affecting work speed. Therefore, people should pay attention to both time and space and must not ignore them. The fact that time and space supplement each other in matter motion is the key to the development of everything.

What is the universe? The universe is the general call for all

things in the world. So the view of the universe is also called a world outlook. *Huai Nan Zi: Customs of Qi State* (《淮南子: 齐俗训》) says that the time from past to now is called Yu (宇), the space of four directions is called Zhou (宙) [Yu Zhou is the universe]. The book *Guang Yun* (《广韵》) defines Yu as "immense". The book *Yu Pian* (《玉篇》) says, "The master said four directions in the world are called Yu." It also defines "Zhou" as "occupying, Xu Yu said that the world was occupied by all things." In the book *Explaining Words* (《说文》), the universe is compared to a wheel in continual motion. So the universe means not only boundless space, but endless time as well. The universe is a comprehensive concept that includes all things in the world, boundless time and space. The universe is a general call for both time and space. That is to say, the universe is the unity of time and space.

The universe is endless and boundless both in macrocosm and microcosm. In microcosm, the universe is infinitesimal. Men have discovered molecules, atoms, electrons, protons, ions The macrocosm is infinitely great. Men have observed a point 15 billion light-years from the earth. (A light-year is the distance light travels in a year. It is about 9.4605 billion kilometers). Of course, from the point of view of philosophy, the universe should be infinitely great and can be divided into smaller parts. But no one can prove this is objectively true.

The feature of the Grand Terminus, the Eight Trigrams, the He Map and the Luo Writing is that they are miniatures of the law of the unity of time and space in the universe. They each reflect the time-space relation of matter motion.

There are two poles on the map of the Grand Terminus, the Yin Pole and the Yang Pole. From the point of view of time, the

period from the Yin Pole to the Yang Pole, then from the Yang Pole to the Yin Pole represents a whole day, the period from midnight to noon, then from noon to midnight. It also represents the four seasons of a year, from the Winter Solstice to the Summer Solstice, then from the Summer Solstice to the Winter Solstice. From the point of view of space, the Yin Pole represents north, the Yang Pole represents south. The directions between the Yin Pole and the Yang Pole are east and west. The four corners on the map represent northeast, southeast, southwest and northwest. The map also shows the different solar terms in four seasons: the Spring Equinox, the Autumn Equinox, the Summer Solstice, the Winter Solstice, the Beginning of Winter, the Beginning of Spring, the Beginning of Summer, and the Beginning of Autumn. That is to say, Lao Yin ☵ represents the Winter Solstice, Lao Yang ☲ represents the Summer Solstice, Shao Yang ☱ represents the Spring Equinox, Shao Yin ☴ represents the Autumn Equinox.

The Sixty-four Hexagrams Exhibited in a Square is the miniature of the law of unity of time and space in the universe, too. For example, in the Early Arrangement of Fu Xi, the trigrams from Fu (Returning) to Qian (the Creative) represent spring and summer; the trigrams from Gou (Encountering) to Kun (Receptive, Resting in Firmness) represent autumn and winter. The Eight Trigrams also have a strong sense of space and direction: Kun (Receptive, Resting in Firmness) is the Winter Solstice, is north; Lin (Approach, Symbol of Advance) is the Spring Equinox, is east; Qian (the Creative) is the Summer Solstice, is south; Dun (Retreat) is the Autumn Equinox, is west. In the *Later Arrangement of King Wen*, Kan (the Perilous Pit) is the Winter Solstice, representing north; Zhen (Thunder, Exciting Power) is the Spring Equinox, representing

east; Li (the Clinging) is the Summer Solstice, representing south; Dui (Joy, Pleasure) is the Autumn Equinox, representing west.

The He Map and the Luo Writing also carry the information of unity of time and space in the universe. They are not only the symbols of time passing in four seasons of a year or time passing in day and night, but also symbols of space in eight directions. For instance, number one on the lower part of the Luo Writing represents the Winter Solstice, cold weather, and north; number three on the left represents the Spring Equinox, warm weather and east; number nine on the upper part represents the Summer Solstice, hot weather and south; number seven on the right represents the Autumn Equinox, cool weather and west. So, the Luo Writing tallies with the *later arrangement of Eight Trigrams by King Wen*. The feature of the Luo Writing is that the eight directions of it are very clear. So the Luo Writing cooperating with the Eight Trigrams is used by *Yi Wei* (《易纬》) and TCM to forecast weather, direction, climate and other natural phenomena of a season.

The He Map is also a miniature of the unity of time and space in the universe. Number one on the lower part of the He Map is the number of water, representing north, the Winter Solstice, cold weather, things being stored; number three on the left is the number of wood, representing east, the Spring Equinox, warm weather, things beginning to grow; number seven on the upper part is the number of fire, representing south, hot weather, the Summer Solstice, things growing; number nine on the right is the number of metal, representing west, the autumn, things being harvested.

In short, the time and position shown in the Grand Terminus, the Sixty-four Hexagrams Exhibited in a Square, the He Map and the Luo Writing tally with the movement of the sun and reflect the

time-space relationship of the system of the sun, the earth and the moon. They contain the knowledge of calendar, weather, climate, direction and phenology, and symbolize the unity of time and space in the universe. The main difference is that the Grand Terminus shows the unity with the combination of Yin-Yang fish; the Eight Trigrams reflects the unity with trigrams and Yao; The He Map and the Luo Writing symbolize the unity with numbers. These reflect the features of *Book of Changes* by illustrating principles through images and numbers.

The Grand Terminus, the Eight Trigrams, the He Map and the Luo Writing also cooperate with each other to increase their illustrating ability. For example, the Grand Terminus and the Eight Trigrams form the Sixty-four Hexagrams Exhibited in a Square. The Luo Writing and the *later arrangement of Eight Trigrams by King Wen* form the Nine Gong-Eight Feng Map (九宫-八风图), which illustrates time and space more easily. Based on these, *Yi Wei* (《易纬》) created the Tai Yi Jiu Gong Map (太乙九宫图), which is used to divine astronomical phenomena, climate and human activity. This is the foundation of later practices of divination. TCM also created the Nine Gong-Eight Feng Map (九宫-八风图), which can be used to forecast astronomical phenomena, climate, activity, and disease, and is very important for Time Medicine of TCM and Positional Medicine of TCM.

Appendix: The Eight Trigrams' orientation is a miniaturation of the time-space relationship in the universe.

The clear orientation in the Eight Trigrams is a miniaturation of the interrelation of matter motion in the universe. The structure of four directions and four corners in the Eight Trigrams contains

the law of matter motion. In microcosm, the map of the Eight Trigrams is identical to the symmetry structure of the hadron composite. There are eight electrons at the outer level of the periodic table of elements, and the map of Sixty-four Hexagrams Exhibited in a Square resembles the arrangement of the genetic codes. In macrocosm, the Eight Trigrams tally with the eight phases of the moon.

Celestial bodies in the solar correspond with the Eight Trigrams orientation, which was discovered by Liu Zihua in 1930. He worked out the orbit of the tenth planet. Its average orbital speed is two kilometers per second; its density is 0.424 grams per cubic centimeter; the average distance from it to the sun is 70 billion kilometers (*The Grand Terminus, the Eight Trigrams an Modern Science, Zhi Xuze*).

Although there was still a dispute about the existence of the tenth planet, Liu Zihua, who used the Eight Trigrams orientation theory instead of Newton's law of gravitation, predicted the existence of the tenth satellite of the sun. This shows the bright future of the Eight Trigrams' orientation theory in the objective space world.

Section 2 The Unity of Motion and Relative Rest and Balance View of The Grand Terminus, The Eight Trigrams, the He Map and the Luo Writing

The Grand Terminus, the Eight Trigrams, the He Map and the Luo Writing reflect the unity of motion and rest in the universe.

Motion is eternal, absolute, and unconditional; while rest is temporary, relative and conditional. The unity of motion and relative rest is actually the unity of motion and balance. If we did not admit the existence of rest, that would cancel the essential stipulation of things. In that way, the existence of things would be denied, which would lead to idealism.

Balance and life are connected. The quintessence of unity of motion and relative rest is balance; relative balance. Balance is an important form of matter motion. Balance exists in everything, it is an essential condition of the existence of life. This unity is reflected in *Book of Changes*.

What is balance? Engels said, "Balance is attraction exceeding exclusion. ... Balance cannot be separated from motion."

The Grand Terminus, the Eight Trigrams, the He Map and the Luo Writing reflect the balance theory stating that balance exists in motion, motion exists in balance. Balance is active and dynamic, not static, nor absolute, but relative. It is a balance on the whole, not a balance in all parts. The balance on the whole is developed from the countless unbalance in parts.

The Map of the Grand Terminus shows the growth and decline of Yin and Yang with the S curve. Only the central point in the S curve is in balance, all other points are unbalanced; only the line passing through the central point is in balance, other lines are not in balance. So the map of the Grand Terminus is in balance on the whole, the Yin and Yang movement in each part is always changing, only the central point S_1 in the S curve is in balance. (See figure 21-1)

This picture proves that the map of the Grand Terminus contains the profound philosophical theory of Yin-Yang balance, that is

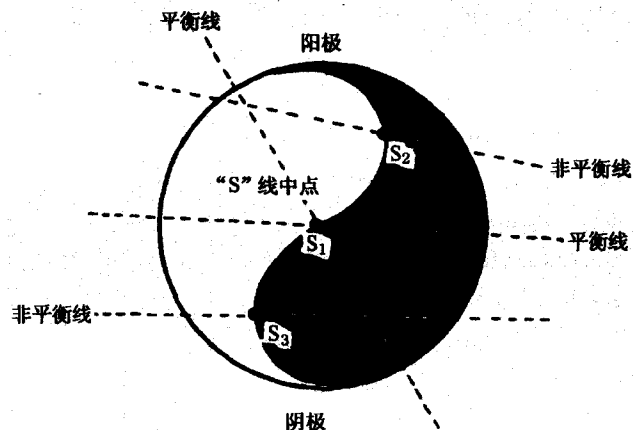


Figure 21-1 Sketch Map of Balance of the Grand Terminus

Notes to this figure:

平衡线: balanced line 非平衡线: unbalanced line

S线中点: central point in "S" curve

阳极: Yang Pole 阴极: Yin Pole

to say, it is in balance in a stable position, such as the central point on the S curve. It is not in balance in unstable positions, for example, points in the S curve with the exception of the central point, such as points S_2 , S_3 . So the balance mentioned in *Book of Changes* is a balance developing as unbalance - balance - unbalance, the balance is active, changing.

Balance in the Map of the Sixty-four Hexagrams Exhibited in a Square is reflected by the arrangement of Yin and Yang linear signs. There are six circles on the map of the Sixty-four Hexagrams, balance of each circle forms the balance on the whole. Each of the six circles is composed differently, but all are arranged in balance; the tightness of the arrangement is amazing.

The He Map and the Luo Writing reflect the balance theory with the arrangement of numbers. The sense of direction and position is very clear, especially in the Luo Writing, the total number a cross is 15, and the vertically the total number is 15. They can make up different square formations, which are in balance. So the square formations are called "balanced magical squares".

The balance theory in *Book of Changes* is composed of two parts: changing (motion) and changeless (relative rest).

I. Changing - the basic law of movement in the universe

Change is not only the title of the book, but the core of the book. Change means altering, which contains the three principles of the movement and change of things.

Yi (易), change, has several meanings: changing, changeless, simple and trading, which are the four views of the universe in *Book of Changes*. The core of the four views is the interaction of Yin and Yang. Yi (易) also can be explained as the sun and the moon. The sun is Yang, the moon is Yin, they symbolize that all things in the universe come from the interaction of Yin and Yang. As it was said in *Explaining Words* (《说文》), "the sun and the moon are Yi, symbolizing Yin and Yang." So Yi means that things are moving, changing and developing.

The motion of Yi means the interaction of Yin and Yang. As in the *Great Treatise on Yi*, "Yin and Yang form the truth," which means things in the universe come from motion. That is the greatest idea in *Book of Changes*. Motion is the source of things and life, the origin of celestial bodies and stars.

II. Changeless - an important form of existence of universal motion

Changelessness is one of the main elements of Yi. The book Yi

Wei: Qian Zao Du (《易纬：乾凿度》) explains the meaning of Yi as "simple, changing and changeless". So changing and changeless are two basic meanings of Yi in *Book of Changes*.

The view of motion in *Book of Changes* is the unity of change and changelessness. Changelessness means the relative rest of things, which is the condition of differentiation of things, and the essential condition of life moving. The unity of change and changelessness is the marrow of *Book of Changes*. Change is absolute and eternal. Changelessness is relative, temporary. The unity of change and changelessness, or the unity of motion and relative rest, is the condition for balance. Since motion and rest are opposites, there is between them an inter-dependence and inter-restrain that puts them in a state of unity. For example, Tai trigram (Peace) indicates that only when heaven and earth are in harmony, is nature in peace, while Pi trigram (Stagnation) indicates that if heaven and earth are not in harmony, balance will be broken. Ji Ji trigram (Completion) indicates that fire and water must be in harmony, then communication can be in balance. So balance in *Book of Changes* is shown with the harmony of Yin and Yang, fire and water, hardness and softness. The *Great Treatise on Yi* says, "Movement and rest are regular qualities (of their respective subjects). Here is the definite distinction as the strong and weak." This also reflects the interrelations of motion and rest. That is to say, balance is the result of the unity of motion and rest, it is relative, dynamic and developing.

The balance view in *Book of Changes* has influenced other subjects. Within the social sciences, the balance view is the foundation of Confucianist doctrine of the mean. Confucius' idea "overdoing equals as not doing" is an important rule of his social outlook. In addition, the balance theory also influences the natural science, espe-

cially TCM. For example, *Plain Questions: Qi Jiao Bian Da Lun* (《素问：气交变大论》) says, "The core of Five Yun is adjustment, when high, restrain it, when low, raise it; adapt oneself to the new conditions, try to rest, restore to normal when it changes." This emphasizes that there exists an adjusting power in nature. This miraculous power stabilizes climate and that is the essential condition for the existence of life. This power also exists in the human body and makes the body maintain balance. For example, the Qi (vital energy) and blood in the body, and Yin and Yang in the internal organs, are all in balance. This balance view of the body is carefully explained in the *Seven Articles of Yun Qi of the Emperor's Canon of Medicine* (《黄帝内经：运气七篇》). For example, *Plain Questions: Xue Qi Xing Zhi Pian* (《素问：血气形志篇》) says, "There is normal stable blood and Qi for people. Tai Yin means more blood but less Qi; Shao Yang means less blood and more Qi. Yang Ming is more Qi and blood, Shao Yin is less blood and more Qi, Que Yin is usually more blood and less Qi, Tai Yang usually means more Qi and less blood. These are very common, which shows the blood and Qi and channels are in balance externally and internally. In changes, the amount of energy and blood is called "heavenly constant", the balance of Yin and Yang is a natural principle, which can apply to human internal organs. For example, *Spiritual Pivot: Shi Zhong* (《灵：始终》) says, "Five Zang are Yin, six Fu are Yang." *Plain Questions: Jin Gui Zhen Yan Lun* (《素问：金匱真言论》) says, "The back is Yang, and Yang within the Yang is the heart. The abdomen is Yin, and Yin within Yin is the kidneys."

Balance is a means to survive, men's balance ability is the result of hundreds of millions of years of evolution, the result of natural selection. Men's balance ability is shown not only in physiology but in

psychology. Humans psychological balance is the result of many years of practice in a complicated social environment. In some conditions, it is more difficult to keep balance in a social survival environment than in a natural survival environment. If men had no psychological balance ability, which other creatures do not have, men could not have overcome all the difficulties in society.

Appendix: Balance Medical Science

TCM is the earliest balance medical science. It has absorbed the balance view in *Book of Changes*, reformed it and then created the balance medical science which has been used to treat patients, to regulate energy, to create prescriptions, and to use medicines, while treating a patient. Thus the ecological balance in the body is emphasized, the sign of an unbalanced state is noticed, and the unbalanced state is corrected. The purpose of these methods is to restore the ecological balance in the human body.

The body's strong adaptability often leads to abnormal balance in the body. The abnormal balance includes two states, the negative state and the over-positive state, both are harmful. From the point of view of social psychology, negative balance makes people content with temporary ease and comfort, while the over-positive balance makes people arrogant and self-conceited. Although these two states of mind are abnormal, they are means for men to survive.

Those two kinds of abnormal balance also exist in pathology. The harm is that they cover the progress of the inner disease.

The negative balance in the body is often caused by a deficiency of Yin or Yang. The negative balance state may last a long time due to the human body's strong endurance, which creates conditions for many hidden diseases to appear. When the diseases are discovered, the best time to cure them has already been missed. For example,

the negative balance of the kidneys caused by deficiency of kidney-Yang may last many years because of the human body's adaptability. When it is discovered, the body's ability to compensate has been nearly lost.

The over-positive balance state is often caused by hyperactivity of Yin or Yang. Although this state cannot last as long as the negative state of balance, it may also cover the progress of certain hidden disease. When the disease is found, it has reached an advanced stage. For example, the early signs of hyperfunction of some diseases caused by endocrinopathy, such as hyperthyroidism and hyperadrenalism are often covered by the adapting means of the body, when the diseases are discovered, the health has been irreparably damaged.

So all these balances, no matter in psychology or in physiology, negative or over-positive, prove that balance is the condition for life activity. Life activity is an everlasting progress, which cannot be separated from relative balance. New balance is often developed from inbalance, then new balance is broken, so new life is produced and developed. In this way, the balance theory of *Book of Changes* can be applied to the motion rule of all things in the universe.

Section 3 The Unity of Yin-Yang Opposites and Motion View of the Grand Terminus, the Eight Trigrams, the He Map and the Luo Writing

Book of Changes: Yi Zhuan (The Commentaries), the Grand Terminus, the Eight Trigrams, the He Map and the Luo Writing all

contain the philosophical theory of Yin-Yang motion. The unity of Yin-Yang opposites is reflected by the interaction of Yin and Yang.

The core of the unity of Yin-Yang opposites is that the interaction of Yin and Yang produces motion. Motion produces all things, so the nature of life is motion. This idea appears in the book *Great Treatise on Yi* in which it says that "the successive movement of the inactive and active operations constitutes what is called the course of things. Heaven and earth existing, all things then get their existence ... there is an intermingling of the genial influence of heaven and earth, and transformation in its various forms abundantly proceeds." Life is the existing form of matter in motion, there is no motionless life, nor motionless matter. Motion is the basic nature of matter. *Book of Changes* observed the nature of matter three thousand years ago, the idea that the motion of heaven and earth produced all things is very great.

The unity of Yin-Yang opposites in the map of the Grand Terminus is shown by the combination of Yin-Yang fish. On the map Yin and Yang are opposites, but they tightly form a unity in the circle. That is the miniature of Yin-Yang interaction in the universe. Though the map is simple, its meaning is profound. The map illustrates the motion law of the universe only with a circle and a curve. Its conciseness and distinctness are really amazing.

In the Sixty-four Hexagrams Exhibited in a Square, the Yin and Yang linear signs are obviously opposites to each other, but they form a closely linked unity of Yin and Yang. The trigrams, which are made up of differently arranged Yin and Yang linear signs, form a harmonious unity of Yin and Yang. The harmony of its arrangement is excellent.

The He Map and the Luo Writing are also miniatures of the

unity of Yin-Yang opposites, which is shown by odd numbers and even numbers. Its unity is in the form of a square within a circle, a circle within a square. Among the numbers which represent the five dimensions (east, west, south, north and center), the odd numbers correspond to the even numbers except number five in the center of the He Map. The four directions on the He Map and the Luo Writing are represented by odd numbers, the four corners are represented by even numbers. So the arrangement of odd numbers and even numbers illustrates the unity of Yin-Yang opposites.

The unity of Yin-Yang opposites is also based on the growth, decline and transform of Yin and Yang. The unity is reflected by an interdependent and interrestraining relation of Yin and Yang. The interaction of Yin and Yang produces motion, the motion of Yin and Yang produces all things. That is the basic law for the production of everything in the universe.

In brief, the Grand Terminus, the Eight Trigrams, the He Map and the Luo Writing illustrate the interaction of Yin and Yang; they are miniatures of the three basic laws in the universe and have directive functions for matter motion in the universe. This proves the theory in *Book of Changes* is a common law in the universe. So *Book of Changes* is really a comprehensive expression of the first half period of the 6,000 years of history of the Chinese culture.

(Translated by Wu Lifang)

Chapter Twenty-two

The Holistic Existence of the Grand Terminus (Taiji) and the Eight Trigrams in the Whole Cosmos

Section 1 The Definition of Holisticism and Its Source

Holography is a new technique employed in photography, which is uniquely superior in picture-taking. It is different from photography in the common sense in that pictures taken through holography are made up of light waves of objects other than their real images. The original object can reappear through mere illumination of the record even though it is out of existence. The huge amount of information stored in the holographic picture can be recorded. It is, therefore, no exaggeration to say that one holographic picture has the same value as one thousand photos added together. That amounts to the conclusion that there exists the concept of time in holographic pictures, which can historically reconstruct

the original shape.

The earliest holographic idea was later developed into holography. In the 1960s, new holography was invented, which suggested that a bird's-eye view of the holographic image can be achieved through a very small window, or, in other words, a small organic part contains the complete whole. Thus the holographic picture is endowed with the concept of space.

The theory of holisticism is exemplified in the holographic technique used in photography, borrowing mainly the spatio-temporal principle. Accordingly, the theory of holisticism is in possession the function of reproducing the original shape and the property of surveying the whole through any of its component parts. That is to say, the theory of holisticism is of entirety and of historical nature.

Written some 3,000 years ago, *Book of Changes* is rich in holistic ideas. The sixty-four hexagrams in *Book of Changes* constitute a general holistic unit, making a holistic miniature of the first half of the 6,000-year-long Chinese civilized history and having stored all the cultural information accumulated during that stage. The changing and evolving history of social science, natural science, ideology and culture is all packed and minimized into *Book of Changes* with hardly anything excluded. And every hexagram in *Book of Changes* is a sub-holistic unit representing the general one. Qian (the Creative) and Kun (Receptive), for example, both contain, so to speak, the essence of the variation theory in *Book of Changes*. Every Yao (the linear line composing Gua) is in turn an even smaller holistic unit storing information of the whole.

The Eight Trigrams in all make up the cosmic holistic unit, and the whole sequence of hexagrams is an overall holistic picture of ancient China. Gua Ci (judgement to the hexagrams) and Yao Ci (the

text pertaining to the individual lines) in *Book of Changes* are an all-embracing and sweeping view that can be obtained by casting a mere glance. The Taiji (the Grand Terminus) Map and the arrangement of the trigrams are both holistic epitomes of the cosmos. Concentrated on them are the fundamental laws of the cosmos, such as that of Yin-Yang interdependence, of Yin-Yang movement and transformation, of Yin-Yang balance. The reason the Taiji Map and the arrangement of the trigrams coincide with natural motion laws lies in their holistic nature. According to the *Great Treatise on Yi*, "Wide is the *Yi* and great! If we speak it in its farthest reaching, no limit can be set to it; if we speak of it with reference to what is near at hand, its lessons are still and quiet; if we speak of it in connection with all between heaven and earth, it embraces all."

A bird's-eye view of Taiji and the Eight Trigrams theory shows that they apply everywhere, from the macrocosmic to the microcosmic, from the simple to the complicated, from the junior to the senior, and are, indeed, "wide and great".

Composed about 2,000 years ago, the *Emperor's Canon of Medicine* laid a foundation for TCM and did a great deal in the development of holistic theory. In the chapter entitled *Spiritual Pivot: Five Colors* (《灵枢: 五色》), for instance, the fact is revealed that the five sensory organs contain information of the five internal organs. "The nose is high and upright. The five internal organs are in the middle and the six bowels lie on its two sides". Hence the nose and its two sides comprise the overall information of the internal organs. Beyond that, it was also pointed out that the face, eyes, the pulse, the temple, the tongue and forearms all reveal the conditions of the internal organs. On the basis of this, the well-known statement was put forth that "the inside corresponds to the outside;

the upper to the upper; the lower to the lower; the middle to the middle", which laid the foundation for the diagnostics of TCM (see Chapter Twelve *Book of Changes* and the Science of Human Life, especially figures 12-1 ~ 12-12). The diagnostic methods proposed in the *Emperor's Canon of Medicine* are, in reality, holographic. They have sufficiently expounded the holistic principle.

In the fifteenth century, Hippocrates, father of Modern Western medicine, pointed out that what was in the largest bodily part was as well in the smallest, and that one's eyes are signs of his physical conditions. Once again, we see holism.

As early as the 16th century, Charles Darwin noticed the relationship between part and whole. The 18th century saw a certain American scientist find the holistic function of the plant cell, namely, each plant cell contains all the genes needed to produce the complete plant. Under certain conditions, this cell may develop into the stem of the plant. An eighteenth-century German biologist advanced the biogenetic law, namely, "Ontogenesis is the simple and speedy reproduction of specio genesis" (*Universal Biological Ecology* 1866). A Hungarian scholar found in the following century on the iris 30-41 location spots of tissues and organs.

In the 1950s, Nogier P. Horn in France, noticed that auricle was an embryo standing upside down. Hence the ear acupuncture therapy was invented.

The scholars in the U. S. and Japan have found the visceral projection parts on the palm and the sole.

In 1980, Zhang Yingqing discovered the holistic distribution of acupoints on the second metacarpal bone. Afterwards he formally put forward the theory of biological holism, holding that any small component part in an organism is representative of the whole.

Based on his findings, he went on to advance such concepts as holistic embryo, pan-embryo, and so on. By holistic embryo, Zhang pointed out, it was meant an embryo in an organism, which was on a certain stage in its development toward a new whole. Holistic embryos are holistically distributed in an organism. Any relatively independent part is a holistic embryo, which is relatively complete in structure and function, and which is relatively and clearly separated from its surrounding parts. A real holistic embryo is the one capable of developing into a new complete whole. The pan-embryo theory means that each holistic embryo in an organism is able to develop into a whole and, under certain conditions, evolve into a new individual. In another words, every cell in an organism contains all the genetic information of the whole, and, is likely to develop into a complete individual.

From the historical development of holism both at home and abroad it can be inferred that *Book of Changes* comprises the earliest cosmic holistic principles and is, as it were, the most primitive embryo of holism.

Section 2 The Holism of Taiji and the Eight Trigrams in *Book of Changes*

The holistic law of Taiji and the Eight Trigrams presented in *Book of Changes* is the Yin-Yang theory. The waxing and waning of Yin and Yang, as a result of the interplay between the two, exists everywhere in everything, ranging from the simple to the complex, from the junior to the senior and from the macrocosmic to the

microcosmic. This is the fundamental theory shown in the Taiji map and the Eight Trigrams.

The Yin-Yang theory of the Taiji map and the Eight Trigrams in *Book of Changes* is the holistic law applicable to the whole universe. This very law works through Yin-Yang opposition and inter-restraint, Yin-Yang interdependence and interplay, Yin-Yang waxing and waning, Yin-Yang balancing and Yin-Yang mutual transmutation.

The holism of the Taiji map and the Eight Trigrams is sufficiently reflected in both the macrocosm and the microcosm. In biological code, for instance, we find the holism of the Eight Trigrams. Despite the fact that there are more than two million species on the earth, there is eight-trigram holism in all their genetic codes, namely, the arrangement of the RNA base triplets exhibits that of the hexagrams.

According to biogenetics, after DNA transfers genetic information to RNA, mRNA has merely four bases, which have to correspond to twenty amino acids. In the course of corresponding, which defies labeling and repeating, triplets are the most appropriate possibility. The combining order of triplet codes is in conformity with the arrangement of the hexagrams.

In addition, the four bases on RNA are composed of purine and pyrimidine, which are exactly opposite in nature. The two chemicals can be regarded as the two elementary Forms. Among the four bases, guanine corresponds to cytosine, while adenine to uracil. What occurs to the four bases is true of the four emblematic symbols derived from the two Forms, in which case greater Yang corresponds to greater Yin and lesser Yang to lesser Yin.

The variation curves of cAMP and cGMP in human cells accord

with the Yin-Yang waxing and waning Taiji Map. In 1973, Goldberger, inspired by the Chinese Taiji Map, proposed the biocybernetic "Yin-Yang Hypothesis", and noticed that the relation between cAMP and cGMP agreed with that between Yin and Yang. The afore said suffices to conclude that Taiji and the Eight Trigrams are universally existent in the micro-cosmos.

Moreover, the Taiji map and the Eight Trigrams find existence in cosmic motion laws and in comogenesis, thus providing justification for the deduction that the Taiji map and the Eight Trigrams are in the macrocosms as well as in the micro-cosmos. In brief, the Taiji map and the Eight Trigrams are everywhere and in everything throughout the whole cosmos.

Section 3 The Map of Taiji: Epitome of Cosmic Motion Laws

Considering the holism of the Taiji map and the Eight Trigrams in the macro-cosmos, we find that cosmic beings change and develop in the way Yin and Yang do in the map of Taiji, which counts as a miniature of the cosmic motion laws.

Waning and waxing of the moon, for example, coincide surprisingly with that of Yin and Yang; half of the earth is land and half is water, making a map of Yin and Yang; the recurrence of day and night and the shifting of seasons, both phenomena being caused by the movement of the earth, offer us another picture of Yin-Yang variation.

40.7 billion years ago, the primordial diffuse nebula in outer space, mother of the solar system, was as well a Taiji nebula con

sisting of the two gases of Yin and Yang.

The cosmos is round, and so are the sun, the moon, the earth, ... all heavenly bodies are round, like a round map of Taiji and with periodic waning and waxing of Yin and Yang in heart.

Another instance is the spiral movement of the galaxy. As can be seen from the following diagrams, it is very much like the spiral rotation of the Yin-Yang fish.

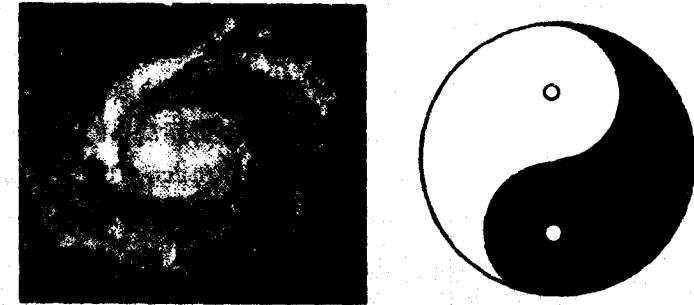


Figure 22-1: Spiral Nebula and the Taiji Map

In short, the whole cosmos presents a Taiji moving pattern and the map of Taiji can definitely be considered as a minimization of the entire cosmos.

Section 4 The Holisticism of Taiji and the Eight Trigrams in the Human Body

In the human body, there is also the holography of Taiji and the Eight Trigrams. As is pointed out in *Plain Questions: Jin Gui Zhen Yan Lun* (《素问：金匱真言论》), "As far as a human being is

concerned, the outside is Yang and the inside is Yin, to a human body, the back is Yang and the abdomen is Yin; as regards Zang and Fu (the viscera and the bowels), Zang is Yin and Fu is Yang." It is also said in *Plain Questions: Yin Yang Li He Lun* (《素问：阴阳离合论》), "Speaking of Yin and Yang, we can get a hundred of them if there are ten; if there are a thousand, we will have ten thousand; owning ten thousand enables us to possess infinity ..."

Therefore, from the Yin-Yang variation of a part we can see that of the whole. The same is true of the body. In light of Zhang Yingqing's theory of biological holism (namely, any component part of an organism embraces holistic information), information on the Yin-Yang variation of the human body can be achieved as long as it is measured as the concentration variation of the two substances: cAMP (which is positive) and cGMP (which is negative).

It is reported that the day-night changing curves of cAMP and cGMP (both belonging to cyclic nucleotide) are in correspondence to that of Yin and Yang in the human body, which provides evidence for the statement that information can be gained of the whole from any of its organic parts.

There is not only Yin-Yang holism of Taiji in the human body, but that of the Eight Trigrams as well. The eight-trigram holism finds itself in the eyes, ears, hands, face, tongue, pulse, abdomen, and so on. Apart from that, through the use of the Eight Trigrams, positioning becomes practicable. It shows the relativity and entirety of the body (see Chapter Eleven, *Book of Changes and Physiology of the Human Body*). The eight-trigram holism is extensively used in medicine. In acupuncture, massage or chiropractics, for instance, the arranging order of the trigrams and its relation to the internal organs can be used to locate acu-

points.

On the other hand, the body constitutes a big Taiji, to which the different constituent areas considered to be small Taiji belong. The two Forms of Taiji remain in the brain as well as in the five internal organs. In other words, the whole body is a combination of Yin and Yang and the component areas are small Yin-Yang combination, the knowledge of which is of great practical value in medicine. The plausible explanation should be as follows: each part of the body comprises the deviation of Yin and Yang, thus laying theoretical basis for balancing Yin and Yang in therapy.

Section 5 The Special Holistic Areas in the Human Body

According to Zhang Yingqing, in any organism are some parts which, in terms of function and structure, are relatively independent of and form a relatively apparent boundary with the surrounding areas. They are called holistic units. Each part in a holistic unit can find its counterpart in all the sister holistic units.

The human body is a general holistic unit and in it are minor ones. Although each holistic unit embodies messages of the whole, a gap does exist in the amount of information about the whole they concentrate. Despite the fact that ears, eyes, soles, the navel, the palm, etc. are all capable of offering messages of the five internal organs, the philtrum, the mouth and the nose seem more important in doing so. It follows that there are some special holistic areas in the body, in which message concentration is higher. These special holographic areas are just what the TCM uses in diagnosis.

I. Yin Yang special areas in the human body

As is pointed out in *Plain Questions: Bao Ming Quan Xing Lun* (《素问：宝命全形论》), "Human body, in essence, is made up of Yin and Yang." Another statement that matters to the point in question is from *Spiritual Pivot: Shou Yao Gang Rou* (《灵枢：寿夭刚柔》), "There are Yin and Yang both internally and externally. In the interior, the five internal organs are Yin while the six bowels are Yang; in the exterior, the tendons and bones are Yin whereas the skin is Yang." The point here is that there is Yin Yang hologram in any part of human body. Yin Yang hologram not only lies in each organic part, but in all the messages the human body initiates, such as the expression it takes on, the color it displays, the sound it emits, the pulse condition it reflects, the fluid it secretes, the waste it produces, and so on. Zhang Jingyue, a famous physician in the Ming Dynasty, once said, "Medical knowledge, although complicated, can be summed up as Yin and Yang. There is, therefore, Yin and Yang in the symptom, in the pulse condition, in the medicine, ... if one can gain access to a clear and comprehensive understanding of Yin and Yang, they will surely get most of the medical knowledge which appears so abstruse" (*Jingyue Quan Shu: Chuan Zhong Lu* 《景岳全书：传忠录》). What the book attempts to elucidate is that any part in human body exhibits Yin Yang messages of the whole. Nevertheless, the amount of holistic information stored in each unit varies considerably. Such holistic units as the pulse and the tongue are normally packed with more. The reason that in TCM the Yin Yang variation of the whole body can be perceived merely through observation of the pulse and tongue lies in the fact that TCM doctors have gained a good knowledge of the special holistic areas.

II. The special holistic areas of channels and collaterals

The channels and collaterals in human body are holistically existent. The channel system in human body falls into two types, i. e., vertical channels and horizontal channels, which run through human body in different directions, thus linking together all the messages. Therefore, the channel system, as it were, is a message stream going in all directions through human body. Each acupoint consists more or less of the messages of the whole channel system and is a window through which we can scan the holistic whole. However, the reserves of the information about the whole in each holistic channel unit are different to varying degrees. Some acupoints enjoy bigger reserves of messages about the whole. The philtrum, for instance, provides information on the vital center of the body, which justifies the use of philtrum in an emergency and in the recovery of consciousness. In the article entitled *The Twelve Cutaneous Areas*, the skin covering the body is divided into twelve parts, belonging respectively to the twelve different channels. Each of the twelve areas is reckoned to be a holistic unit, which presents a panorama of the pathological changes. *Plain Questions: Pi Bu Lun* (《素问：皮部论》) says, "The twelve channels are all connected with the cutaneous areas, ... therefore, the skin falls into parts and some serious diseases may occur if no care is given to them." The admonition is that some serious diseases will develop if we fail to perceive the pathological changes that the twelve cutaneous areas undergo. But the messages conveyed by the twelve cutaneous areas are different in degree. The distribution of inspection diagnosis in the facial skin, the five internal organs in the nose, the neighboring areas and the duricle, and the five wheels, eight walls of the eyes, and so on, all explain why the face, the head and the five sense organs are thought

of as weighty and special holistic areas. In these areas are the highly condensed messages of the five internal organs, which brings to the spotlight the relation between the part and the whole.

III . The special holistic areas of Zang Xiang

Zang refers to the internal organs while Xiang to the physiological phenomena. Zhang jingyue remarked, "By Xiang, we mean shape and phenomenon. Whereas the internal organs lie inside, shape can be perceived from the outside. Hence the term 'state of viscera'" (*Lei Jing* 《类经》). The saying prevalent in TCM "what occurs inside is bound to take on some external form" is in concordance with Zhang's statement. Therefore, in terms of the viscera-state doctrine, each holistic unit in the human body carries information on the state of viscera. For example, Cunkou pulse condition is loaded with plenty of information about the viscera, from which are mirrored many internal messages inclusive of that of the five internal organs, of the vital energy and blood, of mental state, etc. It is in this sense that pulse condition serves as the important diagnostic ground for TCM. As *Plain Questions: Jing Mai Bie Lun* (《素问: 经脉别论》) puts it, "The arteries and veins combine into choice Qi which flows through the bowels and viscera and, in the long run, arrives at the controlling place whose function is to effect a balance. The exit of Qi (i. e. Qikou) is only one Cun long, which is termed Cunkou, deciding life and death." The above quotation refers to the Cunkou condition as Qikou, implying that the Cunkou pulse condition is the special holistic area of the Qi hologram in the human body. The above discussion shows that there are innumerable holistic units, big and small, in the human body. Special holistic areas, in particular, are even more important holistic units in supplying information on the whole human body, for the reason that in these

parts the information about the whole is still more highly condensed.

To sum up, *Book of Changes* is full of the cosmic hologram of Taiji and the Eight Trigrams. This proves to be of great holistic value to the study of the laws for all beings on earth.

(Translated by Li Shaofeng)

Chapter Twenty-three

Book of Changes and the Occurrence of the Universe

Section 1 Profound Meaning of the Occurrence of the Law of Yin Yang Yao

Although the Eight Trigrams is abstruse, its basic pattern is composed of only Yang Yao (—) and Yin Yao (--), which form a single gua (trigram). The Eight Trigrams come from single guas and go on to infinity. We call it the Occurrence of the Law of Yao. The implied meaning symbolizes the occurrence of the universe, including everything from microcosm to macrocosm, from simplicity to complexity, from the primitive to the advanced. All those things come into being because of the interaction of Yin and Yang, which is the essential viewpoint about the occurrence of the universe in *Book of Changes*.

The Occurrence of the Law of Yin Yang Yao is a universal law. There is negative electricity and positive electricity in physics, anions and cations in chemistry, cAMP and cGMP in biochemistry, sperm and ovum in embryology, primordial Yin and primordial Yang in TCM, positive and negative figures in mathematics, pos-

sitive and negative poles in a magnetic field, etc. They are all composed of Yin and Yang, in turn, the interaction of Yin and Yang makes up their basic movements. Being interdependent and restraining each other, they bring about the occurrence and development of everything. That is the connotation of the Occurrence of the Law of the Eight Trigrams, Yin Yang Yao in *Book of Changes*, which generally applies to all occurrences and developments in the universe.

Section 2 The He Map and Luo Writing—the Map of the Derivation of Everything

The feature of the He Map and Luo Writing is that they symbolize the law of the derivation of everything, which is based on He and Luo, Five Deriving Figures. The Deriving Figures dwell in both the He Map and Luo Writing. He and Luo, by means of the deriving figures which correspond to them, suggest the law of the Derivation of Everything. These figures are actually the deriving coefficient of everything in the universe. The five figures, from 1 to 5, are all deriving figures. And they all direct derivation. Figure 1, the figure of water, which is extreme Yin, is the material base of everything. Therefore, it comes first among the five figures. Figure 2 is fire, which is the original force that changes everything into Qi, so fire is ranked as the second. Figure 3 is wood. Wood stands for deriving and growing Qi, and has the effect of helping development. This is the reason wood belongs to the deriving figures. Figure 4 is metal. Metal refers to ripeness, and means that everything is ripe for harvest. Among the five figures, metal comparatively represents

harvest. It has, however, the quality of derivation. The character of metal is the force that makes everything ripe. It says in *Hong Fan: Book of History* (《尚书: 洪范》), "Metal has the nature of clearing and changing." That's to say, metal features toughness and can be turned freely into something else. For instance, iron can be made into things of different shape. Figure 5 is earth, which is regarded as the mother of everything. Only from the earth can everything be derived. From what has been said above, we can draw the conclusion that the five figures all have the quality of derivation, and play important roles respectively in the derivation of everything. The five deriving figures of the He and Luo are said to be figures of promotion among the five elements in *Hong Fan: Book of History* (《尚书: 洪范》). Wood generating fire, fire generating earth, earth promoting metal, metal promoting water and water promoting wood, thus the Law of Promotions among the five elements came into being, which is both the origin of the five elements theory and an important fundamental theory of TCM.

The five deriving figures fit not only nature but the human body as well. For example, figure 1 of the He and Luo, according to the Law of Five Elements, is water. Water corresponds to the kidneys of the human body and the kidneys are the force of movement for the rising and falling of Qi. When Yang in Kan starts, the kidney Yang rises. The spleen (earth) is warmed and full of Zhong Qi. The liver (wood) gets warm and gives off Qi of occurrence, heart, fire sets in (得交) and Li Yin (离荫) falls, so it can be clearly seen that rising kidney Qi makes the body energy occur. Number "2" in the He Luo is fire corresponding internally with the heart which controls the arteries; the occurrence of heart fire means the circulation around the whole body of Ying blood (营血), which

warms and nourishes the Five Fu and Six Zang Organs, four branches and a hundred vessels, and makes life energy as prosperous as fire. Number "3" in the He Luo is wood corresponding internally with the liver, so the liver controls growth. The gallbladder is Jia wood; the liver, Yi wood. Liver and gallbladder Qi symbolize spring occurrence, Zang Qi inside the body, encouraged by the character of wood, can be filled with vitality and can have harmonious and smooth Qi and blood. Number "4" in the He Luo is metal corresponding internally with the lungs. The character of metal is the vitality for maturity, which is embodied in the lungs and it means the balance of lungs to vitality, that is to say, proper fall is for better occurrence. Number "5" in the He Luo is earth corresponding internally with the spleen. The occurrence of earth is embodied as the adjustment of earth to the rise and fall axis of Qi. Middle earth serves as the axis for Qi rising and falling. So only the normal function of the occurrence of middle earth can make the clear rise and the dirty fall smoothly, so that life activity can be completed.

In addition, the five deriving figures are used in six vital substances for the life process by the *Emperor's Canon of Medicine*, namely cold fostering water, fire converting into figure 2, wind fostering plants, dryness fostering metal, rain converting into figure 5. Although six vital substances for the life process may become six conveying food essences, and do harm to the human body, the generation and growth of everything, including the existence of human beings cannot do without them, just as it says in *Wu Yun Xing Da Lun: Plain Questions* (《素问: 五运行大论》), "heating to steam it, blowing to move it, wetting to moisten it, making it cold to strengthen it, making it warm to reheat it."

From the above analysis of the five deriving figures of He and Luo, we can note that the figures of He and Luo have general significance regarding the derivation of everything.

Section 3 Imagination About the Grand Terminus—the Eight Trigrams Deriving Law

The Grand Terminus—the Eight Trigrams Deriving Law, recorded in the *Great Treatise on Yi* is illustrated as follows: “In the system of Yi there is the Grand Terminus, which produced the Two Elementary Forms. Those two Forms produced the Four Emblematic Symbols, which again produced the Eight Trigrams.” (see figure 23-1)

The Grand Terminus, which is the combination of Yin Qi and Yang Qi, is the intermingling state before everything comes into being, just as it says in the *Great Treatise on Yi*, “There is an intermingling of the genial influences of heaven and earth, and transformation in its various forms proceeds abundantly”. (Tian di yin yun, wan wu hua chun). Here “yin yun” refers to the foremost gas state before everything comes into being, is the Grand Qi, inclusive of Yin Qi and Yang Qi. We call it the Grand Terminus because it is limitless, endless. Once Yin Qi and Yang Qi takes effect, everything can be produced. It will become objects which are limited. That’s how the Grand Terminus produced the two elementary Forms, which produced the four emblematic symbols, which again produced the Eight Trigrams. As this goes on, everything is produced. All this suggests that the production of everything results

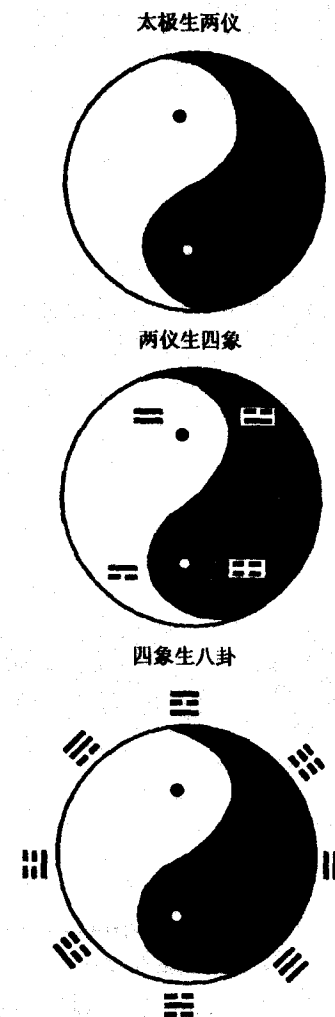


Figure 23-1 Map of occurrence of the Grand Terminus and the Eight Trigrams
Notes to this figure:

太极生两仪 The Grand Terminus produces the Two Elementary Forms

两仪生四象 The Two Elementary Forms produces the Four Emblematic Symbols

四象生八卦 The Four Emblematic Symbols produces the Eight Trigrams

from combining of Yin Qi and Yang Qi, while the development of everything depends on interaction between Yin Qi and Yang Qi. The origin of life in nature was from primitive gas, which was called "yin yun" in *Book of Changes*. The Deriving Law of the Grand Terminus—the Eight Trigrams shows that everything comes from the same unity.

The great biologist Darwin also stressed that all lives have the same origin, different kinds of creatures derive from the same kind. Hence, fish are also one of the human ancestors (from *Mystery of the Magical Dragon* by He Xin, P₂₁, Yanbian University Publishing House, 1988).

The Law of Recapitulation in evolution has proved the theory mentioned above. The Law of Recapitulation means within the short period of embryo growth, the very long process of creature evolution is repeated. Therefore, we can say that the embryo period is a holographic epitome of creature evolution. Scholars specializing in evolution believe that "life comes from life, while primitive life came from non-life", which best explains that creatures have evolved from the same origin. The Grand Terminus—the Eight Trigrams deriving law proves this theory. So we can see that the aforesaid law is a matter of science and practice.

According to the Grand Terminus—the Eight Trigrams Deriving Law, we can imagine that everything, from microcosm to macrocosm, from simplicity to complexity, from primitive to advanced, and their generating (deriving) laws can be unified under the Grand Terminus—the Eight Trigrams Deriving Law. The following is presented to analyze the macrocosm and the microcosm, so as to prove this hypothesis.

Section 4 The Origin of Life—the Deriving Law of the Grand Terminus in Microcosm

What is life? "Life is the existing form of protein" (*Opposing the Theory of Duhring* 杜林 by Engels, P₇₈). That is to say, life is the movement of protein, while protein is the material base of life.

The origin of life is one of the most important issues in biology. Besides deriving from parent(s), can life occur naturally? In the 17th century, Pasteur, as a result of his experiments and research, refuted the idea of natural occurrence. After that, probing the origin of life was abandoned for sixty years. It was not until the 20th century that people began to explore it again.

"The origin of life is a process from non-life substances to primitive life. In other words, it is a chemical advancement in the beginning." In 1876, Engels presented "the chemical origin idea". He pointed out "the origin of life is inevitably achieved by means of chemistry" (*Opposing the Theory of Duhring* 杜林, P₇₀. Edition of 1971 People's Publishing House). This is just as some scholars say, "Life derives from life, whereas the primitive life comes from non-life." (Chen Shixiang *On Species* 《关于物种主义》 in the *Animal Classification Journal* 动物分类学报 April, 1979)

Up to now the universe has had a long history of twenty million years. During such a long period, a biochemical process has taken place. (see figure 23-2)

On the issue of the origin of life, *Book of Changes* not only holds the idea of complete atheism but also pays attention to the

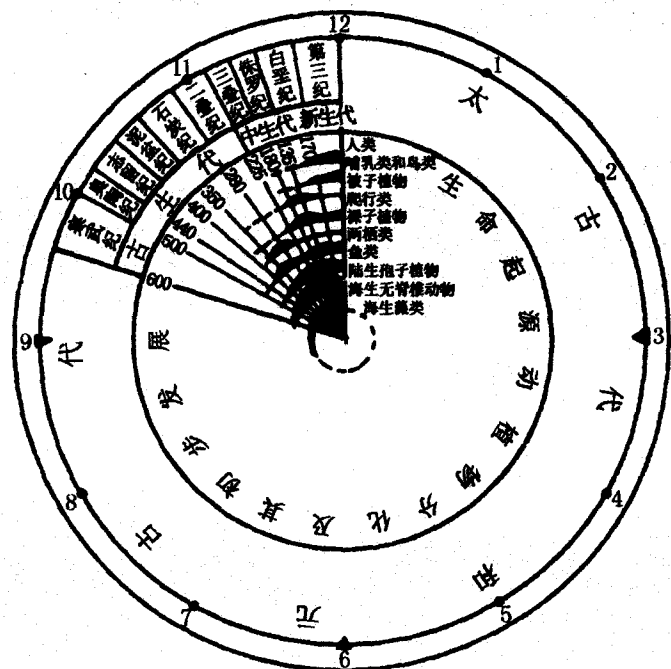


Figure 23-2 Time clock of the evolution of life in the view of historical geology

Notes to this figure:

- 太古代 Archean Era 元古代 Proterozoic Era 生命起源 origin of life
- 动植物分化及其初步发展 breakup of animals and plants and their initial development
- 古生代 Palaeozoic Era 中生代 Mesozoic Era 新生代 Cenozoic Era
- 寒武纪 Cambrian Period 奥陶纪 Ordovician Period
- 志留纪 Silurian Period 泥盆纪 Devonian Period
- 石炭纪 Carboniferous Period 二叠纪 Permian Period
- 三叠纪 Triassic Period 侏罗纪 Jurassic Period 白垩纪 Cretaceous Period
- 第三纪 Tertiary Period 人类 mankind 哺乳类和鸟类 mammals and birds
- 被子植物 angiosperms 爬行类 reptiles 裸子植物 gymnosperms
- 两栖类 amphibians 鱼类 fish 陆生孢子植物 terrestrial cryptogams
- 海生无脊椎动物 marine invertebrates 海生藻类 marine algae

primitive period of life origin. It offers the famous statement, "There is an intermingling of the genial influences of heaven and earth, and transformation in its various forms proceeds abundantly" (Tian di yin yun, wan wu hua chun). Here "yin yun" refers to the gas flying phenomenon (vital activity) resulting from the combining of Yin Qi and Yang Qi, to which everything is attributed. "Chun" (alcohol), a kind of organic compound, indicates that everything contains life. The Qi of yin yun is the primitive Grand Qi (Tai Qi), which is resulted from the interaction between heaven and earth, and is the original material base for biochemistry. *Book of Changes* stresses heaven and earth's communication. For instance, Tai (Peace) is made up of heaven and earth, and stands for Kun Qi rising so as to form the way of heaven, while Qian Qi falls to form the way of earth. It says in *The Orderly Sequence of the Hexagrams: Book of Changes*, "When there was heaven and earth, then all things were produced." Both of the two concepts focus on the fact that the combining of heaven-Qi and earth-Qi is the force of Qi Hua (vital Activity). The interaction between heaven and earth, including the movement of celestial bodies; revolving of the sun, the earth and the planets; falling of aerolite; the eruption of volcanoes, cosmic rays and geo-magnetic forces; even some kinds of energies resulted from thunder, lightning and the tides are catalysts of life evolution. Under the catalytic reaction of the kinds of energy such as heat, light, electricity, magnetic forces and radioactive energy, biochemicals have gradually changed from inorganic substances to organic minor molecules, then to big life molecules, then to proteins and finally, life.

So the communication between heaven and earth and "transformation in its various forms abundantly" in *Book of Changes* indicates

that movement of the universe causes Qi Hua (vital Activity), which causes materialization, which again causes life. This contains the magnificent principle of the origin of life.

The aforesaid illustrates that in terms of the origin of life, *Book of Changes* holds to the concept of materialism. From the point of view of historical materialism, these opinions in *Book of Changes* represent the advance of oriental civilization.

On the origin of life, the *Emperor's Canon of Medicine* holds the same opinion as *Book of Changes*. For example, in *Tian Yuan Ji Da Lun: Plain Questions*, it says, "In heaven there is Qi, in earth there is form; form and Qi interact, thus creating the myriad of things". "The boundless sky is the foundation and origin of everything and also their development. The Five Elements are spread out in the universe, which spread out the vital Qi of heaven and earth, so that is how everything comes into being and is obtained. Five stars glow in the sky. The sun, the moon and the above mentioned five stars move according to certain rules, and everything has constant changes of Yin and Yang. Hence different qualities of softness and strength are formed. And darkness, as well as obviousness, emerges in certain places and in order. Hotness and cold come and go by turns as the seasons change. Everything in the universe emerges and develops like this." It also says that cosmic movement causes Qi Hua (vital Activity), which causes everything. Here the opinion on the origin of life is both magnificent and materialistic, which further proves the scientific nature of the origin of life in ancient China, and symbolizes the advancement of Chinese scientific history.

Book of Changes stresses that everything comes from the primitive TaiKong, the interaction between heaven-Qi and earth-Qi. The

Great Terminus theory indicates that the chaotic Qi in the universe is the source of everything. The figures of He and Luo show that everything derives from the one. Laozi (a famous writer and philosopher in ancient China) emphasized that everything begins with "Dao". This school of the beginning of the universe is in harmony with the modern saying that life comes from a primitive chemical reaction. We can note from all this that as to the occurrence of everything, the Grand Terminus, the Eight Trigrams and He and Luo deriving Law are of universal significance.

Section 5 *Book of Changes* and Human Genesis

The German botanist Schleiden and zoologist (Theodor) Schwann discovered the cell and this announcement put biological evolution onto the important stage of human development.

The origin of the cell is an important milestone in biological evolution. The evolution from a non-cell form to a cell form covered a rather long period. And this period includes three main phases: forming of the original cell membrane, original nuclear cell, and real nuclear cell.

Human genesis starts with a cell, formed by the combination of sperm and ovum. *Book of Changes* plays an important role in terms of human genesis. First, *Book of Changes* stresses Jing is the material basis for human genesis and says Jing Qi comes from the intercommunication of the seed between the male and female. As it says in the *Great Treatise on Yi*, "There is an intercommunication of seed between the male and female, and the transformation in its liv-

ing types proceeds" "Yin (shaded and inactive) and Yang (bright and active) unite according to their qualities, and there results the embodiment of the strong and the weak". Such a penetrating inference on human genesis several thousand years ago was undoubtedly materialistic and advanced.

The important value of *Book of Changes* and human genesis lies especially in the fact that the process of human genesis complies with the Great Terminus—the Eight Trigrams deriving pattern. The human zygote changes from a combination to a sphere composed of a double sub-cell, then to the four-cell stage, eight-cell stage, sixteen, thirty-two, and thus finally to an original embryo, which is a process similar to the development of the Eight Trigrams. The process mentioned above confirms what it says in the *Great Treatise on Yi*: "In the system of the *Changes* there is the Grand Terminus, which produces two elementary forms. Those two forms produce the four emblematic symbols, which again produce the Eight Trigrams. Thus, the hexagram is produced." All this again proves the universal significance of the deriving law of the Grand Terminus—the Eight Trigrams.

Now let's turn to the forming process of sperm and ovum. An original sperm cell undergoes several divisions and becomes a mother sperm cell, then covers the period of sperm cell to sperm, that is to say, the deriving law of the Grand Terminus—the Eight Trigrams, one producing two, two producing four and four producing eight... is once more presented. As far as the forming process of the ovum is concerned, it is the same as that of a sperm.

To look at the matter from more microaspects, the cell occurring process before the original sperm and original ovum necessarily presents the same law, showing that the deriving law of the Great

Terminus—the Eight Trigrams is also a universal law in terms of super-microcosmic occurrence.

That the deriving law of the Grand Terminus—the Eight Trigrams exists universally in microcosm strongly states that the law is a universal law in nature, and is a matter of science and practice. The occurrence of everything derives from interactions between Yin and Yang. The truth exists in the occurrence of everything, including the development of celestial bodies in macrocosm and the origin of life in microcosm.

Section 6 Observing the Grand Terminus in Macrocosm From the Occurrence of the Solar System

Since the Occurrence of the aforesaid microcosm abides by the same deriving law, what about the macrocosm? We can get the answer from observing the occurrence of the solar system.

The solar system is a system in which nine planets move round the sun. The solar system is just one galaxy in the vast universe. In this system, the nine planets revolve in circular orbits around the sun respectively, while the sun and the nine planets rotate continuously, as shown in Figure 23-3.

How did the solar system come into being? The comparatively accepted theory is the hypothesis by Kant and Laplas (拉普拉斯). In 1755, the German philosopher Kant, advanced his famous nebula hypothesis in his *On General Natural History and Heavenly Bodies*. In his view, the celestial bodies of the solar system came from the same blinding nebula. They were maintained within the nebula

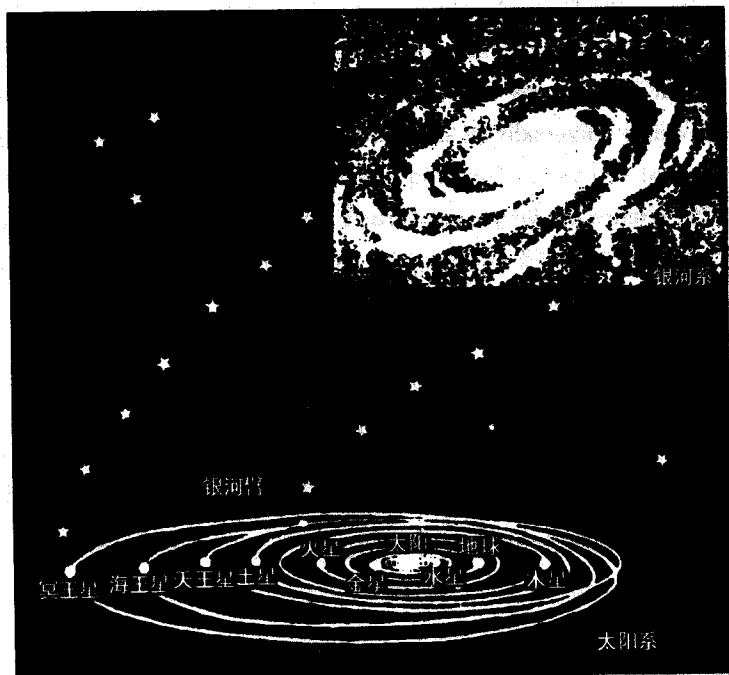


Figure 23-3 Map of the Sun and the Milky Way System

Notes to this figure:

银河系: the Milky Way System 太阳系 the Solar System
 银河臂: the Milky Way Arm 冥王星 Pluto 海王星 Neptune
 天王星 Uranus 土星 Saturn 火星 Mars 金星 Venus
 太阳 Sun 水星 Mercury 地球 Earth 木星 Jupiter

by means of Newton's universal gravitation, and therefore a unity was formed. In 1796, the famous French mathematician Laplas also offered a doctrine that the solar system came from a nebula in his *On the System of Universe* (《宇宙体系论》). That is to say the whole solar system was brought about from the ball of a rotating nebula. The nebula emerged as the blinding gas condensed and con-

tracted. The modern astronomical viewpoint holds that the nebula's temperature does not fall but rises as it contracts, so its contraction is due to its own gravitation.

The modern viewpoint holds that the predecessor of any star is a gas-cloud nebula, made up of hydrogen and helium. This contracts because of its own gravitation, and begins to condense at its core. Its temperature rises as it contracts, all this being accompanied by thermonuclear reactions, so that a star comes into being. Around the star there may be some hydrogen left, which is like a silkworm cocoon and becomes contracted and condensed, and then turns into a planet. The origin of the solar system went through the same process. But the sun is a peculiar star. Its central gravitation is very strong so it has contracted a great deal. The temperature is extremely high and thermonuclear reactions are very violent, just like a huge burning fire ball. The nebula was divided into a circle-shape, each circle becoming a planet, and thus the solar system came into being. The formation of other celestial bodies in other galaxies in the universe is similar. The Paris Astronomical Observatory in France has just discovered a celestial body in the southeast of the Stern constellation, which is much the same as the solar system and it is named HD44594 and classified as a 6.6 level star. Its temperature, age and gravitation are measured by means of a spectrum similar to that of the sun, only the amount of heavy elements in it is a little more. All this suggests that the process in the origin of the universe is similar. The modern viewpoint is in accordance with Kant's nebula hypothesis made in 18th century that presents the solar system as coming from a nebula. *Book of Changes* pointed out three thousand years ago that the universe comes from the Chaos Qi of the Grand Terminus and the YinYun Qi of heaven and earth. As it says in the *Great*

Treatise on Yi, "In the system of Changes, there is the Grand Terminus, which produced the two elementary forms... ." "When there was heaven and earth, then all things were produced (from *The Orderly Sequence of the Hexagrams*) "There is an intermingling of the genial influences of heaven and earth, and transformation in its various forms proceeds abundantly". Owing to the limited level of science and technology at that time, *Book of Changes* could only present the Chaos opinion, but it recognized that everything comes from the self-movement of matter. To deny any external will in the formation of everything in the universe was undoubtedly a viewpoint of historical materialism and glory.

The idea that the universe came from nothing is now gradually being accepted. Fifteen billion years ago, just before the great explosion, the universe was a vast vacuum. But this vacuum was not empty, there was energy in it. Its total energy was the sum of gravitational energy and non-gravitational energy. The former was negative whereas the latter was positive. These two kinds of energy generally offset each other, the total energy remaining nil. Under certain circumstances, vacuum polarization could separate gravitational energy and non-gravitational energy, and manifesting energy emerged. The great explosion in the universe was maybe the separation of the two kinds of energy. The so-called rising suddenly and sharply in the primitive period of the universe was a process that let out all the non-gravitational energy owing to inter-changing. The process mentioned above, showing that the universe came from nothing, was quite similar to "Wu Ji (Infinite) produced by the Grand Terminus (Taiji)" in *Book of Changes* and "Dao came from nothing (wu) by Laozi." So the academic discussions on the origin of the universe held at Cambridge University in the U. K. in 1982

mentioned that "the possibility of the universe's coming from nothing" is very interesting. More research on this is going to be made. (*Rising Suddenly and Sharply of the Universe from Science*, the Tenth Issue, 1984. Published by China Intelligence Agency Chong Qing Branch, translated by Liu Ruliang of Nanjing Zijinshan Observatory). The Chinese thoughts of "Wu Ji produced by the Grand Terminus" and "Everything comes from nothing" first put forward 3,000 years ago marvelously complies with the latest thoughts about the occurrence of the cosmos.

The universe is endless and timeless. Ancient Chinese astronomy was very flourishing. For example, *Tai Shi Tian Yuan Ce* (《太始天元册》) in the *Emperor's Canon of Medicine* has also dealt with the movement of the celestial bodies which produced everything, that is: the boundless sky is the foundation and origin of everything and its development. Five Elements are spread out in the universe, which spread out the Vital Qi of heaven and earth, so that is how everything comes into being and is obtained. Five stars glow in the sky. The sun, the moon and the above mentioned five stars move according to certain rules, and everything has constant changes of Yin and Yang. Hence different qualities of softness and strength are formed. And darkness, as well as obviousness, emerges in certain places and in order. Hotness and cold come and go by turns as the seasons change. Everything in the universe emerges and develops like this". In *Wu Yun Xing Da Lun: Plain Questions* (《素问: 五运行大论》), the relationship between the movement of celestial bodies and everything was definitely stressed as a relationship between the root, trunk, branches and leaves. As for the function of heaven and earth, heaven shows the sun, moon, and twenty-eight constellations, while the earth forms substances of different

structures. The sun, moon and five stars revolve in the sky, while the Five Elements are attached to the earth. So the earth carries the substance of different structures, while heaven spreads out the configurations of the stars which gain vital Qi from heaven. The relationship between the movement of the earth's substances and heaven's vital Qi is similar to that between the root and leaves. All this indicates that astronomical thought in ancient China was materialistic and advanced.

In modern times, the human scope of the universe has been widened far beyond the solar system. In 16th century Copernicus's sun-centered theory postulated that the universe was as large as the solar system in size. In fact, the predecessor of the solar system fifteen billion years ago was just a cloud of dust—a nebula cloud.

With the development of science, the human scope in astronomy has been enlarged to the Milky Way System and to extra-galactic nebula. The Milky Way System is a revolving star belt made up of one hundred billion stars, with its diameter being ten thousand light-years (a light-year is the distance that light travels in a year). Now the astronomical scope to the universe has been expanded to the vast space measured by "ten billion light-years" with the farthest part from the earth being fifteen billion light-years away, and billions of interstellar objects can be observed.

How big is the universe? Does it have borders? And how many universes are there? No one knows. But the derivation of every galaxy necessarily follows a general law—coming from the self-movement of matter.

To sum up from the occurrence of life in microcosm and of the universe in macrocosm, we can note that all parts conform to the deriving law of the Grand Terminus—the Eight Trigrams in *Book of*

Changes. All this vigorously proves that the deriving law of the Grand Terminus—the Eight Trigrams is the general law in the universe and is the epitome of the occurrence of everything.

(Translated by Tian Yongying)

Chapter Twenty-four

Book of Changes and Sexology

Section 1 A Survey of This Chapter

Sexology deals with the physiological, pathological and clinical manifestations of human sexuality. As a branch of medical science, it consists of physiological sexology and clinical sexology.

The study of sexuality developed rather slowly in the past. The book *Human Sexual Response* written by two American scholars, Masters and Johnson, was published in the forties of this century. This book, which was the fruit of tens of years' hard work, opened the study of sexuality, which had long been kept secret. It challenged the long-standing cultural taboo on discussions of sexuality. The syndrome of pelvic circulation being held-up, as put forth by Danish physiologist Chom Vagna, is helpful in finding the cause of impotence. He believes that the male inferior position, or side position, can regulate blood circulation and make impotence less severe. Vagna has also found that there exists a linked vascular system between the arterial and venous systems in the penis. This linked system will become closed at sexual stimulation, which enables the penis to become erect (*The Third Milestone on Sex Research* By Ma Xianian. Science Vision, 1989, China).

In the late twentieth century, the study of sexuality is developing all over the world. There have been some achievements. Furthermore, with the progress in sexual psychology, physiology, pathology and sociology, sexology will show its increasing importance in protecting human health and keeping families and society in order.

Section 2 The Origin of Sexology in China

Sexology in China can be traced back to ancient times. The ancient people recognized that human multiplication depended on the genitals. Accordingly, phallic worship was the earliest sexual culture in China. For example, a rock carving found in Xinjiang was a symbol of phallic worship. (*People's Daily*, Mar. 16, 1983)

Writings about sexology in China first appeared in *Book of Changes*, which was written in the Yin-Zhou Period three thousand years ago. Guo Moruo, a famous scholar, regarded the Yin trigram (☷) and the Yang trigram (☰) in *Book of Changes* as the possible symbols of the human genitals. Another Chinese scholar, Wen Yiduo, believes that the Eight Trigrams must depict the process of human sexual intercourse. For instance, the Perilous Pit (☱) symbolizes a typical intercourse while other trigrams symbolize other types of sex activity.

The Eight Trigrams have a wide origin. They are the comprehensive generalization of all the Yin and Yang motion in the universe. They are closely related to astrology [sun-dial, the sun (☰) & the moon (☷) motion], geography [land (☷) & ocean (☰)],

phallic worship [the male (—) & the female (--)]. Ancient phallic worship especially influenced the origin of the Eight Trigrams.

Book of Changes does not put sexology under taboo. It has accounts of sex-making. Xian (Influence) makes a detailed account of sexual foreplay from the feet to the mouth. It goes like this: "The first line, divided, shows one moving his great toes; the second line, divided, shows one moving the calves of his leg; the third line, undivided, shows one moving his thighs; the fourth line, undivided, shows that firm correctness which will lead to good fortune and prevent all occasion for repentance. If a subject is unsettled in his movement, (only) his friends will follow his purpose. The fifth line, undivided, shows one moving the flesh along the spine above the heart. There will be no occasion for repentance. The sixth line, divided, shows one moving his jaws and tongue." Therefore, the earliest Chinese culture had discussions on sexuality several thousand years ago. In addition, *Book of Changes* pays great attention to the significance of sexuality in human multiplication. The *Great Treatise on Yi* says, "There is an intercommunication of seed between male and female, and transformation in its living types proceeds. Qian and Kun unite according to their qualities, and there comes the embodiment of the result by the strong and weak (lines)." "From the existence of male and female, there came afterwards husband and wife. From husband and wife there came father and son. From father and son there came ruler and minister." Another chapter in *The Orderly Sequence of the Hexagrams* emphasizes the significance of the marital relationship in society. It says, "The rule for the relation between husband and wife is that it should be long-enduring. Hence Xian is followed by Heng, Heng denotes long enduring." The decrease-increase theory in *Book of Changes* has a strong influence

on TCM sexology (for details, see Section 3 of this chapter). Some scholars believe that *Zhou Yi Can Tong Qi* (《周易参同契》) tells about sexual techniques as well as the skills in making pills of immortality. This is because the book applies the principle of pill-making to Qigong in sexuality. It includes the degrees of action, the art of directing one's strength, the increase of Yang Qi and the decrease of Yin Qi. (Holland, R. H. Via Gulik, *Study of Ancient Chinese Sexuality* (《中国古代房内考》)).

In 1899, some bone and shell inscriptions were excavated from the Yin Ruins at Xiaotun village, Henan province. These pictographical characters reflect the culture of the Shang and West-Zhou dynasties and say something about sexuality. Therefore, the sexual culture at that time had already found its expression in characters. For instance, 女 (the female) and 乳 (the breasts) are pictographs of a plump breast. 孕 (pregnancy) is a pictograph of a big nipple and an abdomen.

The *Emperor's Canon of Medicine*, which was written more than two thousand years ago, also mentions the significance of human sexuality. In the chapter *Spiritual Pivot: On Qi* (《灵枢: 决气》) there are such words as, "Two spirits get united and transformed to create a body. This is essential." The *Emperor's Canon of Medicine* also thoroughly discusses the physiological development of human primary sex characters (the ovary, menstruation and sperm). *Plain Questions: On the Ancient Truth* (《素问: 上古天真论》) says, "As for the female, ovarian gonad stimulating hormones are formed at the age of fourteen. The Ren channel opens, the Taichong channel goes into full operation; menstruation comes and therefore child-bearing is possible. At the age of forty-nine, the Ren channel declines, sexual hormones decrease and the channels get

closed. Therefore, she will pine away and be incapable of child-bearing. As for the male, the kidney Qi is most powerful at the age of sixteen, sexual hormones come and the vital energy overflows. If a man gets married at this time, he will be capable of fertility. At the age of fifty-six, the liver Qi declines, the tendons are no longer elastic, sexual hormones decrease and the vital energy becomes less. Therefore, fertility is impossible." *Plain Questions: the Truth From the Golden Chamber* (《素问: 金匱真言论》) pays great attention to sperm preservation. It says, "Sperm is the vital essence of human body." It also discusses the relationship between the kidneys, sperm and brain marrow. The discussion lays a theoretical foundation for the later techniques of returning sperm for brain invigoration. It says, "Sperm finds its origin in the kidneys" (*Spiritual Pivot: On Spirit* (《灵枢: 本神》)). "The bone marrow originates from the kidneys" (*Spiritual Pivot: On Impotence* (《灵枢: 痿论》)). "The brain is the marrow's source" (*Spiritual Pivot: On Source* (《灵枢: 海论》)). "Sperm is formed after man is born; the brain marrow comes into being after the sperm" (*Spiritual Pivot: On Channels and vessels* (《灵枢·经脉》)). Therefore, the *Emperor's Canon of Medicine* stresses the relationship between the kidneys, sperm and brain marrow. In addition, this book puts forth the idea that "the liver is in charge of dredging and purging wastes", which provides a theoretical foundation for the pathological and physiological cause of impotence as well as its treatment. Meanwhile, the *Emperor's Canon of Medicine* notes the relationship between hyperaphroisia and senility. *Plain Questions: on Ancient Truth* (《素问: 上古真言论》) says, "The ancient people knew the principles of life and learned from the theory of Yin and Yang. They paid attention to sexual techniques. Therefore, they kept both their

bodies and spirits in good condition. They usually lived for a hundred years. Nowadays, people are quite different. They drink excessively and take their loose life for granted. They have sex after getting drunk and drain their vital energy. They do not know how to preserve sperm and how to control their spirits. They only want to indulge themselves in merry-making. It is no wonder they become haggard in their fifties—they contradict the principles of life." The stress on sexual techniques includes seven decreases, eight increases and returning the sperm for brain invigoration.

In the long practice of TCM, a lot of experience and therapies have been collected for dealing with sexual disorders, such as impotence. Especially, the spiritual element is stressed in treating impotence and premature ejaculation. In recent times, andriatry has been developing rapidly both in western medicine and in TCM, and it has played an active part in driving TCM sexology forward.

The development of sexology also owes a lot to religion. Confucian masters such as Confucius and Menfucius did not evade sexuality. They pointed out that sexuality is human nature, and it is as important as food. Gaozi said, "Eating and sexuality are human nature." In addition, the Confucian group highly emphasized ethics and morals, which play an important role in guiding Chinese sexual morality on the right track.

The master of the Taoist group was Pengzu. He lived up to eight hundred years according to legend and was an expert in sexual techniques. Returning sperm for brain invigoration is one out of many of the Taoist teachings. *Valuable Prescriptions* (《千金方》) says, "Pengzu said, '... a person at the age of forty must understand sexual techniques. These techniques are rather easy; however, people are still incapable of learning them. They take love potions

just under the age of forty, which will invite disastrous consequences soon after. Be careful." (*Volume 27, Nourishing Spirits*)

Ten Questions excavated from the Ma Wang Dui Han Ruins also keeps quotations from Pengzu's theory of energy protection. It says, "Human life is closely related to the protection of the vital energy. The detailed procedures are as follows: exhale and inhale first, then droop the arms and rest them on the abdomen; gather the Yang and Yin Qi in the genitals." This shows that Pengzu paid great attention to sexual cultivation. Particularly, his special technique helps people keep healthy in sexuality.

The Buddhists strongly abstain from sexuality. Sexuality is absolutely prohibited for the monks. However, some branches of Hinduism are just the opposite. Some secret Buddhistsects even regard sexual cultivation as necessary on the way to Buddhist transformation. This is inseparable from the early worship of sexuality in Hinduism. Now, in some Buddhist temples, such as Yonghe Palace in Beijing, there are still some sculptured female and male Buddhist idols in coition.

All in all, religion has played its part in the development of sexology.

Section 3 The Decrease-Increase Theory in *Book of Changes* and Sexology

Book of Changes puts forward the decrease-increase theory first. It has thorough discussions on this aspect that the *Zhuan in Sun (Decrease) Trigram of Yi* says, "Diminution and increase.

overflowing and emptiness,—these take place in harmony with the conditions of the time; there is a time when the strong should be diminished and the weak should be strengthened." It puts forth the principles and time of the decrease-increase theory. *Treatise on the Hexagrams Taken Promiscuously, According to the Opposition or Diversity of Their Meaning* (《易：杂卦》) says, "In Sun and Yi are seen, how fullness and decay their course begin." The *Great Treatise on Yi* says, "The continuation of diminution ends up in increase, the continuation of fullness ends up in decrease." Therefore, the decrease-increase theory is based on the overflowing-emptiness principle.

The *Emperor's Canon of Medicine* fully applies this theory to the regulation, therapeutic methods, recipes and medicine of TCM. For example, the asthenia-sthenia theory in TCM is a development of this theory. The leading therapeutic method in the *Emperor's Canon of Medicine*, "invigorate when asthenia prevails, purge when sthenia prevails," is an excellent application as well.

Meanwhile, the *Emperor's Canon of Medicine* applies this theory to sexual techniques, which form a particular part in sexology. *Plain Questions: on the Truth* (《素问：至真要大论》) has similar features and it is also an application of this theory. This point has been proved by the book *The Principles of the Universe* (《天下至道谈》) excavated from the Ma Wang Dui Han Ruins in Changsha.

The *Emperor's Canon of Medicine* also says, "A person will be able to regulate the two extremes if he understands the principle of seven decreases and eight increases. If he does not understand, he will pine away at an early age." Therefore it makes clear that improper sexuality will lead to early senility. It also says, "The Yin Qi will be cut in half at the age of forty, one's life begins to decay; at

the age of fifty, one begins to gain weight and no longer has keen hearing and eyesight; at the age of sixty, one becomes sexually impotent and suffers a heavy loss of Qi; the nine orifices are stuffed; asthenia in the lower part of the body and sthenia in the upper part appear; one can no longer control his tears and mucus. Therefore, those who understand the decrease-increase theory will be strong, those who do not will become senile (*Plain Questions: On Yin Yang Symbolism* (《素问: 阴阳应象大论》)). In a sense, this theory has constructive significance to sexology.

Book of Changes is important because its decrease-increase theory has been widely used by TCM in sexual cultivation. Later generations have created bold health-keeping techniques in sexuality under the influence of this theory and the *Emperor's Canon of Medicine*. Many TCM masterpieces have this kind of discussion. *Book of the Han Dynasty: On Literature* (《汉书: 艺文志》) says there are eight books on sexual techniques. For example, there are the twenty-six volumes of the *Yin-doctrines of Rong Cheng* (《容成阴道》), *Secret Principles in Sexuality* (《玉房秘诀》), *Divine Notes* (《玉房指要》), *Sunu Notes* (《素女经》), and *A Guide to Sexuality* (《玉房指要》). Unfortunately, all these books fell into oblivion. Only such books as *Orthodox Prescriptions* (《正统道藏》), *Valuable Prescriptions*, *Effective Prescriptions* (《医心方》), *An Encyclopaedia of Useful Prescriptions for Women* (《妇人大全良方》) and *Guangsi Essentials* (《广嗣纪要》) have some records, thus enabling part of the documents to have come down through history.

Sun Simiao, a doctor in the Tang Dynasty, said similar things in his book *Valuable Prescriptions*. In his opinion, the male cannot live without the female, and vice versa. Objectively, he adopted a positive attitude toward human sexuality. *Effective Prescriptions*

written by a Japanese also quotes similar words from the medical books mentioned above. *Bao Pu Zi* (《抱朴子》) written by Ge Hong in the Jin Dynasty says, "Sexual techniques can cure minor ailments if mastered." The well-known bamboo slips excavated from the Ma Wang Dui Han Ruins in 1973 have a detailed analysis on seven decreases and eight increases in such articles as *Life-regimen* (《养生方》), *Sexual Techniques* (《合阴阳方》), and *The Principles of the Universe* (《天下至道谈》). All these show that the decrease-increase theory is fundamental to sexuality.

Section 4 The Application of the Decrease-Increase Theory to Sexuality Recorded on the Excavated Bamboo Slips from the Ma Wang Dui Han Ruins

In 1973, some bamboo slips were found in the No. 3 Tomb of the Ma Wang Dui Han Ruins in Changsha. The text of *The Principles of the Universe* (《天下至道谈》) was written on the slips. It mainly deals with seven decreases and eight increases, i. e., it applies this theory to sexology.

It says, "Qi has eight increases and seven decreases. If a person can not make use of eight increases and abstains from seven decreases, he will only have half of his Yin Qi left at the age of forty, and his life begins to decay; at the age of fifty, he will gain weight; at the age of sixty, his eyesight and hearing are no longer keen and sharp; at the age of seventy, his external genitals will shrink and he will become bald. At this period, the Yin Qi is sluggish; his tears

and mucus are uncontrollable. However, there are ways of rejuvenation. The old will become strong and no longer senile if they can curb their ailments by abstaining from seven decreases and can nourish their Qi by using eight increases." It analyzes the seven decreases and eight increases of Qi and holds that improper sexuality will lead to early senility, and puts forth the application of this theory to sexual techniques.

Eight increases refer to the sexual techniques that are good for health.

Before intercourse, the couple should regulate their breathing, stretch their tendons to obtain comfort and peace. They can eat a little if necessary to gather strength. The man and the wife should caress each other for sexual stimulation. When sex-making begins, the movement should be gentle and slow. At this time, the couple should achieve body relaxation with their breathing and guide the Qi to the lower part of the body. Penile movement should not be too frequent for the sake of sperm preservation. After ejaculation, the couple should stop and rest peacefully and warmly. There should never be a second forced ejaculation. The mastery of these techniques is good for health.

Seven decreases refer to harmful ways of making sex.

The following ways are all against scientific principles: an involuntary intercourse; rough movement just for one's own pleasure; intercourse after exhaustion or hard labor; sexual indulgence which may cause dyspareunia; intercourse after heavy sweating, loss of sperm, irregular breath and penile flaccidity. All these are harmful to health.

Section 5 The Application of the Decrease-Increase Theory to Sexual Techniques Recorded in the Book *Effective Prescriptions*

This application has been thoroughly discussed in such books as *Secret Principles in Sexuality*, *Divine Notes*, *Sunu Notes*, and *A Guide to Sexuality*. Some discussions are quoted in *Valuable Prescriptions*, *Effective Prescriptions* and *Orthodox Prescriptions* and are important in studying sexual techniques. The following tries to analyze this application.

Eight increases: in Sunu's words, there are seven decreases and eight increases in sexuality.

The first increase is called to strengthen the vital essence. The wife lies on her side and opens her thighs, then the man lies on his side for intercourse. He should stop after eighteen penile thrusts. This way strengthens the vital essence of the man. Having this kind of intercourse twice every day, fifteen days will also cure profuse spontaneous menstruation.

The second increase is called to tranquilize Qi. The wife lies on her back with the head resting high on a pillow. She should stretch her calves wide to let the man kneel down between her thighs. He should stop intercourse after twenty-seven penile thrusts. This way can regulate the Qi. Having this kind of intercourse three times every day, twenty days will remove the cold feeling from the female external genitals.

The third increase is called Li Cang (利藏). The wife lies on

her side and bends her thighs, and the man lies horizontally for intercourse. He should stop after thirty-six penile thrusts. This way can regulate the Qi. Having this kind of intercourse four times every day, twenty days will remove the cold feeling from the female external genitals.

The fourth increase is called to strengthen the bones. The wife lies on her side, bends her left knee and stretches her right calf; the man bends over her for intercourse. He should stop after forty-five penile thrusts. Having this kind of intercourse five times every day, ten days will cure amenorrhea.

The fifth increase is called to regulate the pulse. The wife lies on her side, bends her right knee and stretches her left calf. The man should stand on the ground for intercourse. He should stop after fifty-four penile thrusts. This way will regulate the pulse. Having this kind of intercourse six times every day, twenty days will cure dyspareunia.

The sixth increase is called to accumulate blood. The man lies on his back, the wife kneels over him with her buttocks lifted high. She should insert the penis into her vagina as deep as possible and move upward and downward sixty-three times. Stop the intercourse when the number is over. This way can make one energetic. Having this kind of intercourse seven times every day, ten days will cure menstrual disorder.

The seventh increase is called to benefit fluid. The wife bends over the man with her buttocks lifted high; the man should make seventy-two upward penile thrusts before he stops. This way can fill one's bone marrow with energy.

The eighth way is as follows: the wife lies on her back, bends her calves and rests her buttocks on her feet; then the man kneels

down for intercourse. He should stop after nine penile thrusts. This way can make one's bones sturdy. Having this kind of intercourse nine times every day, nine days will remove the smelly odor of the female genitals.

In conclusion, the *Sunu Notes* quoted by *Secret Principles in Sexuality* illustrates the seven decreases and eight increases that exist in human sexuality. The eight increases mentioned above refer to the sexual techniques that are good for health and longevity.

Seven decreases: Sunu says in *Secret Principles in Sexuality*:

The first decrease is called Qi exhaustion. It refers to such symptoms as the morbid state of sthenia of heart-fire, a blurred vision, lack of Qi and finally heavy sweating. These symptoms result from forced and involuntary sexuality. Treatment: the wife lies on her back, then the man kneels down and thrusts his penis deep down into the vagina; the wife should shake the penis by herself, and the man should be gentle in his movement. The intercourse is over when an abundant amount of female mucoid fluid appears. Having this kind of intercourse nine times every day, ten days will remove all the above symptoms.

The second decrease is called essence overflowing. If the couple indulges in their sexual desires and uses the Yin Qi and the Yang Qi when they have not become united, and then have sex after getting full and drunk, their lungs will be damaged by the disorder in breath and Qi-circulation. They will cough due to the adverse rising of the lung Qi, feel hot all over and thirsty, and be unable to stand for a long time. Treatment: the wife lies on her back, bends her knees and clutches the man; then the man thrusts his penis into the vagina for half-*cun* *; the wife should shake the penis by herself. The intercourse is over when an abundant amount of female mucoid fluid

appears. During the intercourse, the man should be gentle in his movement. Having this kind of intercourse nine times every day, ten days will remove all the above symptoms.

The third decrease is called pulse exhaustion. If there is a forced insertion of the penis when it has not grown hard, the vital energy will be exhausted in the middle of intercourse; or the couple will have their spleens damaged and suffer from indigestion, impotence or lack of Qi if they have sex after a heavy eating. Treatment: the wife lies on her back, rests her feet on the man's buttocks; then the man kneels down inside her thighs; the wife should shake the penis by herself; the man must be gentle in his movement. The intercourse is over when an abundant amount of female mucoid fluid appears. Having this kind of intercourse nine times every day, ten days will remove all the above symptoms.

The fourth decrease is called loss of Qi. When there is a heavy sweating after hard labor, and the sweat has not dried up, an intercourse will lead to a burning feeling in the lips and abdomen. Treatment: the man lies on his back. Then the wife sits astride him to insert the penis into her vagina shallow; she should shake the penis by herself, and the man should be gentle in his movement. The intercourse is over when abundant female mucoid fluid appears. Having this kind of intercourse nine times every day, ten days will remove all the above symptoms.

The fifth decrease is called energy disorder and damage in one's functional organs. When the couple have sex violently just after a bowel movement or urination, liver damage will occur due to unsteady body conditions. They will suffer from sluggish tendons and bones, spiritless eyes, abscesses, weak and exhausted pulse and impotence. Treatment: the man lies on his back. Then the wife

crouches astride him and moves forward to gradually insert the penis into her vagina; the wife should shake the penis by herself and the man must be gentle in his movement. The intercourse is over when abundant female mucoid fluid appears. Having this kind of intercourse nine times every day, ten days will remove all the above symptoms.

The sixth decrease is called sthenia-type coma. If the couple cannot control their sexual desires and have too much sex, their vital energy will be exhausted, hence all kinds of ailments will spring up. They will feel worn-out and have blurred vision. Treatment: the man lies on his back. Then the wife crouches astride him and bends forward to insert the penis into her vagina; she should shake the penis by herself, and the man must be gentle in his movement. The intercourse is over when abundant female mucoid fluid appears. Having this kind of intercourse nine times every day, ten days will remove all the above symptoms.

The seventh decrease is called blood exhaustion. If the couple repeatedly has sex after hard labor, fast walking, heavy sweating, and if penile penetration is too deep and violent, there will be an exhaustion of blood and energy, skin dysfunction, penile pains, wetness in the scrotum and a transformation from vital energy to blood. Treatment: the wife lies on her back with her buttocks lifted high and thighs stretched. Then the man kneels down and makes a deep penile penetration. The wife should shake the penis by herself and the man must be gentle in his movement. The intercourse is over when abundant female mucoid fluid appears. Having this kind of intercourse nine times every day, ten days will remove all the above symptoms.

These are the seven kinds of harmful sexuality.

In conclusion, the original article deals with the idea that improper sexuality leads to poor health and illness. If people have involuntary sex or have sex after getting drunk and full, hard labor, heavy sweating, bowel movement, urination, fast walking, recent recovery from an illness, or if sexual movement is too hasty and violent, all kinds of illnesses may be triggered. For example, the couple may suffer from dizziness, asthma, essence damage, abdominal fever, abscesses, impotence, amenorrhea, depressive-syndrome of blood and essence, and damage to the liver, tendons and bones.

The general treatment is to take the common position or the side position to have intercourse gently. In addition, Qigong may also be adopted in sexuality (see Section 6).

Section 6 Sexual Qigong

Sexual Qigong is important for life-nourishment. However, due to a long history of feudalism in China, sexuality has become a taboo. It is seldom discussed in the works of doctors of Qigong masters. Therefore, many precious kinds of sexual Qigong have fallen into oblivion. Even some survived records are broken in context and ambiguous in meaning. Only some bold quotations in *Valuable Prescriptions* and *Effective Prescriptions* have made part of sexual Qigong survive. This section will analyze the main content.

Taoist sexual Qigong is also a valuable legacy. Taoist master, Pengzu, who lived for eight hundred years according to legend, was an expert in sexual Qigong. The founder of Chinese Taoism, Zhang Ling in the East-Han Dynasty, also carried out sexual cultivation. He stressed sperm preservation. His book *Lao Zi Xiang Er Zhu*

(《老子想尔注》) says, "I strongly believe that the ancient hermits lived long because they paid great attention to sperm preservation; people nowadays die early due to sperm exhaustion." Some secret Buddhist canons also emphasize sexual techniques. In addition, the Taoist masterpiece on cultivation, *Bao Pu Zi* by Ge Hong, approves of sexual Qigong. It puts forward the principle of returning sperm for brain invigoration. The following kinds of sexual Qigong are generalized from *Orthodox Prescriptions* (a Taoist analect), *Effective Prescriptions* (a Japanese book) and some quotations from Pengzu and *Divine Notes* in *Valuable Prescriptions*.

I. Returning the sperm for brain invigoration

In sexual intercourse, the couple are supposed to note the following principles: a. having sex with no ejaculation; b. inserting the penis before it completely hardens up; c. withdrawing the penis when it is still swelling; d. finally, returning the sperm for brain invigoration. The details are as follows: when having the feeling of impending ejaculation, the man should shut his mouth and open his eyes instantly, curb the circulation of Qi, clench his fists, twitch his nose to obtain Qi, shrink his abdomen, bend his spine, use two fingers of the left hand to press the Weiyi acupoint, make a long exhalation and grind his teeth over and over again. If ejaculation is checked, the brain will be invigorated and the man will live long. If ejaculation goes freely, the man's spirit will be damaged (*Valuable Prescriptions, Volume 27, Life Cultivation, Good Sexual Techniques*). Pengzu said, "A person of forty must understand sexual techniques. The techniques are simple, but people are unwilling to learn them. In short, the principle is to have intercourse with no ejaculation. That is all", "Having intercourse several times with no ejaculation will cure on illness, while having intercourse a hundred

times with no ejaculation will make man live forever." Therefore, Pengzu regarded this principle as most important. He also mentioned, "While learning sexual techniques, a person will benefit a lot if he obtains Qi as much as possible with his nose and then exhales a little. The hot feeling all over the body shows that he has already obtained Qi." *Orthodox Prescriptions* quotes from Pengzu that the method returning the sperm for brain invigoration is to insert the penis before it completely hardens and to withdraw the penis when it is still swelling. Laozi said, "this Qigong makes man live long and avoid unexpected death." *Divine Notes* says, "Upon impending ejaculation, the man should press the acupoint behind the scrotum with two of his left fingers, exhale, grind his teeth, look up, open his eyes and gaze in various directions. In this way, the circulation of Qi in the lower part will be checked, and ejaculation is avoided." Pengzu said, "Upon an impending ejaculation, the man should wait till the wife reaches orgasm as well. In doing this, he should place the penis on the cervix, which is like a baby's sucking the breast. Then he ought to close his eyes, raise his tongue to the soft palate, look up, bend his spine, twitch his nose, droop down his shoulders, close his mouth and inhale. As a result, only twenty or thirty per cent of the sperm will be lost." *Secret Principles in Sexuality* says, "Someone asked Pengzu a question, 'what will be the pleasure if the couple have sex with no ejaculation, since ejaculation is sexual ecstasy?' Pengzu answered, 'ejaculation makes one suffer from exhaustion, blurred vision, tinnitus, drowsiness, dry throat and loose bones. Therefore, this transient joy will lead to permanent unhappiness; an intercourse with no ejaculation makes one healthy and keen in eyesight and hearing.'" All these are valuable warnings.

The bamboo slips excavated from the Han Tombs point out, "A

man's eyesight and hearing will be keen and sharp after a first intercourse with no ejaculation, his voice will be loud after a second one; if a man goes on doing this way until the tenth time, he will be strong, with good blood circulation, smooth and bright skin, high spirit, long life, etc. *Secret Principles in Sexuality* says, "In intercourse, the man had better make nine shallow penile thrusts before a deep one; in gathering Qi, the couple should kiss each other to inhale what the partner exhales, make nine light breathings before a deep one; breathe for nine rounds and the Yang number will be completed" (*Effective Prescriptions, Volume 28*). Therefore, the so-called "nine times of being shallow and one time of being deep" not only satisfies one's sexual desires but preserves the vital energy for body nourishment as well.

Returning the sperm for brain invigoration is significant. TCM holds that both sperm and marrow originate from the kidneys. The *Emperor's Canon of Medicine* says, "Sperm dwells in the kidneys, bone marrow originates from the kidneys; all kinds of marrow belong to the brain." It suggests that the essence of the kidneys is closely related to brain marrow. Therefore, sperm preservation will be good for the brain. Of course, sperm overflowing is a natural and physiological phenomenon. *The Principle of the Universe* excavated from the Ma Wang Dui Han Ruins makes similar remarks. However, a forced ejaculation should be avoided when there is not enough sperm; and the sperm should be returned for brain invigoration to evade possible body damage. This is the reason why ancient doctors repeatedly stressed that the couple can have sex when sperm overflows, which avoids kidney and brain damage.

Returning the sperm for brain invigoration may be related to the epididymides. According to some modern documents, the epi-

didymides are capable of absorbing the returned spermatozoons and seminal fluid when the spermatic duct is under ligature. At the point of orgasm, seminal fluid can only be returned to the bladder although the Huiyin acupoint is pressed. This is because seminal fluid has reached the urethra from the spermatic duct. In this case, sperm should be returned and absorbed before orgasm, i. e., before it reaches the spermatic duct. Furthermore, the epididymides should be the possible place for this returning because the epididymides can make spermatozoons from the testicles mature, then store them, and secrete seminal fluid.

This returning mainly aims at having intercourse without sufficient sperm. *The Principle of the Universe* says, "Sperm must be reinforced when it is inadequate." The *Emperor's Canon of Medicine* says, "People who just indulge their sexual desires and act against the principle of sperm preservation will pine away in their fifties." Accordingly, this returning should be understood from the angle of controlling one's sexual desires. It is not sound and reasonable to have intercourse several times with no single ejaculation, because the couple will still consume their vital energy even in such intercourse. Apart from that, the kidney Qi will also be consumed, for both the testicles and the epididymides will speed up the production of spermatozoons and seminal fluid under sexual stimulation. It is impossible to get strong after repeated sex, since sperm consumption can be triggered by mere sexual fantasies, not to mention actual intercourse.

II. Qigong for Guiding Sexuality

Practicing Qigong in intercourse keeps people healthy and free from illness. Sexual Qigong consists of drinking each other's saliva, inhaling and exhaling Qi and meditation.

Divine Notes says, "For the sake of longevity, the couple should do sexual foreplay. First, they had better drink each other's saliva for stimulation, and they should hold each other's left hands and generate meditative ideas from the dantian (a site three *cun* below the navel). From these ideas, a reddish form of energy which is yellow inside will rise and transform into Yin and Yang. Then, these two parts of energy will linger over the dantian, flow into the nihuan (a site three *cun* below baihui acupoint) and fuse into one. At this moment, Qi circulation must be shut, and penile penetration should be deep and quiet. The couple are supposed to swallow Qi slowly. The man must withdraw his penis quickly upon impending ejaculation." The book also says, "For the sake of immortality, the man ought to thrust his penis deep into the vagina, penile movement should be slow after the testicles get reddish and reach the size of an egg. Penile withdrawal must be quick upon impending ejaculation. People will live up to two hundred years if there is only one ejaculation each month." *A Guide to Sexuality* quotes from Pengzu: "Drinking each other's saliva in intercourse gives a feeling of having taken some decoction and removes one's thirst."

How to Unite Yin and Yang excavated from the Ma Wang Dui Han Ruins describes sexual Qigong in this way: "Before intercourse, the couple should hold each other's hands and inhale some fresh air; guide the flow of Qi up to the elbows, armpits, shoulders, necks, and faces; then guide the Qi down to the breasts, dantian, and lower parts of the body; after that, they should guide the Qi up once again and unite the Qi of both sides by looking into each other's eyes. In this way, people will forget their individual existence and become harmonized with the universe."

Sexual Qigong also makes people have keen hearing and eye-

sight. Wu Zidu said, "Upon impending ejaculation, the man must look up, close Qi circulation, breathe deeply, look to the left and right, shrink his belly, return sperm and let the vital energy go back to its channels. This way brings one keen eyesight." *Divine Notes* says, "On the verge of ejaculation, the man should inhale Qi, clench his teeth, shut Qi circulation, fill his ears with rumbling sound, shrink his belly and unite the flow of Qi. By doing this, he will have keen hearing even at an old age."

III . Qigong for gathering Yin and Yang in intercourse

This kind of sexual Qigong is good for body invigoration. *Valuable Prescriptions* quotes these details from Pengzu: "In intercourse, the man must place his penis deep in the vagina quietly. A long time later, Qi will rise and he will feel hot in the face, ... then the man should swallow the Qi from the wife while moving the penis up and down slowly. The couple should stop their intercourse on the verge of ejaculation. They should slow down their breathing, close their eyes, and lie on their backs. In this way, they will get stronger." It also mentions, "While having intercourse, one should inhale Qi as much as possible through the nose, and exhale Qi a little from the mouth. Involuntary sexuality is improper, for Qi has not been activated and the Yang Qi is rather sluggish. The couple should do sexual foreplay for spiritual harmony." It also stresses, "There should be only one ejaculation for several intercourses, because this way prevents sperm production from damaging one's health. On the contrary, if each intercourse is followed by ejaculation, one's health will be definitely undermined due to the continual consumption of the vital energy in sperm production."

Section 7 Bionics in Sexuality

Sexual bionics imitates the ways of animal copulation to enhance sexual love. *Sunu Notes* quoted in *Effective Prescriptions* describes the following ways of animal copulation which can be imitated in human sexuality.

The dragon's way: it is the male superior position. The wife lies on her back, and the man bends over her; then the wife should move her body upward to insert the penis into the vagina. This way is suitable for a woman with poor physique. It also enables the man to release his Yang Qi to the utmost.

The tiger's way: the wife bends forwards on her knees, and the man thrusts his penis deep into the vagina from behind. This way is suitable for a man with good physique and enables him to release the Yang Qi to the utmost.

The ape's way: while making sex, the wife should whirl around the penis with her buttocks lifted high. This way enables both man and wife to release their Yang Qi to the utmost. It is usable if both of them have a strong circulation of Qi.

The cicada's way: the wife bends forward on her knees, stretches the upper part of her body and lifts her buttocks high; then the man bends over her for deep and quiet penile penetration. There should not be penile thrusts. This suits a man with insufficient Qi and a woman whose Qi is rather strong.

The tortoise's way: the wife lies on her back with the knees bent and lifted high, which enables deep penile penetration. It suits a man with strong Qi.

The phoenix's way: the wife lies on her back with the legs lifted high. This way enables deep penile penetration and suits a woman with strong Qi.

The rabbit's way: both the man and wife lie on their backs, the wife being on the top to insert the penis into her vagina. This way is suitable for a man with strong Qi.

The fish's way: it is the female superior position. It suits a man with insufficient Qi. In addition, each side can take a side position for intercourse, which suits a couple whose Qi is insufficient.

The crane's way: the man takes a sitting posture, and the wife takes a standing posture. This way suits a man with insufficient Qi. Besides, the female posture is also up to whether her Qi is sufficient or not.

Bionics not only varies the sexual positions but brings health to people with illness as well. For instance, the cicada's way is best for a man who has heart or lung trouble; the fish's way suits a man who suffers slight impotence, because it reduces the syndrome of pelvic circulation hold-up, opens blood circulation and prevents impotence from occurring. Besides, lying on the right side is good for a woman with lung or heart disease; the crane's way suits a man with coronary heart disease.

Dong Xuan Zi (《洞玄子》) also has similar discussions on sexual bionics: "In intercourse, the man should thrust his penis to and fro like a gallant general on the battlefield, or up and down like a wild horse jumping across a stream, and like a huge sail puffed by strong wind; or seen and unseen like gulls playing over billows; or deep and shallow like birds pecking grains and like stones thrown to the sea; or slow like a frozen snake crawling into the cave; or fast like a frightened mouse dashing into the hole. The man can also look

up and bend his feet like an eagle seizing a rabbit. All these are imitations of animal copulation. *How to Unite Yin and Yang*, excavated from the No. 3 Tomb of the Ma Wang Dui Han Ruins in Changsha in 1973, says, "Sexual positions should be like a tiger's roaming, a cicada's bending; an inchworm's crawling; a river deer's goring; a locust's spreading its wings; a monkey's grabbing things; a toad's jumping; a rabbit's dashing; a dragonfly's gliding and a fish biting the bait.

Section 8 Sexual Periodicity

The periodicity of the decrease-increase theory dwells in the female menstrual period and male spermatic period. Therefore, the decrease-increase theory is significant to sexual periodicity. In principle, having intercourse regardless of the physiological period is a decrease, and having sex according to the physiological period is an increase. The male sexual period is shorter than the female one. On the average, three or five days form a male spermatic period apart from big individual differences. Actually, according to the phenomenon that sperm overflows only when it becomes full, there may be only one or two spermatic periods monthly for an adult. Besides, marital life shortens artificially the spermatic period, which heavily affects one's health. It is best for a man to have only two or four spermatic periods monthly.

The female sexual period is based on the menstrual period. A woman's libido reaches climax within seven or fourteen days after menstruation. At this period, the estrogen in the blood is the highest in concentration; the mucoid secretion in the uterus is secreta-

gogue, and the cervix has a higher temperature. This is a period of Yin-abundance. If the couple has intercourse at this proper time, the wife will develop voluntary sexual desires and obtain enough Yang Qi; meanwhile, the man will obtain enough Yin Qi. This is an increase. After ovulation, the estrogen in the blood decreases, and sexual desires are latent for a week before menstruation. At this period, the mucoid secretion in the uterus declines, and the cervix is dry and has a lower temperature. This is a period of Yin-deficiency. If the couple have intercourse now, the wife will feel it to be involuntary due to lack of libido; the man will be unable to obtain enough Yin Qi because the wife's libido has tidal rhythms.

Therefore, proper sexual periods depend on the female mainly. The best time for intercourse is within five to fifteen days after menstruation. The couple will both benefit from that. All in all, sexuality should be mainly based on the female sexual period with adaptations of the male one.

In addition, the time for intercourse is also up to the couple's Yin Yang conditions. On the average, those who have insufficient Yin Qi had better make sex at night; those who have insufficient Yang Qi may make sex in the daytime. Of course, other periods of time should be considered as well.

Sexual prohibitions:

The ancient people always emphasized sexual prohibitions. Many records prohibit having intercourse on negative days (days when there is a strong wind, heavy storm, extremely hot or cold weather, gloomy sky, solar eclipse, thunder and lightning) or at evil times, or under abominable environment and poor health, or when one feels tired, hungry and unhappy... *Secret Principles in Sexuality* says, "There are five prohibitions: the first one is to have

intercourse at the time of a crescent, half moon or gibbous moon. The future child must be deformed if pregnancy occurs at this moment. Be careful. The second one is to have intercourse when the universe is irritated by thunder and strong wind. If pregnancy occurs, the future child will suffer from abscesses, since the couple's blood circulation has already become chaotic. The third one is to have intercourse after drinking and overeating. At this time, the couple's vital energy from cereals is not in circulation, any sexuality will lead to either abdominal flatulence or whitish and turbid urine. Furthermore, the future child will suffer from mental disorders if pregnancy occurs. The fourth one is to have intercourse after urination. This is because the Qi in the body will become insufficient. Sexuality at this time will lead to an unsmooth pulse. Furthermore, the future child will be an evil spirit if pregnancy occurs. The fifth one is to have intercourse after exhaustion and hard labor. Sexuality at this time may lead to backache and lumbago. If pregnancy occurs, the future child will be deformed and die young.

Valuable Prescriptions also says, "Sex-makers should avoid the time of a crescent moon, half moon, gibbous moon, strong wind, heavy rain, thick fog, extremely hot or cold weather, thunder and lightning, gloomy weather, solar or lunar eclipse, rainbow or earthquake, ... Huang Di (Emperor Huang) said, "Anger makes one's blood-Qi go chaotic. Sexuality under such body conditions will cause abscesses. Having intercourse with a pent-up urinal urge makes one lose his facial color and suffer great penile pains; having intercourse after a long walk or exhaustion makes one suffer from the functional disorders of the vital energy, blood, tendons, muscles and bones. Pregnancy is less probable at this time. In addition, sexuality makes a woman ill if her menstruation is not over. (*Volume*

27, *Nourishing Nature*))

Ladies' Reference says, "the future child will be wise and free from illness if pregnancy occurs on an auspicious day with a clear sky, serene moonlight, fresh air and peaceful mental state." This suggests that sexuality at the proper time not only does good to the couple's health but has good influences on the next generation as well.

Section 9 The Decrease-Increase Theory in Sexuality

The application of this theory to sexuality mainly refers to the control of ejaculation and sexual movement. Accordance with physiological principles is regarded as an increase, the opposite will be regarded as a decrease.

The control of ejaculation has a great influence on the couple. Sexuality is the unification of Yin and Yang, the time of intercourse should be long. "Long" is an increase, "short" is a decrease. The couple should try to prolong the time before ejaculation, because the circulation of Qi and blood in the genitals is going fast at this time, blood vessels are also broadened to a large degree. The couple can obtain abundant Yin Qi and Yang Qi. The process in which the man is nourished by Yin Qi is called Yin-collecting by the Taoists. Sufficient Yin-collecting will be made impossible by early ejaculation. For the sake of Yin-collecting, the man should insert the penis deep enough to reach the cervix so as to stimulate the uterus. As a result, abundant mucoid fluid will appear, and Yin-collecting is enabled since the uterus is the origin of the Ren, Chong and Du channels

where the female Yin Qi originates. It is always believed that the man suffers a loss in intercourse, however, he can also benefit from it if there is a sexual harmony. The wife benefits a lot from intercourse of course, since there is a lot of valuable substance in sperm. As a matter of fact, the female mucoid fluid even nourishes the man more especially during ovulation. Take a report for example, Dr. Yazhong believes that the female mucoid fluid comes from the uterus at the time of orgasm, it is slightly-colored or transparent; its pH is 7.5 and weakly alkaline; the contents consist of protein (0.22%), sodium chloride (0.35%), calcium (0.095%), inorganic phosphate (0.31%) ... (*The Female Mucoid Fluid* translated by Wu Fan, Science Vision, Sept. 1988)

In addition, sex-making can not reach its aims if ejaculation takes place within five minutes (i. e. premature ejaculation), because sufficient Yin-collecting depends on a prolonged intercourse. Treatment: the man must withdraw the penis just before sexual orgasm, he will recover from that if he repeats this practice. All in all, it will be best if ejaculation takes place simultaneously with the orgasm from the both sides. Only in this way can sexuality be beneficial, since female orgasm arrives rather slowly. In treating premature ejaculation, the female superior position also works because the man feels less nervous with this position. In treating impotence, the man should insert his penis at the climax of foreplay, and withdraw the penis soon after. Impotence can be cured if the couple repeat this practice.

The principles for the Decrease-increase Theory in Sexuality

It will be an increase if the couple have intercourse on the peak of the female sexual period, the opposite will be a decrease. It is because sexuality is the unification of Yin and Yang, and Yang is

based on Yin. Sexuality can only be beneficial when the female side is paid much attention to.

The couple will obtain each other's Qi more if the time before ejaculation is made longer. It will be an increase if Yin and Yang can nourish each other. It will be a decrease if they can not. (for treatment, see the passage above). Then the man benefits from an intercourse with no ejaculation. *A Guide to Sexuality* says, "Sexuality with no ejaculation in the morning and at night will cure all kinds of ailments."

Involuntary sexuality is a decrease, the process from foreplay to sexual excitement is an increase. Sexual excitement refers to the following signs: a. when the wife's face becomes reddish, her breasts become stiff and her nose gets moistened, the man can insert the penis into the vagina slowly; b. when the wife begins to swallow her saliva, the man can shake his penis slowly; c. when the vagina becomes lubricated, the man can slowly thrust the penis deeper; d. when the wife's buttocks become moistened, the man can withdraw the penis slowly. The regulating Qi has not arrived if the penis does not erect, the muscle Qi has not arrived if the penis erects but does not swell, the bone Qi has not arrived if the penis swells but does not hardens up; the spirit Qi has not arrived if the penis hardens up but does not feel hot. It is improper to have intercourse under such penile conditions (*Xuannu Notes quoted by Effective Prescriptions, Volume 28*). *GuangSi Essentials* also says, "The man has three signs and the wife has five signs before intercourse. The man's three signs: the swelling and hardening of his penis signifies the arrival of the liver Qi; the swelling and hotness of his penis signifies the arrival of heart Qi; the hardening and ling-time erection of his penis signifies the arrival of the kidney Qi. The wife's five signs: her

heart Qi will come if her face becomes reddish and some tiny black spots appear over her eyebrows; her liver Qi will come if her eyes become glamorous; her lung Qi will come if she no longer talks and her nose becomes moistened; her spleen Qi will come if she nestles her neck against the man's neck and twists her body uncontrollably; finally her kidney Qi will come if her vulva opens and becomes lubricated with mucoid fluid. Now it is a proper time for intercourse.

In intercourse, gentle and slow movement is an increase; rough and quick movement is a decrease. Too frequent and violent sexuality exhausts one's sexual desires and drains up one's vital energy. *Sunu Notes* says, "Proper sexuality depends on shallow penile penetration and slow penile movement." *Secret Principles in Sexuality* says, "Violent sexual movement uses up one's Yin Qi." *Life-Nourishing Prescriptions* excavated from the Ma Wang Dui Han Ruins says, "Violent penile insertion and withdrawal put one's vital energy in disorder."

After intercourse, if one feels dizzy, sweats excessively, gasps heavily, has a throbbing heart and a burning feeling in one's abdomen and even suffers from genital convulsions, it will be regarded as a decrease. If one feels refreshed and happy after intercourse, it will be an increase. *Sunu Notes* quoted in *Valuable Prescriptions* says, "Sunu advises that it is better for a man of twenty if he has one ejaculation every four days; a man of thirty every eight days; a man of forty every sixteen days; a man of fifty every twenty days; a man of sixty every thirty days." The Taoist scripture *Yin Notes* says, "Sexual indulgence is just like a bone-cracking axe." It is a good warning.

Sexuality after illness, tiredness, hunger, anger, drinking and fury is a decrease. It may lead to sexual exhaustion. *Treatise on*

Exogenous Febrile Diseases has similar discussions on the Yin-Yang transformation after one's illness.

After intercourse, the couple should regulate their breath, exhale and inhale gently, and then fall asleep with pleasant meditations. It is better to have intercourse at night than in the daytime, because people need a long sleep to recover their vital energy.

In conclusion, the Yin-Yang theory and the decrease-increase theory in *Book of Changes* are significant to sexology, especially to sexual Qigong and periodicity. The further applications of the theories in *Book of Changes* will have a far-reaching influence on the development of sexology.

(Translated by Shi Gengshan)

Chapter Twenty-five

Book of Changes and Theory of Senility

Life is a process of birth, growth, prosperity, senility and death. Birth is followed by death in the long run. It is possible however to delay senility and to prolong life, although senility and death are uncontrollable natural laws. According to the theory of growth and decline between Yin and Yang in *Book of Changes*, life is a process where Yin and Yang change intermittently. The mystery of why life prospers and declines dwells in the life clock theory whose application has made new breakthroughs in delaying senility and prolonging human life.

Section 1 Modern Theories of Senility

There are over three hundred theories of senility. Birth is to be followed by death and no one can help it. Senility and death are a fixed program and a gradual process in biological evolution. Of course, saltatory senility also takes place due to some special reasons.

I . The life clock theory

This theory says that senility is programmed in every species of life. Life clock refers to the life code which is programmed at the time of fertilization. It is the result of biological evolution and cannot be controlled by an individual life. Therefore, an individual life can never extend the life span of its species although it may live longer or shorter. In other words, different animals have different life spans. People who hold this theory think that senility begins right at the time of fertilization, that senility has already started before a man's birth. In this case, senility and life are going on simultaneously. Another opinion holds that senility begins after life development stops.

The human body is made up of sixty thousand billion cells. The cell is the basic unit of life. The phenomenon that senility happens within cells suggests that senility is a gradual process of evolution and does not happen locally. Senility originates from the chromosomes of the nucleus, so it can be fixed by genes that carry this kind of information. In order to prove that senility takes place within cells, scientists have discovered that cells will be free from senility if they are frozen at 200° below zero with liquid nitrogen. Therefore, some people have tried to prolong life by way of freezing or lowering the temperature. In addition, a biologist even transplanted the nucleus of a long-lived mouse to the nucleus of a short-lived mouse. He found the short-lived mouse could live longer. This shows that senility is probably controlled by the life clock in the nucleus.

i. Theory of Cell Division

In 1961, an American named Hayflick found in a test on the diploid fibroblasts of human fetal lungs that the limit for cell division is fifty times and the period of division is 2.4 years. This limit is called Hayflick's limit. He believes that human cells undergo forty

divisions by adulthood and nearly fifty divisions by the age of seventy. He also found cells taken from aged people that only had twenty divisions before they died. This test shows that human life is controlled by the speed and period of cell division. Some Brazilian medical workers failed to treat senility by using the cells of a sheep fetus, because they could not change the limit of cell division. In this case, the nucleus' life is programmed and has its own controlling system which man cannot understand.

We also have some good news abroad about this project. A professor of medicine at Tokyo University has broken Hayflick's Limit. He observed that normal human cells seemed to divide numerous times and their division period was seven years longer than Hayflick's Limit. Hayflick's Limit is no longer a settled principle in human senility. An associate professor at Tokyo University also keeps fin cells which have been dividing for eight years (*The Mystery of Human Body* compiled by Shen Zhang, Changhong Press, Beijing 1989). So Hayflick's Limit is not absolute and hope for human longevity still exists.

Human life span is calculated in this way:

Cell divisions (50) × cell division period (2.5) = human life span (120 years).

Kirkwood also doubts Hayflick's Limit. He has found a special kind of cell in human diploid fibroblasts which appear at a certain frequency to influence Hayflick's Limit. These kinds of converted immortal cells increase by themselves. However, they are constantly destroyed by the immunocytes in the body. Why the immune system has to destroy these cells remains a mystery at present.

ii. The Length of Development Theory

Buffon, a biologist, held that a mammal's life is up to the

length of development. The life span is five or seven times the length of their development. Human development lasts for twenty or twenty-five years. Therefore, the human life spans are one hundred or one hundred and seventy-five years.

iii. The Length of Sexual Maturity Theory

Some scholars hold that life span is related to the length of sexual maturity. Mammals' life spans are eight or ten times the length of their sexual maturity. Accordingly, human life spans are calculated in this way:

Time of human sexual maturity (14 ~ 15 years) \times (8 ~ 10) = 112 ~ 150 years.

iv. The Variation Quotient Theory

A Russian scientist mentioned this theory in 1983. In his opinion, the variation quotient of nature is 15.15, and human life undergoes a major variation every eleven years. Therefore, human life span is calculated like this:

11 years \times 15.15 = 167 years.

The four theories have their own logic. The first three are rather convincing. However, there is no settled theory in this field.

II. Theory of Genes

By analyzing long-lived families and twins, people have proven that life is controlled by genes. In 1952, Medewer found restoration genes in the human body. These genes are able to monitor chromosomes. However, their function declines gradually as a person ages. Hart has noticed in his research that the restorative ability of aging cells is the lowest. This shows that senility is closely related to genes.

Life span is closely connected not only with the linear relationship (i. e. consanguinity) but with maternal longevity as well. Be-

sides, genetic longevity is quite conspicuous for the first son and first grandson in a family. This suggests that an individual life span is strictly controlled by the genetic information passed down from parents to children through the chromosomes in human germ cells.

Why must man become senile at a certain age? Why are senility and death so closely related to genetics? These questions make some scholars imagine that there exists on the chain of DNA a special kind of genetic information. Anyway, whether this information exists or not still remains a mystery.

Walter Green from the Barsell Institute, Switzerland, delayed the senility of a kind of fly called *Drosophila Melanogaster* by controlling its genes. In his opinion, senility is the work of regulator genes (rG) in the senility-controlling system. He first separated the regulator genes and injected a molecule into them. This molecule could dysfunction the regulator genes at a lab temperature slightly higher than usual. Then he transplanted these genes into the fly's eggs to see the influence on the new generation. The baby flies were divided into two groups. The first group lived at a normal lab temperature, and the second group lived at a higher lab temperature. The second group lived 40% longer than the first group. The reason was that the injected molecule had dysfunctioned the genes responsible for senility (*Reference News* May 29, 1990. Quoted from the French magazine *Youth's Journal*).

In addition, every species has its life span. For instance, man can live up to a hundred years; the tortoise can live several hundred or even a thousand years; chickens live only thirty years; a dog twenty years; and a mouse three years at most.

The discussion above makes it clear that the human life span is closely related to genetics.

III. Theory of Protein Decay

Life is a form of protein existence. Life originated from protein. Therefore, senility should also take place in protein. Those who hold this opinion believe that the root of senility lies in the cytoplasm. In other words, it lies in the change of proteins, not in the change of the nucleus. Some scholars think the histone of nucleoprotein can completely restrain all gene activity and senility will occur if histone loses control of the genes. During normal times, 90% of genes are restrained. When senility in cells occurs, non-histone undergoes a series of changes and activates dormant genes. In this way genes become in disorder and life heads for death fast.

In 1963, Orgel put forward the theory of disorder in protein synthesis. In his opinion, normal protein synthesis is impossible if any of its links have gone wrong. Errors in DNA duplication and transcription, in the insertion of amino acids to protein or in other links will result in abnormal protein. This abnormal protein will gradually dysfunction the cells where it accumulates. As a result, senility arrives soon after. Another scientist, Medvedev, holds the same opinion. He has found that the wrong arrangement of amino acids will result in abnormal protein accumulation and further senility. In 1970, Frolkis noticed that disorder in the genes of cells handicapped protein synthesis and checked life from going on. Then a cell biologist at Rockefeller University, U.S.A., found a special kind of senility protein in the cells of man's connective tissues. Senility arrives when this transformed protein appears.

In 1924, a scholar put forth the protein coagulation theory. In his discovery, the abnormal cross-linking in protein colloid will increase when a man is getting old. This increase will lead to tissue stiffness, poor cell permeability, low enzyme activation, loss of cell

elasticity and finally cell senility. In 1963, Bjovksten believed that cross-linking can also take place in the DNA of a nucleus. The damage may cause the double-helical structures of DNA to link each other and dysfunction macromolecules. As a result, cell senility is triggered.

In 1956, Harmen put forth the theory of free radicals. These kinds of hypo-oxygenized active free radicals may do damage to the cellular membrane and protein structure. This is because free radicals are charged with odd electrons and have strong free energy and the ability of oxygenization. In this case, peroxide bases and the hydroxyl group are easily formed and are likely to have peroxide reactions with protein, nuclear acid and fat. These reactions can change protein profoundly and lead to senility.

IV. The Brain Senility Theory

People who hold this theory think that senility happens not within cells, but in the brain. In their opinion, brain cells have the highest rate of differentiation and can not regenerate. Brain cells only decrease after one is born. After the age of thirty, there will be one hundred thousand deaths of brain cells each day. Medical workers have noticed that the chemical transmitter and RNA synthesized by the nerve endings of brain cells will decrease when one has reached a certain age, the rate of metabolism in brain cells slows down as well.

Another opinion is like this: senility comes early because the brain is developing fast even at the fetal stage. Generally, the brain develops much faster than the body does. The weight of the brain of a human fetus is already half that of an adult when it is only six months old. The brain also matures faster than the body after one's birth, and the brain weight almost reaches that of an adult when one

is only a child. This is the reason a child's head is not in proportion to his or her body. However, this opinion is not well-grounded, because physiological brain senility seldom comes earlier than body senility (pathological brain senility is exceptional).

In 1976, Franks and Finon discovered a senility-controlling center in the hypo-thalamencephalon and pituitary gland. The hypo-thalamencephalon is an important part of the CNS (central nervous system). It controls the endocrine system through the pituitary gland to balance the inner and outer environment of a man's body. Therefore, a breakdown in this senility-controlling center will put the endocrine system and other physiological functions out of order. In this way, senility takes place. In 1980, Evevitt suggested that the hypo-thalamencephalon was man's senility clock. By experimenting on animals, the American scholar Dencla proposed that the pituitary gland releases a kind of hormone regularly. He called these hormones of death. The hormones prevent human cells from making use of parathyrin, which leads to a disorder in protein metabolism and finally to senility. Dencla cut out a mouse's pituitary gland and fed the mouse various kinds of pituitary hormones. When the hormones of death were secreted before they were completely discharged out of the body, the mouse's life was prolonged.

Some scholars think that brown fat can easily accumulate in brain cells. Half of the space in brain cells has already been stuffed with brown fat by the time senility begins. In this way, the metabolism of brain cells is affected and senility arrives. In the opinion of some other people, the physiological and chemical metabolism of brain cells slows down or decreases rather easily; and sclerosis may appear due to quick lipid sedimentation on the cerebrovascular wall. All these propositions regard the brain as the origin of senility.

V. Other Theories of Senility

i. Theory of Endocrine Disorder

The endocrine system is an important monitoring system in the human body. It is also called the neuroendocrine system since it is controlled by the hypo-thalamencephalon and pituitary. Pituitary disorder affects senility very much although it is not the primary cause of senility. The endocrine system consists of the pituitary, adrenal, thyroid, gonad and thymus glands, and it will be in disorder if any of these glands suffers from hypofunction. Accordingly, this chain-reaction leads rapidly to senility. For example, the thymus will suffer atrophy due to lack of stimulation if gonad hypofunction occurs, and this atrophy quickly causes the arrival of senility.

In addition, the hormones of death secreted from the pituitary gland are also held responsible for senility because they can restrain the activities of the thyroid cells.

ii. Theory of Immunity

The immune system is an important network for body defense. A decrease in potent immunity and an increase in autoimmunity will lead to senility. The immune organs will decline as one is aging. This decline includes the gradual atrophy of the thymus gland, and the degeneration of the spleen and lymph gland. To put it concretely, this refers to a decline in the activation of T-lymph cells, in the number of the whole lymph cells and in the immuneability of body fluids. Now it has been discovered that a number decline in lymph cells foretells death, and this number decline is especially remarkable in the last three years of life. Perhaps it is set by the life clock.

In 1962, Wohord announced the theory of autoimmunity. In his opinion, the immune system will repulse by mistake what it should defend when it has lost its monitoring function. Therefore, a

series of destructive reactions will follow. For example, it will not curb abnormal cell division. Instead, it will destroy normal cells. In another word, the defensive system has become a destructive system, and senility results.

These are the modern theories of senility.

Section 2 Taiji Life Clock of Eight Trigrams and *Book of Changes*

I. The Meaning of the Taiji Life Clock of the Eight Trigrams

Human life is a process wherein Yin and Yang change intermittently as well as being a programmed Taiji life clock of the Eight Trigrams (See figure 25-1).

From the Taiji life clock, we can see that Yang Qi begins to grow from six o'clock in the morning, speeds up its growth from nine o'clock in the morning and reaches climax at twelve o'clock at noon. Meanwhile, Yin Qi begins to grow at the Yang climax. Then, it hastens its growth from fifteen o'clock with the arrival of senility and reaches climax at eighteen o'clock with the arrival of death.

According to the Taiji theory that Yin and Yang change intermittently, senility and death are unavoidable in the process of life. Yang Qi rises to indicate the beginning of life, then Yin Qi develops soon after. Accordingly, the abundance of Yin Qi leads to death. Yang Qi will decline when Yin Qi prospers. Just like Yin Qi and Yang Qi, life and death are contradictorily united and death is unavoidable as the result.

The Taiji life clock stresses that birth and senility develop ac-

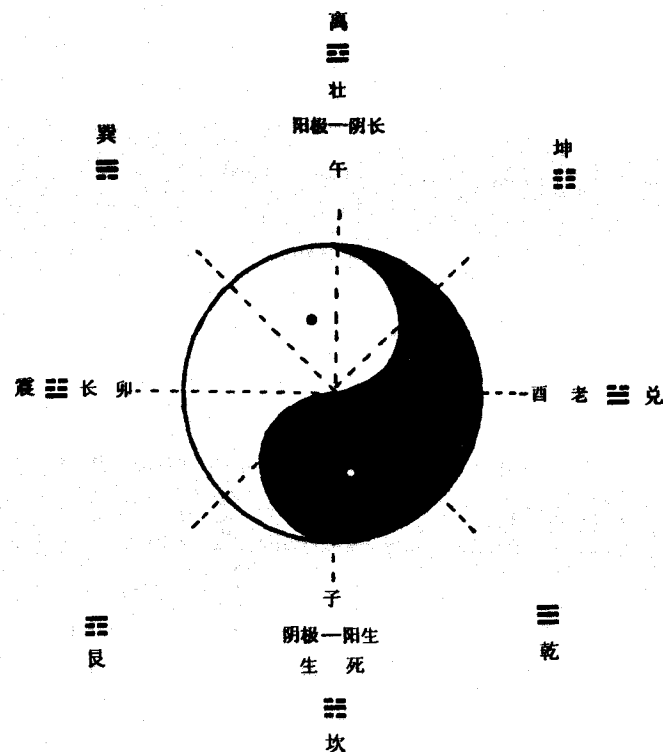


Figure 25-1 Taiji life clock of the Eight Trigrams

Notes to this figure:

乾 Qian 兑, 老, 酉 Dui, senility, You (15:00p. m.) 坤 Kun
离, 壮, 阳极—阴长, 午 Li, peosperity, Yang climax—Yin originating, Wu (12
o'clock)
巽 Xun 震, 长, 卯 Zhen, growth, Mao (9:00a. m.) 艮 Gen
坎, 生, 死, 阴极—阳生, 子 Kan, life, death, Yin climax—Yang originating, Zi
(6:00a. m.)

ording to the Taiji life function which goes from Yin climax to Yang initiation. The process from growth to senility goes as the

Taiji life clock goes.

Growth and senility also exist in the universe. Cosmic explosions create new heavenly bodies which continue to undergo swellings and contractions. The term "black-hole" refers to a decadent and contracted heavenly body which will explode into a new one in ten billion years. Of course, it takes a very long time for each cycle. This shows that senility is a natural law and nothing can avoid it.

Since everything has Yin and Yang change, senility and death will exist by any means. Therefore, human life must abide by this natural law.

II . The Significance of the Taiji Life Clock of the Eight Trigrams for Anti-Senility

There are three concepts as to when senility starts. The first says that it starts right after the time of fertilization, because a baby looks just like a little old man. The second holds that it begins after sexual maturity, because some animals die or become senile shortly after copulation and egg-laying. The third holds that it will start when man's development period is over.

According to the theory of the Taiji life clock that Yin Qi starts after Yang Qi reaches climax, senility should begin after Yang climax, or after twelve o'clock on the map of Taiji. As far as the Later Arrangement of King Wen is concerned, senility sets out from Brightness which is the Yang climax. Therefore, *Book of Changes: Brightness* says, "The sun is declining, this shows that Yang Qi begins to decline as well."

Human life is just like a Taiji life clock of Eight Trigrams. A longer life takes man more time to reach Yang climax. Meanwhile, it takes man more time to reach senility as well. Every species has

its own life span. Man has a long life span of one hundred or one hundred and twenty-five years. The *Emperor's Canon of Medicine* believes so. *Spiritual Pivot: On Human Life Span* says, "Upon reaching the age of one hundred years, man's five viscera will suffer asthenia, his spirit and energy will be gone; his body will pine away. Man will die soon at this age." According to the Taiji theory of the Eight Trigrams, man reaches Yang climax at the age of fifty if his life span is one hundred years. His senility starts at this age. Or, man reaches Yang climax at the age of forty if his life span is eighty years. His senility begins at this age. Sexual maturity is completed at nine o'clock in the morning on the Taiji life clock. This period of time does not belong to Yang climax, therefore, senility is impossible. For instance, a girl reaches her sexual maturity at the age of thirteen or fifteen while a boy reaches his at the age of fifteen or seventeen. This flowering age is free from senility. The theory that senility begins after man's development also has weak points. This is because senility will not come at the age of twenty—a young age when man's development period is over. Even a man with a short life of sixty will not reach Yang climax until the age of thirty. This age is characterized by physical, intellectual and reproductive exuberance. According to the Taiji life clock, senility should occur when Yin originates from Yang climax (i. e. when one is thirty, forty or fifty years old). On the Taiji life clock, Yang Qi still occupies a dominant position from twelve to fifteen o'clock, although it decreases and Yin Qi increases. From fifteen o'clock on, Yang Qi is overpowered by Yin Qi and senility gathers speed. Finally, death arrives at eighteen o'clock. This is the light thrown on the origin of senility by the Taiji life clock of the Eight Trigrams.

Senility starts from Yang climax. This notion suggests that se-

nility will be delayed if the Yang climax is delayed by prolonging any of its proceeding stages. Therefore, man should try to slow down the speed of cell division at his middle age. However, modern man pays no attention to the delay of Yang climax, he overuses Yang Qi before his middle age, which shortens the period of cell division. In this case, Yang climax and senility will arrive at an early age. For instance, early cares, marriage, child-raising and overwork will all result in early senility. It is no wonder that a world-class boxing star pines away early due to over-excitement in his middle age. So man must keep his labor from breaking his body's physiological limits. Only in this way can he delay Yang climax and senility.

III. The Origin of Senility

According to the Taiji theory that Yin and Yang change intermittently, senility is the result of Yin increase and Yang decrease. Here, Yin does not refer to the physiological Yin Qi, it refers to the pathological Yin Qi. Yang Qi controls the dynamic state while Yin Qi controls the static state. The increase in the pathological Yin Qi consists of the decrease in the dynamic Yang Qi and the increase in cellular metabolism, in the activation of metabolites and in controlling abnormal cells ... Especially, the appearance and increase of these inert substances will make cells work with even greater difficulty.

Modern medicine has noticed that some inert substances may appear and accumulate in cells as man is aging. Those substances can handicap cellular metabolism. For example, brown fat may appear abundantly, genes may accumulate due to a histone increase; the hormones of death secreted by the pituitary gland may accumulate to prevent cells from using parathyrin; the abnormal protein synthesized by mistake as man is aging will also gather in cells (that is the

occupation of cellular cavities. Metabolic wastes may handicap normal cellular metabolism and cause senility); abnormal cross-linking may damage the cellular permeability of the connective tissues; cross-linking may occur in DNA to undermine cellular activation; some genes of senility may appear on the chains of DNA; a kind of dehydrate metabolite may show up in the blood capillaries to obstruct the flow of body fluid and to slow down metabolism; cellular activation may be weakened by a decrease in acetylcholine which is a kind of transmitter in the brain; the sedimentation of cholesterol and other lipoids on the vascular wall may affect blood flow; the body may be over-burdened with fat... All these suggest that cellular activity will go out of order when cellular activation is reduced and many inert substances will come into being. As a result, senility develops when life does not go smoothly. In a sense, senility is a process where the increase in Yin Qi forces a decrease in Yang Qi.

Life depends on activity. The cell is the basic unit of life. Cellular activity is the basic form of life activity. Senility will surely arrive if cellular activity goes wrong. Therefore activity is the fundamental form of matter's existence. Keeping and restoring normal cellular activity should be the principle for anti-senility, since abnormal cellular activity leads to senility.

In addition, the fact that the human body still exists at the moment of death should be mentioned. It proves that death is the end of Yang life information and the beginning of utter Yin life information. The so-called "haunting visions" are the remaining cinders of Yang life information. The end of Yang Qi marks the end of life activity, but it does not signify the material loss of the human body, since all the substances and energy in the human body have come from the universe and will go back to the universe to form new

things. That is the law of conservation of matter. They may form a new species of life, but they will never repeat the last form of life where they have been. The continuation of the whole species is made possible by numerous individual births and deaths.

IV. Can Senility Be Delayed?

Senility can be delayed. The human body has great potentialities. Man has used only 20% of his brain cells by the time of senility, and the rest still remain undeveloped. Meanwhile, only 20% of the micro-circulation which occupies 90% of the length of all the whole blood vessels has been opened; in addition, 50% of the double bond DNA molecules in genes have remained dormant; the endocrine system, digestive system and cardiac muscle fibers are all potentially powerful. So anti-senility has a strong material base.

According to the Taiji theory that Yin and Yang change intermittently, Yang will originate from Yin climax and rejuvenation is possible. There are some cases of this in the world.

The first one: a woman of seventy regained menstruation and got pregnant twice. (She is called Cai Aixiu and lives at Yueguangtang village, Longtanqiao town, Hanshou county, Hunan province Source: *Kaleidoscopic World* P₇₁, Yu Hong).

The second one: in 1981, a woman of a hundred and nine was dying of a fatal disease. Then she regained her consciousness, black hair, menstruation, smooth skin and new teeth. Finally, she got rejuvenation. (the woman is called Yu Jinyan and lives in Feiyuan Street, Changsha, Hunan province. She was born in 1872. Source: *On Health and Longevity*, Tianjin Press of Sciences).

These cases are individual mutations, since both normal changes and mutations are possible in the development of things. However, one single case may invite more cases to take place, be-

cause people's life bases are the same. The possibility of rejuvenation still exists although senility and death are unavoidable.

According to the Taiji theory that Yin and Yang change intermittently, Yin Qi will originate when Yang Qi reaches climax. Therefore, life will be prolonged if Yang climax is delayed by prolonging any of its preceding stages. Especially, the stage before nine o'clock in the morning on Taiji life clock (i. e. the stage before sexual maturity) should be prolonged. It is best to speed up the development of one's intelligence and brain at a younger age. In fact, the brain is ready for work in one's childhood, and sexual maturity will be delayed if one focuses on the development of their intelligence and brain. This is because the arrival of sexual maturity will hasten the arrival of Yang climax. Two British neurophysiologists also hold that the senility of brain cells will be slowed if the brain works early and steadily; longevity depends on an advanced brain, since the brain is the CNS of man's body. It is no wonder that *Book of Changes* says, "The body will not become senile if the brain remains energetic and healthy."

Section 3 The Brain and Anti-Senility

The speed of brain senility is the slowest among human organs, since the brain has great potentialities. From the age of thirty, thirty thousand or one hundred thousand brain cells die each day, one thousand nerve cells fail to work each hour; and a million nerve cells die each year. However, 80% of brain cells still remain undeveloped by the time of old age, which shows that the brain is potentially

powerful.

More encouragingly, scientists have proved through tests on animals that brain cells can revive. An American scientist, Philip Diamond, has found that an aging mouse will develop new nerve roots if it is trapped in a threatening and confusing environment (a place where there is a cat). This kind of environment enhances the hyperplasia of membranous cells which urge the intelligence cells in the brain to develop. This experiment throws light on human anti-senility although it was done on animals.

Some scientists are aware of the fact that man's brain has been gaining weight in this century. This discovery also provides the possibility for brain revival. Another discovery is that female brain cells begin to decline at the age of forty, but the speed slows down after the age of fifty, becoming even slower than that of male brain cells. This shows that cerebral activation has cycles in human life.

In the past, death was determined on the basis of the failure of one's breath and heart. Now it is based on one's brain waves. Some tests on an amputated human head have been carried out. It is recorded that an expert in microsurgery managed to keep an amputated human head alive for six days, and its reasoning ability lasted for seventy-six hours. Another head severed from a body which had been frozen for sixty years could even answer questions after electrical stimulation (*Mystery*, March, 1990). Some scientists are trying to rejoin a severed head to its body; some countries even are doing research on head transplantation. All these experiments show the brain is rather powerful.

The brain is the CNS of man's body. It plays an important role in controlling life activities. *Book of Changes* says, "Qian represents what is originating, the superior man." Nothing can exist without a

controlling center. Therefore, the key to anti-senility should be the brain. Other parts of the body will live longer if anti-senility in the brain is successful. TCM also puts great attention on the brain's influence in the whole body. The *Emperor's Canon of Medicine* says, "The brain is an organ where wisdom and spirits originate. It is the controlling center for the eleven internal organs. These internal organs will be at stake if the brain fails to work properly. Brain damage may trigger spirit damage which soon invites the arrival of death. These words make it clear that the brain controls all the other important systems in the body, and anti-senility in the brain has profound significance. Some documents hold that man's brain development is proportional to man's life span. Therefore, man lives the longest among the mammals because man's brain is most advanced.

How to avoid brain senility? The principle is to use the brain. A Chinese saying goes like this: A boat sailing against the current must forge ahead or it will be driven back. Cells responsible for social activities will become senile soon after one's retirement. So the brain should be used quite often to delay senility.

Cells are rather vivacious and energetic. However, life depends on activity, more use of the brain makes one cleverer. *Book of Changes* says, "Regeneration is up to activity." A test on an aging mouse was made by some American scholars. It suggested that a comfortable environment made the mouse use its brain less. As a result, the mouse did not regenerate its nerve roots.

The headquarters of man's physiological clock lies in the brain (it has been proved that it lies in the superior opticochiasmic area and is controlled by the hormones secreted from the epiphysis). Each cell has its minor clock, of course (for instance, a cell will not die immediately when it is severed from the main body), but this in-

dividual clock is controlled by the headquarters and will go wrong if the headquarters loses its control. Therefore, using the brain frequently is the key to anti-senility.

The brain has great potentialities. Senility is only a partial activity. Anti-senility in the brain has a bright future. In recent years, some scientists have found in split brain studies that man's left brain controls language and abstract reasoning while the right brain controls music and art; consciousness exists in the left brain while sub-consciousness exists in the right brain; consciousness and sub-consciousness can meet in dreams. Scientist have also found that both the left brain and the right brain have dual functions. The right brain also has reasoning ability although it mainly focuses on concrete feelings or art. Why is man still able to reason in a subconscious state such as in dreaming or other mental activities? This is because the right brain is working at the same time. This provides us with a theoretical base for developing the reasoning cells of the right brain. Many significant discoveries have not been made in the lab. For example, Archimedes' principle was discovered in a bathtub, the law of universal gravitation was discovered under an apple tree, the structure of benzene was discovered in a dream... . Anti-senility in the brain will be probable if the right brain is developed and used in turn with the left brain.

The brain's extraordinary power is proved by the Qigong masters' unusual faculties. These faculties include moving things by meditation, remote sensing, looking through man's body and locating mineral deposits... . These wonders symbolize the brain's evolution although they only appear to a few people. According to the recapitulation theory, an individual development is a short and quick recapitulation of its species' evolution. These unusual faculties may

exist in all the human beings, if they exist in some individuals. In this case, they are dormant in a majority of people. What is the use of those unused brain cells which occupy 80% of the brain's cavity? Therefore, the brain's unusual faculties are worth developing. A new era in the life sciences will arrive if they can be decoded.

At present, a proposition goes like this: some people's unusual faculties have been granted either by aliens in outer space or by some civilized creatures prior to the human race on the earth. Some people even believe that man came from outer space. A NATO scientist holds that man is the result of the breeding of a primitive ape-man and aliens who came to the earth sixty-five thousand years ago. His proof is a fifty-thousand-year-old skull of high intelligence which he discovered in Santiago. He also believes that the gigantic rock carvings in the Andes Mountains may have been left by a UFO landing on the earth (source: *A Kaleidoscopic World*, Yu Hong, Cai Shaowen). The tenth Living Buddha in Tibet was a man with unusual faculties. Why was he chosen to be the reincarnate baby Buddha in his childhood? One of the reasons is that his unusual faculties made him recognize the things the ninth Living Buddha had used and the people the Buddha had approached when he was alive. People capable of remote sensing and foretelling can be found in many countries. Furthermore, some primitive clans who live in virgin jungles may possibly possess more unusual faculties. During WWII, it is said that a certain country made use of some jungle-dwellers to carry out searching work. On a plane, these people could search for the targets on the ground even more efficiently than a telescope.

These unusual faculties suggest that the brain's potential intelligence can be surely activated. Man can subconsciously recall things which happened in the long past, even things just after his birth.

However, it is not easy for him to do this consciously. Therefore, it shows that unusual faculties exist in the 80% of the undeveloped brain cells (especially in the right brain). Sufficient use of the brain can avoid senility. Especially, the brain should be used both consciously and subconsciously. In short, the brain is significant to anti-senility.

Cerebral Qigong is also valuable for anti-senility in the brain (for details see Chapter Seventeen). Practising this kind of Qigong not only makes one wiser but also activates the brain's potential intelligence.

Section 4 Life Recapitulation and Anti-Senility

Can life recapitulate? Can time go backwards? The answer is "Yes" under certain conditions. British scientist Stephen Hawkins believes that the cosmic explosion and extraction are a super-long cycle of motion. When cosmic explosion occurs, time is swelling and positive; when cosmic extraction comes after a cosmic explosion, time is negative or goes backwards. Take the solar system for example. The sun is at its swelling stage with a high temperature and looks like a fireball. The earth is greatly influenced by the sun now. On earth, time is positive and man lives from youth to senility. After a certain period, the sun will begin to collapse into a black-hole. Time at that moment will be negative and will go backwards. Man will also revive if he meets this opportunity. Of course, it takes billions over billions of years for things like that to happen.

Another proposition on rejuvenation goes in this way: time is a

kind of matter or field. It can be controlled, reversed and returned. This proposition is preached by a former USSR scientist. He believes that time matter can give off a kind of particles which are the media for time information. The more things receive these particles, the older things will become. That is how senility operates. Things will revive if the time particles radiated to their bodies can be removed. By using a quartz resonator, this scientist also found the speed of the time particles radiated to a sleeper was slower than that to a non-sleeper. So people can control time just as they can control temperature or pressure. (source: *Time Is a Kind of Matter Which Can Be Diverted* quoted by Zuo Ran in *Daily of Science and Technology* June 3, 1989).

The theory of returning to the origin was fully discussed in *Book of Changes* three thousand years ago. For example, *Tai (Peace) trigram of Yi* says, "Every motion has a return." The *Great Treatise on Yi* says, "The sun goes and the moon comes; the moon goes and the sun comes... the cold leaves and the heat comes; the heat goes and the cold comes." Therefore, every motion in the universe is characterized by periodicity. Of course, motion periodicity does not refer to going back to the same old form in the same way and at the same time. It is an improved and collective, not a concrete and individual repetition.

The universe has periodic swellings and contractions. Life has periodic comings and goings, as well man's sexual cells—genes make periodic motion through fertilization. In other words, the living world, including man, cycles between birth and death as a whole, not individually. Otherwise it would lead to idealistic circularism, not to materialism. That is the reason why a few rejuvenated old people cannot avoid senility and death. This also applies to those famous

Qigong masters.

Laozi says, "Motion is characterized with periodicity." It regards periodicity as a principle for motion in the universe. Laozi said, "Gather one's meditative power and bring mild stimulation to the brain; then, man will feel like going back to his babyhood." That is subconscious rejuvenation under Qigong.

Man can go back to the first stage of his life (e. g. the fetal stage) subconsciously in Qigong practice, since his consciousness is also periodic. In the nineteenth century, Haeckel, a German biologist, put forward the law of recapitulation, i. e. an individual development is a short and quick recapitulation of its species' evolution. However, Haeckel only noticed the recapitulation of life, *Book of Changes* and Laozi propose the recapitulation of one's consciousness. In practice, Qigong masters have shown that man's consciousness can return to his babyhood which is a primitive stage free from desires and evils. This life rejuvenation is available because the brain can be stimulated by mild meditations and those dormant brain cells can be woken up to perform their primitive functions. Therefore, life rejuvenation under Qigong refers to the revival of man's innate energy and his degenerated faculties as well as a delay in man's senility. It is scientific, materialistic, practical and most convincing. It is completely different from idealistic immortality.

Immortality is impossible because only a little life information remains after one's death. Yang life information will completely perish from people who die of senility or an illness. The so-called ghost after one's death is simply an recurrence of one's remaining life information under certain circumstances. For example, some kind of light may appear because light matter or other unknown matter exists in a man's body. Only those who die unexpectedly or under an

unjust charge may preserve some Yang life information, since a sudden death will not consume all of his Yang Qi, and an unjust death will strongly stimulate the body to emit a lot of Yang life information. This remaining information may show up under certain circumstances. Of course, these are only some hypotheses. If the development of science is advanced enough to re-cast a corpse' remaining life information, the mystery of "haunted visions" will be decoded.

Besides, rejuvenation is not always auspicious. Sometimes it is just a momentary recovery of consciousness before death. A patient who has been ill for a long time may suddenly develop good spirits and black hair, but he will suffer more serious senility soon after.

Section 5 Dynamic Qigong and Anti-Senility

The truth that life depends on motion is ever-lasting.

Dialectical materialism believes that motion is the form of matter's existence. It is the fundamental nature of matter.

Motion is absolute, rest is relative. Motion and rest are contradictorily united. Rest is only a special form of motion. In other words, motion is unconditional, everlasting, universal and absolute; while rest is conditional, temporary and relative. In regard to the relationship between motion and rest, dialectical materialism believes that motion takes a dominant part in a contradictory unification, although motion and rest are mutually reliant.

Life is in motion all the time. From a macroscopic point of view, a man who lies in bed still circles around the sun with the

earth; microscopically, numerous electrons in this man's cells are spinning around nuclei ceaselessly; all the physical and chemical activities in his cells or organs are going on at a reduced speed; the heart waves and brain waves are still marking curves... All these suggest that motion in life is absolute and everlasting, rest is only relative and conditional.

The fact that life depends on motion aims at strengthening Yang Qi and erasing inert Yin Qi, while the fact that life depends on rest aims at saving energy for a longer period of cellular activation.

Proper exercises are significant to cellular activities. Some negative and inert substances will increase in man's cells and handicap normal cellular activities when he is in middle age. At this time, proper exercises can speed up the circulation of blood and Qi to help the body discharge the increasing inert substances. In this way, self-poisoning is reduced and senility is delayed.

In order to set life in better motion, dynamic Qigong is needed. It is called "dynamic" because both the body and the spirit are in motion, or the inner body and the outer body are in motion. It is different from static Qigong which only sets the inner body in motion. It is especially suitable for obese and middle-aged people since it can speed up blood circulation and erase the wastes that stuff cellular cavities. Besides, only fifteen or thirty minutes is needed for practice and the time can be prolonged a little as days go by.

By speeding up blood circulation, dynamic Qigong is able to stimulate and open the microcirculatory system where the exchange of life necessities takes place. The length of the microcirculatory vessels is 90% of the whole vascular length, but only 20% of them are open to use. Therefore, the microcirculatory system has great

potentialities and is enough for man's life-long use. Sufficient use of this system may speed up blood circulation and purge metabolic and pathological wastes that narrow or block many blood vessels.

It is best to practise dynamic Qigong in the morning, because it can help the body generate Yang Qi. Dynamic Qigong should be controlled by motion, meditation and breath regulation. It is easy to practise this Qigong. First, choose any form of motion (running, jumping, walking, swimming or cycling); second, regulate the breath (chest breathing and abdominal breathing should be adopted alternately); third, and most important, complete a minor circle of Qi and a major circle of Qi by using meditation to guide the Qi to connect various channels and vessels, i. e. guide the Qi from the Baihui acupoint downward along the face, the central part of the chest and the abdomen (the Ren channel) to the vulva; then move the Qi upward along the central part of the back (the Du channel) to the top of the head where the Baihui acupoint lies; after that, guide the Qi downward again to complete a minor circle of Qi. Since dynamic Qigong requires more strength than static Qigong does, it is easy to connect the Ren channel and Du channel; besides, the twelve channels can connect to one another by themselves due to the moving of the arms and legs. In this way a major circle of Qi is automatically completed. At this time, one should increase one's strength gradually and cherish good hope. Good hope is a Yang stimulation which increases the production of Yang Qi in dynamic Qigong.

All in all, dynamic Qigong is noted for time-saving and quick effects. Many people will be discouraged if they have to spend several hours in practising static Qigong, since time is limited and people have many things to do after eight hours' work. The best solution is

to practise dynamic Qigong and static Qigong in turn; i. e., these two kinds of Qigong can be practised alternately in a week according to one's personal conditions. Those who have a poor physique and enough time can practise static Qigong more, while those who have a sound physique and inadequate time can focus on dynamic Qigong.

Section 6 Yang Qi and Life

The ancient Chinese character for Qi has the sense of fire. Therefore, Qi can provide life with driving force.

Book of Changes says, "Essence and breath form things, and the disappearance or wandering away of the soul produces the change of their constitution", "The lines change and move without staying (in one place), flowing about into any of the six places of the hexagrams" (*Great Treatise on Yi*). It stresses that Qi is a kind of matter which flows in the universe. Such a deep understanding of Qi coming from several thousand years ago is advanced and even up to present-day thinking. Zhang Zai, a person in the North Song Dynasty also said, "The universe cannot be without Qi; all the things cannot be without the accumulation of Qi."

Yang changes into Qi while Yin changes into form. Qi is a kind of Yang matter and has driving power. It is also called Yang Qi, while form is called Yin form. Qi is divided into congenital Qi and postnatal Qi. An ancient medical book says, "One will feel intoxicated after the attainment of these two kinds of Qi." Both of them are capable of life activation.

TCM believes that things move in their formation and transformation made by the functional activities of Qi. Congenital Qi dwells

in the kidneys and functions as a base for life activities. The *Emperor's Canon of Medicine* says, "Congenital Qi comes from the universe and nourishes the body along with the energy derived from food." (Source: *Spiritual Pivot*). *Nan Notes* says, "The gate of life is the dwelling place for all kinds of nerves as well as congenital Qi." Congenital Qi consists of heart-lung Qi, spleen-stomach Qi, kidney Qi and channel Qi.

In Qigong, Qi is also divided into an inner part and an outer part. What a person guides in Qigong practice is the inner Qi which flows up and down inside the body. The outer Qi flows outside the body. These two kinds of Qi are exchangeable and controlled by one's consciousness. They are a unification of matter, energy and information.

Yang Qi teems with life information. Therefore, its functions cannot be understood as a kind of physical energy. Life will come to an end if Yang Qi is drained out, since it is the driving force for life activities. In this case, it is important to protect Yang Qi and to reduce its consumption in fighting senility.

Recently, a one-thousand-year-old tortoise has been on display in Guangzhou. It means a lot to life activity. Dynamic life and static life, as well as motion and rest, should be reasonably in balance and cannot be separated from each other. To stress only motion regardless of the principle that life depends on rest is one-sided and not dialectical.

There are a lot of ways for static cultivation in traditional Chinese Qigong. Static Qigong is one out of many. It has far-reaching significance in protecting Yang Qi and prolonging life. (for details see Chapter Sixteen *Book of Changes and Chinese Qigong*).

Section 7 Water and Anti-Senility

Both the He Map and Luo Writing hold that everything, including life, originated from water. *Book of Changes* says, "water is the origin of all the things in the universe." Other ancient Chinese writings have mentioned the same words.

Darwin, a great biologist, proposed that man came from the ape in his book *On the Origin of the Species*. Other scholars abroad guess that man come from an amphibious ape, or further, from a fish. The ancient Chinese people had already noticed the consanguine tie between man and the fish in the Yangshao Culture that existed six thousand years ago. On the clan insignia at that time, there are two fish at a predominant place and a human face caught between the fish's snouts. On the bottom of a water-sprinkling bronze basin which was made three thousand years ago there is a carved image of four carp and four lines taken from the He map. Therefore, the basin has made *Book of Changes* well-known in the world. The fish is also a totem for some ancient clans in China.

The fish cannot live without water, while man now lives on land after a long time's evolution. However, apart from oxygen, water still remains a necessity for human life. Man can manage to live for several weeks with no food, but only for three days with no water.

Water must have something to do with the origin of senility since it is so closely related to life activities. Palestinian scholars have noticed that senility will come if the body fluid becomes unbalanced. Abnormal body fluid may yield a kind of dehydrate metabolite which

accumulates in the blood capillaries, slows down blood flow and retards cellular metabolism. In this way senility arrives. The colloid of cellular protoplasm is also important. Life activities will be hindered if this kind of colloid becomes abnormal and cannot combine with necessary water molecules which are the media for cellular metabolism. Senility will also arrive if cellular metabolism breaks down due to lack of water. Therefore, water is rather significant to life.

Water quality matters to life at the same time. Long-lived people always dwell in places that boast of high water quality, minerals and trace elements favorable to cellular metabolism. On the contrary, people are likely to catch various illnesses in places notorious for poor water quality. The ecobalance in many places has now been destroyed, and the water quality there is rather poor, which affects man's health. So water protection is a key to anti-senility.

Water is a kind of Yin matter. It produces anions which are good for health. Man should not only drink water but "breathe" water as well. In other words, man should inhale a lot of anions by practising Qigong or deep breathing at the seaside or on the riverside. This practice benefits cellular metabolism and prolongs life. It is reported that some former USSR scientists prolonged a mouse's life by 50% through raising it in an anion-rich environment.

Life is the form of protein's existence which is conditioned by water. 80% of man's body is water. Water functions as the media of matter exchange.

Water is called "fluid" in TCM. Wu Jintong, a doctor in the Qing Dynasty, said, "The preservation of body fluid is the preservation of man's life." He greatly emphasized the significance of body fluid. The TCM doctors have created many life-nourishing ways to

preserve body fluid. Saliva-swallowing is an example. Saliva is composed of thin fluid and thick fluid; it is closely related to the spleen and the kidneys. The kidney Qi will be powerful and abundant if saliva secretion is normal. The reason why saliva-swallowing nourishes man's life and delays senility lies in the fact that saliva originates from the kidneys. A record in an ancient book goes like this: a young lady became haggard and spiritless. Her doctor checked her body and decided it was not due to any emotional reasons. Later, he found a lot of peeled watermelon seeds at the gate and realized that the illness resulted from a heavy loss of her saliva. Then he asked the errand-girl to soak the peels in water and let the lady drink the water. Finally her skin became smooth again and she recovered. Another record says a man accidentally fell into a dry well. He swallowed his saliva all the time before someone came to his rescue. In this way he survived. These records manifest the strong influence on life activities of body fluids.

Body fluid is divided into intracellular fluid and extracellular fluid (blood and interstitial fluid). The change of body fluid is detected by plasma whose reservoir is interstitial fluid. Through electrolytes, both intracellular fluid and extracellular fluid keep a certain physiological osmotic pressure so as to make the blood not too thick nor too thin. Therefore, one should take some water in the morning and at night to dilute the blood density and to hasten the discharge of body wastes. This is especially good for those who suffer from a high level of blood-lipids and cholesterol. Man's skin, respiration, nine orifices, urine and bowel movements consume a lot of water each day; however, the bowels and the kidneys can make part of water recycle to keep body fluid in balance. There is no need to drink water excessively. Otherwise, the heart and the kidneys will

be overburdened.

Some scholars abroad now advocate child delivery in water. They believe the amniotic fluid in the womb is just like a small sea. Man should be born in the sea since he has developed in the sea. Through tests, they have found a baby will adapt itself to nature more easily if it is born in water.

All in all, water has a firm connection with life activities.

The discussion above suggests that the theories in *Book of Changes* are significant in directing the theory of senility. Especially the unification of motion and rest theory, the Taiji life clock theory and the reverse motion theory throw new light on senility, which has been one of the toughest challenges to human beings.

(Translated by Shi Gengshan)

Chapter Twenty-six

Book of Changes and Acoustics

Section 1 Essentials of Acoustic Information

Sound, which is produced in the course of the motion of matter, is a kind of energy; it is also a life signal. Everything in the physical world can produce energy in its motion, and when this energy is being released, sound is produced. Sound also represents the extent of the motion of matter. The greater the extent, the louder the sound. All matter has the property of wave motion. Sound is the travelling of waves transmitted through the air from a source to the hearer. Sound waves are longitudinal waves, which, when in the air, can create frequency of sound waves in the human ears, ranging about 20-20,000Hz. Apart from frequency, sound waves have amplitude and wave length as well. As a matter of fact, the transmission of waves is the transmission of energy. That is, sound waves carry power with them.

Generally speaking, the speed of sound waves is determined by the ratio of the intensity of pressure to the corresponding density. So sound waves travel much faster through solids than through the air. That's why by lying down on the ground and listening to the rails

one can hear the coming of a train in advance. As sound waves travel the farthest in water and at a speed of 1,411 meters per second, sonar takes soundings by means of refracted sound waves in water.

Since sound waves are refracted by any barrier they meet, they are employed in medicine to detect and locate diseases. Ultrasonic flaw detectors, for example, are widely used to detect tumors and the like. The stronger the barrier, the more intense the refracted sound waves. Moreover, sound waves can even form sound clouds and, when this occurs, wonderful refracted sound takes place. Particularly, when a great difference exists in the distribution of the density of the atmosphere, sound waves and light waves are refracted and totally reflected by the atmosphere, the synthesized result of which sometimes makes it possible for people to see sights or hear sounds far away. These sights and sounds were recorded as mirages in ancient literature. Shen Kuo, a scientist of the Song Dynasty, wrote in his *Notes on Meng Xi (Meng Xi Bi Tan)*, "Above the sea off Dengzhou (today's eastern tip of Shandong Peninsula) could be seen from time to time floating clouds, which looked like palaces, towers, battlements, human figures, horses and carriages. These scenes came clearly into view and were called mirages," and "Ouyang Wenzhong was once sent on a diplomatic mission to Heshuo, the area north of the Yellow River. When he put up for the night at an inn in Gaotang County, he saw ghosts floating through the air. According to him, the contours of horses, carriages, human creatures, and animals could be easily distinguished. What was said sounds quite true, but the detailed description will be omitted. When he asked an aged native about this phenomenon, he was told 'such a thing also took place twenty years ago, during the daytime, the scene was equally distinctive'." All this shows that sound can be

synthetically refracted.

Equally intense is resonance, namely, the vibration of one intense sound wave of a tuning fork leads to that of another.

In *Zhuangzi* (《庄子》), it is recorded that Lu Ju once placed two twenty-five stringed plucked instruments of identical structure in a hall, and when he plucked the "gong" sound of one, he heard that of the other, though not plucked, and it produced the same sound. According to *Yi Yuan* written by Liu Jingshu (390~470A. D.), a man in Sichuan Province once possessed a plate whose temperament was the same as that of the Big Bell located in front of the Luoyang Palace. When the Bell was struck, the plate produced sound as well. The same did not happen after the plate was filed a little bit. All this illustrates the principle of "resonance". "This is because," said Gao Shaokui of the Tang Dynasty, "the plate and the bell had the same temperament. Hence the resonance."

In addition, Shen Kuo in his *Note of Meng Xi* says that if a human figure cut out of paper is placed on the string of a seven-stringed plucked instrument, the string will resound when another string of the same tone sends out sound, and as the resonance takes place, the paper figure will move up and down. What he says proves once more the resonant phenomenon of sound waves. (Liu Renlong *Stories of Physics*, Science Publishing House, China).

Language is the product of the activity of the human brain, and it is also one of the forms of ideological activity, and at the same time it is one of the means through which living bodies exchange information with one another. On the other hand, language also carries and transmits energy. Power-carrying language or incantation, in particular, transmits much greater energy. That explains why incantation has been widely applied in Taoism, Buddhism and

Qigong, and has been employed to get rid of evils, subdue devils, avoid disasters, prevent diseases and build up bodies. Incantation, therefore, deserves our thorough investigation and research (for detailed information, see Chapter Three).

Is there "cosmic language" in the universe? The so-called cosmic language is, in reality, a type of information exchange. In other words, cosmic language is sound information which could be understood through sensuous transmission. It is said that some people have had this kind of experience: a sound of some sort seems to govern their way of thinking. Indeed, if there exists a life of wisdom outside of the globe, it is possible that cosmic language also exists. At present, however, cosmic language is nothing more than a hypothesis.

Human beings are not the only creatures that have language. All kinds of animals have their own special language. It is said that Jesus was able to talk with birds and some people can understand the language of elephants and dogs... What is more, plants and non-living creatures also have their own language. Though, in the case of plants and non-living creatures, the language consists of no more than vibrating waves, which are different from sound waves, it may also be regarded as a kind of language signal. An experiment, for example, was once done in a foreign country on cactuses. The people doing the experiment first connected a lie detector with a cactus grown in an indoor pot, and then asked six men to enter, in turn, into the room where the cactus was kept. They had one of the men pull the cactus out of the pot and throw it onto the floor. After this had been done, they replanted the cactus in the pot and asked the six men to come into the room again, one at a time, and to walk towards the cactus. This is what happened: when the man who had

pulled it out of the pot moved close to it, the indicator on the lie detector trembled, which suggested that the cactus was terrified. (Yu Hong, 1989, *Boundless Universe*, Chunqiu Publishing House, P183).

To sum up, sound and language are both products of the motion of matter, and both of them carry power. They bear great significance to the life activity of human bodies. But the mystery of power-carrying language—incantation—has not been revealed up to now, so the study and application of this kind of language will be of great value.

Section 2 Profound Meanings of Incantations in *Book of Changes*

By incantation is meant praying. In the *Book of Later Han Dynasty: Biography of Qiyi Liang fu* (《后汉书: 七一谅辅传》), a sentence goes like this, "It was in a very dry summer ..., Fu put himself under the hot sun in the courtyard and said his incantations vehemently." Incantations could also be said to be a kind of power-carrying secret language, which was already popular in ancient China. For example, the five-character pithy formula—xi, a, ma, mi, hong—was discovered in the Ma Wang Dui Han Tombs. In ancient China, Zhuyou (祝由)—prayers said for the purpose of curing diseases—contained incantations in them. *Explaining Words* (《说文》), an ancient Chinese dictionary, explains that "to pray is to chant one's incantations". Actually in an ancient book *Thirteen Categories of Zhuyou* (《祝由十三科》), there are a great number of incantations.

Book of Changes embodies profound linguistic meaning. The Eight Trigrams are the earliest linguistic incantations, each of which symbolizes the boundless power of nature. Qian ☰ (Creative) and Kun ☷ (Receptive), for example, are symbols of the boundless reverence for heaven and earth, and so they are referred to as Parents. *Treatise of Remarks on the Trigrams of Yi* says, "Qian is the sky, the ruler and the father," and "Kun, the earth and the mother". Zhen ☳ is referred to as the Thunder; Xun ☴ as the Wind; Li ☲ as the Sun (Brightness); Gen ☶ as the Mountain; Kan ☵ as the Water; Dui ☱ as the Swamp. In a word, the Eight Trigrams represent eight incantations.

Trigrams in *Book of Changes* are incantations at the highest level and symbols of the earliest civilization. They are totally different from the incantations chanted by witches. *Book of Changes* first appeared in the form of trigrams, the interpretations being supplemented later by King Wen. The trigrams are implicit incantations while the interpretations are explicit. The profound meanings of the Eight Trigrams are all embodied in the trigrams and every Yin Yang movement of Nature such as that of water-fire, strong-weak, dry-wet, is represented in the eight incantations.

Each of the sixty-four hexagrams is an incantation, and all of them are, in a sense, prayers. Just like Buddhist scriptures, the interpretations of these symbols have boundless implications.

In *Book of Changes*, for example, "yuan (元)", "heng (亨)", "li (利)", "zhen (贞)" are used frequently in the interpretations of many hexagrams. These four characters, in reality, are the grand-god incantations, having in them the profound implications of noble prayers and corresponding to the "nan-wu-e-mi-tuo-fo" of the Jingtu (pure land 净土) Sect of Buddhists. Of the four

characters, "yuan" means great and originating and abundant; "heng", beautiful and successful and harmonious; "zhen", upright. All this implies that everything is auspicious if "the excellent capacity or Kun matches the unlimited power of Qian and its comprehension is wide and its brightness great". In the 386 interpretations of the sixty-four hexagrams, the presence of these four characters means "auspicious" while the contrary to them means "ominous". In *Book of Changes*, for example, the Bi (Union) says, "There is good fortune. But let the principle party intended in it, re-examine himself, as if by divination, whether his virtue be great, unintermitting, and firm. If it be so, there will be no error"; the Tai (Peace) says, "The little gone and the great come. It indicates that there will be good fortune, with progress and success". These examples will suffice to show the noble implication of the incantations of *Book of Changes*. The incantations contained in *Book of Changes* are, in fact, auspicious prayers and epigrammatic wishes of a higher level which differ in nature from those said by a small number of witches, even though these witches make use of the interpretations of trigrams taken from *Book of Changes*.

Like the Eight Trigrams, the Grand Terminus (Taiji) Map, the He Map and Luo Writing are also forms of incantations. They are condensed incantations about the law of Yin Yang movement in Nature, and they also embody the profound implications of "yuan, heng, li, and zhen". The four incantations—yuan, heng, li, and zhen—are noble spirits, which are found not only in all kinds of things, but also in human beings. Those who possess these divinatory incantations "have noble spirits in them and, therefore, evil spirits can be kept off", demons and ghosts can be naturally frightened and cowered. That is the supernatural power of these incantations.

The aim of these four incantations is the same as that of the Buddhists' and Taoists', yet it is totally different from the vicious swearing of witches.

Section 3 Investigation into Special Speech Sounds: Incantations, Cosmic Language and Qigong Language

Each speech sound carries with it a certain amount of power. Special speech sounds refer to the sounds produced under special circumstances, such as Qigong (a system of deep breathing exercises), sub-consciousness and unconsciousness. These special sounds are mostly power-carrying languages. By power-carrying languages are meant the speech sounds whose energetic information goes beyond the ordinary range, or the speech sounds produced under special circumstances. The power carried by such speech sounds, especially those with life information in them, is usually greater. Power-carrying language consists of two categories: sound language and soundless language. The power of the soundless power-carrying language is even greater than that of the sound language. Power-carrying language is the display of supernatural ability, and therefore, it can also be called supernatural language.

Whether it be Qigong language, cosmic language or incantations, special speech sounds of any of these take place in the state of sub-consciousness. Qigong language, cosmic language or incantations are all power-carrying languages and they carry greater energy and more information. Since sound waves themselves transmit and

transform energy and, what is more, the higher the frequency is, the greater the power will be, supernatural languages are employed to drive out devils, subdue monsters, eliminate disasters, prevent diseases and build up bodies. Although supernatural languages have existed for thousands of years, the profound meanings in them still remain a mystery today. More investigation is still to be made.

I. Cosmic Language

Cosmic language refers to the sound information coming from outside the earth by means of sensuous transmission and interpretation. It is said that some people can hear a kind of sound which may govern their way of thinking and their actions. As there exist other living beings or wisdom outside the earth, it is possible that they could send forth sensuously transmitted sound waves to human beings on earth. Thus it is not a mere assumption that human beings on the earth can receive such sound waves. It is true that cosmic language should not be popularized, or mystified or made illusive or even employed to deceive people, for cosmic language, after all, is rare sound wave information and its source has so far remained a mystery. But as long as there are living beings of wisdom existing outside of the earth, the existence of cosmic language is not impossible. At present, however, it still remains a human inference. The detection of a signal for help sent forth by living beings fifty thousand years ago contributes to proof of the possibility of the existence of cosmic language.

II. Qigong Language (Power-carrying language)

Qigong language refers to the sort of language and speech sounds produced in the Qigong state. It falls into two categories: one is speech sound made spontaneously in the state of sub-consciousness and the other is the speech sound made under the sway of

an idea. Of these two, the former is a release of energy and its purpose is to direct strength, through concentration, to a part of the body and in doing this, to adjust the field of energy and balance the Qi state of the body. This accounts for the fact that after sending forth the sound, mostly low-frequency sound, one feels comfortable. Besides, spontaneous speech sounds are good for inducing favorable function of the body, and capable of enhancing human body's synchronization and systematization. Soft and low frequency speech sounds can also lead to a slight resonance of the human organs and tissues and thus have a massotherapeutic effect on the internal organs. In a word, Qigong incantations are mostly low-frequency speech sounds or secondary waves, which are similar in frequency to human organs (4-20Hz). Saying incantations, therefore, gives rise to self-vibration of the human organs. (Liang Hongguang, *The Function of Incantations to Human Body*).

The other kind of Qigong language refers to power-carrying speech sounds, especially those greater power-carrying speech sounds sent forth by Qigong-possessing people under the sway of a highly concentrated idea. This sort of "power-carrying language" is characterized by the concentration of an idea and the carriage of energy. The energy here is derived from the synthetic effect of biology, Qi, electricity, magnetism, waves and, in particular, life information. Under the sway of a highly concentrated idea, the energy of the human body can converge and the energy of the universe can be assimilated. The power thus obtained is very great. This shows that human body, when in the state of sub-consciousness, is capable of shifting and transmitting its energy through sound waves. Because of this, a Qigong master is able to conduct his idea, sound and Qi to a certain spot of his body. Quite a few Qigong masters, when send-

ing forth power, utter "ha-hei-hong" or "xi-a-hong", which has the effect of transmitting concentrated energy. The curative effect of such an energy, when transmitted from one person to another, is quite notable in the treatment of a disease. Besides Qigong masters, other kinds of doctors such as those using acupuncture therapy and massotherapy can also make use of the power and power-carrying speech sounds. If they can at the same time, while treating patients with the methods of their own field, pass by hand or needle the concentrated energy to the patients, the patients will surely "obtain energy" sooner and the curative effect will certainly be enhanced. Power-carrying language, therefore, is a very promising kind of sound energy yet to be developed.

Different frequencies in power-carrying sounds have different effects on the body. "yi--", for instance, has low frequency, but a high pitch, and so it brings Qi upward to the point between the brows. Thus it helps to stimulate the brain and broaden the way of thinking.

"ha--", for another example, has an intermediate frequency and a high sound volume. It brings Qi to the chest, or to the pit of the stomach, making the heart and lungs more energetic and the blood circulate more freely.

"hong--", then, has a low frequency and the sound is heavy and vigorous. Thus Qi will go downward to the pubic region, keeping the liver and the kidneys in good condition.

In a word, power-carrying speech sounds are of great practical significance and they are the pith and marrow of Qigong cultivation. Power-carrying speech sounds, therefore, are extremely worthy of investigation.

The functions of power-carrying speech sounds can be summed

up as follows:

i. The power-carrying speech sounds sent forth repeatedly by power-carrying persons usually have a low frequency and regular rhythms, so they are inclined to bring the consciousness of the power-receiving persons under induced control, and to set free their sub-consciousness. This process contributes to stimulating human instinct to adjust the life rhythm to cosmic resonance so that negentropy will increase and the human body will develop towards systematization. This kind of treatment is particularly suitable for chronic ailments of maladjustment.

ii. High-power-carrying sounds uttered by Qigong masters or persons with supernatural power are similar in nature to infrasonic sounds, and, accordingly, they carry greater sound energy. These sounds can intensify the life activity of power receivers and so can be used to treat special diseases. Infrasonic sounds refer to those whose frequency is below the sense of hearing, or, in other words, whose frequency ranges from about 10^{-4} to 20 Hz. The advantage of infrasonic sounds is that they can be transmitted over a superlong distance. The lower the frequency of sound waves, the less the atmosphere absorbs them; so when the infrasonic sound (as low as 0.1Hz) waves are transmitted in air, they decrease the least. When sending forth powers, the human body can produce very powerful infrasonic sounds, which can even penetrate many obstacles. As a result, the speech sound information of life, especially that carried in infrasonic sounds, can play a very important role.

iii. Special power-carrying language, uttered by strong power-carrying Qigong masters of many years' standing or by Buddhist or Taoist masters, carries life information which can bring about an unusual effect on power receivers through reacting upon the latter's life

information. The effect of soundless power-carrying language or soundless incantations is the greatest, because it carries life information with the powerful energy of an idea. The most powerful can save a human life.

It was reported that in Brazilia, capital of Brazil, there was a girl baby with supernatural power. One month after she was born, she was able to cure diseases with her cries. Up to now, nearly a thousand patients are reported to have been cured by her of their diseases. Even scientists can not understand the whys and wherefores. Born in early January, 1989, the baby named Maria suddenly burst into crying when she was being baptized. Almost at the same time, a young girl who had been suffering from infantile paralysis rose promptly to her feet and walked straight towards Maria without the support of walking sticks. An old lady, who was seated two rows before the young girl, recovered her eyesight after having suffered from glaucoma for quite some time. When word got out that Maria's cries could cure diseases, crowds of people came to ask her for treatment of their illness. Ever since March, 1989, patients have come one after another. They say that after hearing the cries of Maria, their diseases disappeared completely the next day. (Wu Shaoyun *Fantastic Stories Around the World*. Liaoning Publishing House, 1989, P16)

On the whole, power-carrying speech sounds are not only a form of energy, but also a kind of information, i. e., life information transmitted as a form of sound energy, with which other forms of energy cannot complete. Power-carrying speech sounds can be so mysterious mainly because they function as a form of energy, and most important of all, because life information is brought into full play. Incantations, after all, are speech sounds that carry life infor-

mation with them. They have nothing to do with divinities.

III. Incantations

Incantation or Dhahani incantations in Sanskrit are said to be the secret language of Buddha. Buddhists believe that it is "embracing all" (总持), namely, it is embracing all merits and virtues and boundless significance. Respectable Master Binzong said, "Incantations have mysterious and immeasurable power. Though usually beyond human comprehension, those who persist in chanting them piously can naturally come to have inspiration, achieve wonderful effects and accomplish all unthinkable merits and virtues. They can not only help one calm down, keep himself from disasters and crimes, and increase wisdom, but can also help him get rid of the worries of life or death, so as to attain Buddhahood." (Master Binzong, *Explanations of Heart Sutra of Banruoboluomiduo*, Xingya Printing Company, P165).

Incantations are also referred to as a true language or secret language. They are special powers held by Buddhists and Taoists. Incantations (or Mantra in Sanskrit) are the true language of the Secret Sect of Buddhism, true words and no nonsense. In Volume I of *Du Ri Jing Shu* (《大日经疏》) it is said that "True language, or Mantra (Sanskrit), means true words, and neither absurd nor strange words." Taoist's pithy formulas and Muslim's hymns fall into the category of incantations.

Incantations are classified into two kinds: spoken and non-spoken. Of these two, the latter is more powerful. It is believed in some religions that incantations can be used to subdue monsters, eliminate disasters and make people live a happier and longer life. Incantations, therefore, are power-carrying speech sounds of a higher and a stronger power, rather than merely sound waves. Just as

professor Xie Huanzhang says, "Incantations have physical properties, being capable of producing infrasonic sound waves and thus increasing one's power."

Incantations, can be divided, in accordance with their functions, into two sorts: one that brings about harm and one that brings about benefit. Buddhists have incantations which are supposed to avoid disasters, increase happiness, strengthen power and subdue monsters. It is said that vicious incantations can bring illness or even death upon human beings. At the entrance to the Imperial Tomb of Tutankamen (斯坦卡蒙王陵), for example, there are these written words: "Catastrophe befalls whoever dares to offend Pharaoh." As a result, all the grave-diggers who tried to enter this tomb died without knowing why.

Both Buddhists and Taoists lay emphasis on self-cultivation and incantations, because this can help them retreat quickly into a quiet state. The Taoist and Buddhist incantations are in fact secret sutras. The Jingtū Sect of Buddhism, for example, has a six-character pithy formula: nan-wu-e-mi-tuo-fo, which, after being chanted hundreds of thousands of times can lead from quantitative change to qualitative change. Only in this way could the desired result be produced. As to the relationship between sutras and incantations, the Xinjing (Heart Sutra) of the Buddhist Sutras explains that "Sutras and incantations were originally the same thing. Either explicit or implicit, there is not much difference between them. So explicit is implicit; implicit is explicit; Sutra is incantation; incantation is sutra; sutra is explicit incantation; incantation is implicit sutra. Explicit sayings embody the benefits of implicit incantations; implicit incantations also explains the profound meanings of explicit sayings. Thus it is known that the profound meanings of all the sutras are included in incanta-

tions and the implicit benefits of incantations are unexceptionally embodied in explicit sayings." Buddhists believe that all divinatory incantations are Buddha's secret words, the wonders of which can not be understood, and thus the secret of which can not be interpreted or explained.

In a word, the incantations of Buddhists and Taoists are primarily those uttered from the bottom of the heart, namely the prayers chanted for the purpose of expressing internal piety. Those who say more incantations can "purify themselves of the six roots of evil" so that they can enter into the state of Buddha or immortality. Saying prayers, therefore, is in fact the "boat" taken by Buddhists to the other shore. Take, for example, the Ban-ruo-bo-uo-mi-duo-xin-jing incantations, which includes four lines or eighteen Chinese words: jie-di, jie-di, bo-uo-song-jie-di, pu-ti-suo-po-he (Go across, go across, go across to the other shore; may all the masses go across to the other shore and quickly come to attain Buddhahood.)

"Ban-ruo-bo-uo-mi-duo-xin-jing", consisting of only 260 words, is one of the most important and most respected sutras of China's Buddhism, which is the all-embracing book to deliver all living creatures from torment so as to attain Buddhahood. The eighteen words in the end of the Xinjing are secret incantations and incantations belong to a secret language. Buddha very often made use of both explicit and implicit words. The secret of incantations is among one of the five things which can not be interpreted.

Ban-ruo-bo-uo-mi-duo incantations include the Great Divinity Incantation, the Great Brightness Incantation, the Supreme Incantation and the No-equal Incantation. It can make people recognize falsehood and attain Buddhahood. Buddhists believe that "incantations, though, unintelligible, perform immeasurable wonders, and

the practitioner who chants them piously and whole-heartedly will by and by obtain spontaneous inspiration and wonderful effects, and accomplish unthinkable merits and virtues—on the one hand, they can help make him calm, eliminate evils, and enrich his wisdom; on the other hand, they can also help him get rid of worries about life and death, so as to attain Buddhahood. “Divinatory incantations, whose secret is unintelligible, function in the way in which a bugle works in the army. That is, when the order is given by the bugle, everybody obeys it without any question, because it is the sound that works, not the interpretation.” The eighteen-word incantation expresses the deep concern of Buddha and Bodhisattva for all living creatures. (Master Binzong. *Explanations of Heart Sutra of Ban-ruo-bo-luo-mi-duo* Xingya Printing Company P₁₅₉₋₁₇₁).

For another example, in Buddhism, the Heart Incantation “nan-wu-e-mi-tuo-fo” of the Jingtu Sect and the True Words “siu-li-siu-li-mo-he-siu-li-siu-li-siu-li-suo-po-he” (Meaning: Namas Sympathetic Bodhisattva Guanyin, please deliver all living creatures from torment) of the Jingkou Sect are a show of piety towards Buddha and a prayer said for the purpose of rescuing all the living creatures, and so they differ in nature from the incantations of witches.

Taoist incantations are mostly true words and pithy formulas. The Taoist Neidan Gong (Internal Pills of Immortality Gong) true words, for example, consists of a four-line poem:

After seeing through the world affairs one becomes calm,
Not caring for oneself, nor the influence of others,
Trying to persuade you not to treat it as a common thing,
Then miraculous brightness will come to yourself.

Like the incantations of Buddhists, Taoist incantations are also noble prayers.

In addition, the Dingqi Song of *The Harmony in Book of Changes* (《周易參同契》) is in fact an incantation for the making pills of immortality. Among it are the words: Yin is above, Yang goes down with hot fire at the beginning and end and soft fire in the middle. Then Yin fire is white. The pills of immortality made from lead can reach your seven Qiaos (e. g. ear, eye, nose, etc), thus strengthen your body. Cultivating your disposition piously can help you pay attention to a situation without distractions, thus you become mild, and then you are safe. Be sure to come and go without going out of the door. Growing up, you deepen your purity and honesty. Concentrate on the things being done, then you become yourself. Making a circulation of the original Qi in your body once every day requires hard work. Guard the Zhen Qi (true Qi) in your body and try to remain sober-minded since you have a long way to go to the “quiet and secluded place”. If you achieve this goal, you can understand the truth of human life. Taking delight in doing so, you can find the root, study the five elements (bu-shi, chi-jie, ren-ru, jing-jin, zhi-guan) carefully, determine the amount. Think hard, no discussion, keep it at heart and do not tell others.

Apart from all this, the divinatory incantations of the Buddhists and Taoists also include some incantations for eliminating catastrophes, for increasing happiness, for subduing monsters, and for strengthening power, etc. Here are ten minor incantations taken from the “big carriage” chanted to eliminate disasters and bring good luck: xiang-mo-san-man-duo, mu-tuo-nan, a-bo-luo-di, he-duo-she, suo-xiang-nan, heng-zhi-ta-an, qie-qie, qie-si, qie-si, mou-mou-ru-fu-luo-ru-fu-lou, bo-luo-ru-fu-luo, bo-luo-ru-fu-luo, di-se-zha, di-se-zha, se-zhi-li, se-zhi-li, suo-yi-tuo, suo-yi-tuo-shan-di-jia, shi-li-ye, and suo-fu-he.

Fo Tian Zhun Ti Divinatory incantation:

Nan-wu-sa-duo-nan San-miao-san-pu-tuo

Ju-di-nan da-zhi-ta

An zhe-li-zhu-li

Zhun-ti-suo-po-he-zhou

Seven Buddha Mie Zui True Words:

Li-po-li-po-di qiu-he-qiu-he-di

Tuo-luo-ni-de ni-he-luo-di

Bi-li-ni-di mo-he-jia-di

Zhen-ling-qian-di sha-po-he

The Buddhist Leng-yan Incantation consists of as many as two thousand words; the Great Sympathy Incantation, then, is composed of as many as eighty-four sentences, among which are the following:

Nan-wu, he-luo-tan-na, duo-luo-ye-ye

Nan-wu, a-li-ye, po-lu-jie-di, shuo-bo-luo-ye

Pu-ti-sa-chui-po-ye, mo-he-sa-chui-po-ye

Mo-he-jia-lu-ni-jia-ye, an, sa-shuo-luo-ja-ye, shu-tan-xie...

When chanting the Great Sympathy Incantation, one should first say "Guan-shi-yin Bodhisattva, with one thousand hands, one thousand eyes, and one boundless, perfect, unobstructed, and extremely sympathetic heart 'Tuo-luo-mi'" once and then chant the Incantation three times, or five times, or seven times, or nine times, or forty-nine times, or as many as thousands of times. When the chanting is over, one should say "Names Extremely Sympathetic Guan-shi-yin Bodhisattva" at least three times. One can chant, as one will, ten times, one hundred times, one thousand times, or ten thousand times. The Great Sympathy Incantation chanted by hundreds of thousands of Buddhists represents eighty-three Bod-

hisattvas. Buddhists hold that the Great Sympathy Incantation has the effect of bringing happiness, prolonging life, averting disasters and eliminating crimes.

The secret Sect Incantation; bearing the significance of embracing all stands for three Buddhas: Buddha Da-bian-zhao, Buddha Wu-liang-shou and Buddha A-jie. The aim, then, is to rely on the virtues and powers of the three Buddhas by calling them from the bottom of the heart and to enter into the sound and unblocked state as soon as possible. The six-character Great Brightness Incantation of Bodhisattva Guan-shi-yin—*an, ma, ni, ba, mi, hong*—is also meant as a prayer to Bodhisattva Guan-shi-yin. The purpose is, similarly, to have mutual affinity with the Bodhisattva and to rely on the great virtues of the Bodhisattva so that obstacles can be removed from the way and the Buddhist world of nirvana can be realized.

To sum up, every incantation, whether Great Sympathy, Great Brightness, or Zongchi, is a pious prayer to all Bodhisattvas and Buddha. Prayer-saying actually serves as a "big boat" for all Buddhists to take in order to cross the sea of sufferings, and as the "big carriage" for all Buddhists to take on their way to the nirvana of Buddhism.

Zhuyou (treating diseases by praying) and Incantations.

Zhu, in ancient times, was used to refer to wizards. According to *Zhouli Chunguan*, the Head Zhu took charge of the words of six kinds of Zhu. Zhu also meant incantation. In *Jiyun* (《集韻》), Zhu (祝) is written as Zhou (呪) or Zhouzhou (詛訓).

Ancient medicine originated from witchcraft, and accordingly, in the process of medical development, medicine and witchcraft co-existed for quite a long period of time. Zhoyou is a branch of learning embodying both witchcraft and medical skills. TCM mainly de-

veloped the aspect of the psychology of Zhuyou. Just as the *Emperor's Canon of Medicine* says, "Huang Di asked, 'I've learned that in ancient times, people treated diseases by shifting the energy and changing the Qi of the body. In other words, they treated diseases only by Zhuyou. Nowadays, however, people treat internal diseases by using medicine and external diseases by using stone needles, but only some are cured while others are not. Why?' Qibo replied, Ancient people lived among birds and beasts. They acted to do away with coldness and lived in caves to shelter themselves from heat. They did not have family dependents to support nor officials to obey. It was a calm and peaceful world, and evils did not get deep inside. Therefore, medicine could not cure internal diseases, and stone needles, external diseases. That is the reason why people could cure disease by shifting the energy and saying the Zhuyou. Today's world is different: worries stay inside while hardships and sufferings hurt the outside. At the same time, people are living out of harmony with the four seasons and going against heat and cold. Cold wind blows very often and evils come day and night. Inside, the organs and marrow are ill; outside, the apertures and skin are hurt, so ailments will become worse and serious diseases will lead to death. As a result, Zhuyou can no longer cure them." All this clearly shows that Zhuyou is a spiritual and psychological therapy. The fact is that ancient people "did not have family dependents to support nor officials to obey. It was a calm and peaceful world, and evils did not get deep inside... , so people could cure disease by shifting the energy and saying the Zhuyou", but today, "worries stay inside... and Zhuyou can no longer cure them" proves that though Zhuyou is a psychotherapy; it has limited effect on patients.

Among the ancient people, Zhuyou was used as prayers and in-

cantations. Termed as Zhuyou, Zhoujin, Shujin, Jinke, etc, Zhuyou was the continuation of the co-existence of witchcraft and medical skill. In *Shanhaijing*, records are found about witch doctors. It says, for instance, that on Mount Ling, there are ten kinds of witch doctors: wuxian, wuji, wupan, wupeng, wugu, wuzhen, wuli, wudi, wuxie, and wuluo. They climb up and down this mountain where hundreds of medicinal herbs grow (*Du Huang Xi Jing* 《大荒西经》). In *Xuan yuan Beiji Medical Zhuyou Thirteen Branches* (《轩辕碑记医学祝由十三科》), it says that our forefathers in the Archean Era passed down thirteen branches of medical study, one of which is Zhuyou, Zhuyou refers to what has been passed down secretly in the Xuanyuan family for the treatment of all kinds of diseases of men and women, adults and children. Diseases which could not be cured with medicine or acupuncture alone were treated at the same time with Zhuyou, which proved to be effective and capable of driving out evils and subduing demons. It was called Zhuyou (literally Zhu means "pray" and You means "reason") because patients said their prayers to heaven and told the reasons for their diseases. All this shows that another reason for the development of Zhuyou was that it was used in the form of prayers and incantations for the treatment of diseases.

In ancient China, Zhuyou included incantations chanted to water, ink, characters and paintings. People with great power were able to pass information through water, ink, characters and paintings, and thus create special effects.

At present, experiments have been done on animals to study the effect of Information Water, and it has been found that Information Water, when drunk by small mice, can increase their immunity from disease. The Qigong Scientific Research and Cooperation

Group of Qinghua University, Beijing, has made an analysis of the components of the water after Yan Xin, a Qigong master, sent off power to it, and have discovered that it has changed into a new matter, the structure of the water having greatly changed. This study shows that Qi information can be passed over a long distance not only through the air, but also through liquids and solids. Thus, just like Buddhists' explanation of the effect of "pure water", people can obtain, to a more or less different extent, information as long as they drink "Information Water" or touch an "Information Substance". This shows that there exists the possibility of obtaining information, either directly or indirectly, and so it necessitates further investigation into the ancient art of Zhuyou. Of course, Zhuyou should be separated from picture symbols or incantation water, which are often used superstitiously to deceive people and are quite immoral and contrary to the principles of medical practice.

Section 4 Speech Sound: Science of Traditional Chinese Medicine

As early as the Shang Dynasty and Yin Dynasty, people in China were already conscious of the fact that sounds cause disease. Among the inscriptions on bones or tortoise shells discovered in the Yin Ruins, for instance, are found such words as "疾音, 疾耳, 疾言 (the original three names of diseases recognized by the ancient doctors concerning illness in the throat, the ears and speech)". The *Spiritual Pivot: You Hui Wu Yan* (《灵枢: 忧恚无言》) written in the 2nd century BC, expounds on the structure and organism of the sound-making aspect of the human body. It says, "the throat

helps the breath to go up and down, the epiglottis is the door to let the sound out; the lips are the fans to blow the sound out; the tongue is the key to speech sound... ."

The Eight trigrams of *Book of Changes* are the first to mention the five notes of the ancient Chinese five-tone scale: jue, zhi, gong, shang, and yu. Of the Eight Trigrams, Zhen (thunder, Exciting Power) and Xun (Gentle Penetration) represent the note "jue" or the high-frequency the note; Li (the Clinging), the note "zhi"; Kun (Receptive, Resting in Firmness) and Gen (Mountain, Arresting Movement), the note "gong", or low-frequency sound; Qian (the Creative), the note "shang"; and Kan (The Perilous Pit) and Dui (Joy, Pleasure), the note "yu". In the *Emperor's Canon of Medicine*, the five notes are matched one-to-one with the five internal organs (heart, liver, spleen, lungs and kidneys), and each note stands as a symbol for one of the five organs, as is shown in table 26-1.

Table 26-1 the Five Notes of the Eight Trigrams Correspond to the Five Internal Organs

Trigrams	Zhen, Xun	Li	Ken, Gen	Qian	Kan, Dui
Five elements	wood	fire	earth	metal	water
Five notes	jue	zhi	gong	shang	yu
Five internal organs	liver	heart	spleen	lung	kidney
Five sounds	song	laugh	weep	cry	groan
Audio Frequency	long and high	high and sharp	stressed and voiced	strong and loud	low and deep

The *Emperor's Canon of Medicine*, a book on TCM, attaches great importance to the five notes. This book pays special attention to the relationship between the notes and the internal organs, and puts forwards the theory of the five notes matching the five internal organs, which is of great value to the diagnosis of various diseases. In a word, the *Emperor's Canon of Medicine* associates the five notes with medical science and applies this to the explanation of pathology in TCM and to the diagnosis of diseases. The *Emperor's Canon of Medicine* has made a great contribution to medical science.

I. Theoretical Basis of the Five Notes Matching the Five Internal Organs

TCM holds that sound comes from the larynx, which is the aperture and the focus for the charge of the lungs. Breath (Qi) is the motive force of sound and the lungs are in charge of sending forth the breath. The kidneys take it upon themselves to bring the breath in. The breath, then, goes out through the larynx and is manipulated by the teeth, the tongue and the lips, and so sound is produced. That is why we say the lungs are the source of sound, while the kidneys are the root of sound. Besides, the lungs are the source of Zhong Qi. According to *Spiritual Pivot: Xieke*, "Zhong Qi gathers in the chest and goes out through the larynx." Sufficient Zhong Qi, therefore, is the indispensable condition for sound making. Apart from this, the spleen and the stomach are places from where Zhong Qi comes. Only when Zhong Qi ascends can sound be produced. The liver, then, takes charge of release, and so it plays a part in opening and closing the glottis. The heart controls the flow of blood. When blood and Qi flow smoothly, the lungs (the storing room for sound) are nourished by the flowing blood and then sound can be produced. As can be seen from all this, the five solid organs

are all closely related to sound making. Abundant energy of the five solid organs, then, is the fundamental requirement for the sound to be normal. Just as *Ren Zhai Zhi Zhi Fang* (《仁斋直指方》) puts it, "As far as sound is concerned, the heart is the main force; the lungs, the door; and the kidneys, the root."

As to the meridians, those directly related to the larynx are the lung meridian of hand-Taiyin, passing the larynx from the lungs across to the armpits; the heart meridian of hand-Shaoyin, ascending to control the pharynx; and the kidney meridian of foot-Shaoyin flowing past the larynx. In other words, the energy of the lungs, kidneys, heart and liver all pass directly through the larynx. Besides, the large intestine meridian of hand-Yangming, the stomach meridian of foot-Yangming, and the spleen meridian of foot-Taiyin all move closely by the larynx. Of the eight additional meridians, the Ren meridian passes through the larynx, and the chong meridian goes out of the larynx. The Ren meridian and Chong meridian meet at the larynx. *Spiritual Pivot: Xie Qi Zang Fu Bing Xing* (《灵枢: 邪气脏腑病形》) says, "the energy, circulating through the twelve passages and three hundred and sixty-five subsidiary channels, all go up to the face and then out of the apertures. The vigorous Yang Qi ascends to the eyes while the other Qi goes to the ear." This shows that larynx is intimately related to the internal organs and meridians of the human body. As the larynx is the important hollow organ of sound, it is clear that sound is closely associated with the internal organs and meridians.

II. Clinical Significance of Five Notes Corresponding With Five Internal Organs

i. Diagnosing Disease by Judging the Strength of the Internal Organs through Sound

Sound is the signal sent out by the five solid organs. The change of sound, then, is one of the important symptoms of disease. Just as trouble in a working machine can be examined by listening to the sound it emits, so the problem of a human body can be found in accordance with a change of sound.

A change in volume, length and tempo of sound gives in advance messages about the strength and weakness of the internal organs. Generally speaking, a vigorous sound shows the strength of them while a feeble sound shows his weakness. Just as *Plain Questions: Mai Yao Jing Wei Lun* (《素问：脉要精微论》) says, "the fact that one speaks feebly and repeats oneself all day long shows that one is losing Qi (energy)." In view of this, when one speaks feebly and often repeats oneself, that is the mark of the loss of energy, especially, the weakness of the kidneys. As the kidneys are the original source of sound, when the kidneys are weak, the energy can not be shot upward and one speaks feebly and repeats oneself.

Besides, sound reflects the condition of Zhong Qi, which develops from the heart and lungs, accumulates in the chest and ascends to go out of the windpipe. Zhong Qi, therefore, is intimately related to the strength and weakness of speech, sound and breath. When Zhong Qi is feeble, then speech is low and weak, and is difficult to successively produce. In clinical practice, for instance, low, weak and disjointed speech is very often considered as a warning of chest disease, including what are termed in modern medicine as coronary heart disease and sequelae of myocarditis. So the saying is quite right that "the heart is the main force, and the lungs, the door."

The *Emperor's Canon of Medicine* has already recorded practical cases that can be diagnosed by means of sound. For example, *Plain Questions: On Channels and Pulse* says, "The reason why

sound appears feeble is that Zhong Qi is troubled by unhealthy environmental influences." On the whole, once the internal organs have gone wrong, the pathological information is carried out by sound. When the sound is slow, the patient has trouble with his spleen; when the sound is heavy, the patient has trouble with his kidneys; when the sound is rapid, the patient has trouble with his lungs; when the sound is high, the patient has trouble with his heart; when the sound is gloomy, the patient has trouble with his liver. The change of sound reflects the physical condition of the internal organs. *Synopsis of Golden Chamber: Pulse Conditions and Zang-Fu Channels* (《金匱要略：脏腑经络先后病脉证》) says, "When a patient speaks quietly and likes crying out in alarm, he has a disease in the joints of bones. When he speaks incompletely in a husky voice, he has a disease in the heart. When he drawls in a sharp voice, he has a disease in the head." The *Emperor's Canon of Medicine* says, "A patient who has trouble with his gallbladder sighs a lot." These quotations can prove that sound carries out pathological information about the internal organs.

ii. Clinical Significance of Irregular Sound to the Diagnosis of Disease

When the uttered sound becomes hoarse after a long period of disease, it suggests that the energy of the internal organs has run to an end and that misfortunes will befall the patient. A seven-stringed plucked musical instrument will turn hoarse when the instrument is going to break. Similarly, when the internal organs are going to fail, their sound will be broken. The loss and damage of lung energy, for example, will cause damage to the voice like broken gongs that do not sound. Just as the *Emperor's Canon of Medicine* says, "A string gives forth a hoarse sound when it is going to break; a tree

loses its leaves when it is rotten; a disease becomes a serious one when a person utters a vomiting sound." (*Plain Questions: Shi Ming Quan Xing Lun* (《素问：室命全形论》)). Bian Que, a famous physician in ancient China, said, "if the five solid organs of a patient have run out of energy, and concentration has been lost, the patient will die when his sound turns hoarse." It is enough to show that a hoarse voice, after a long period of disease, is indeed an ominous sign.

Modern medicine holds that a hoarse voice is a signal of early stage cancer. For people over 40, including the aged, if a hoarse voice holds on successively for more than two weeks without obvious reasons, throat cancer may lie there hidden.

In addition, as the regular flow of energy is retarded, serious heart disease and kidney illness may lead to throat oedema, which, in turn, may also cause a hoarse voice to appear. In a word, the occurrence of a hoarse voice reveals the seriousness of the disease and foretells the coming of misfortunes. Clinicians, therefore, must be vigilant.

When nothing has gone wrong with the vocal chords, a strange voice is very often the symptom of endocrinopathy. If a man has a child's voice, poor function of several glands should be taken into consideration. If a fully grown man has a sharp, acute voice, it often suggests that the man is suffering from cryptorchidism, hermaphrodite, congenitally underdeveloped testicles or orchitis. In the case of a patient with the testicles removed, additional male hormones should be supplemented.

When a woman speaks in a man's voice, she is said to be masculinized. In such a case, the woman should be considered to be suffering from congenital ovary underdevelopment, hermaphrodite, or

other ovary diseases such as a tumor, tuberculosis and inflammation, for these diseases can all result in low female hormones. If, for example, the patient is receiving male hormones to treat a disease, she should take less or none at all to avoid being masculinized.

iii. Diagnostic Value of Aphonia

Aphonia can be classified into two kinds: Qiaobi and Neiduo. Qiaobi refers to a physically strong patient running a fever, etc. Neiduo refers to chronic diseases marked by deficiency of vital energy. The former belongs to lung diseases, while the latter belongs to kidney deficiency. Kidneys are the original source of sound while lungs are the outward sign.

Aphonia is significant in foretelling the trouble in the lungs and the kidneys. *Plain Questions: Mai Jie Pian* says, "If a person first faints from Neiduo and then becomes dumb, it is all because of kidney deficiency." Neiduo aphonia is also called dumb, which often happens together with paralysis of the arms and the legs. Such a case is also called dumb-paralysis, a serious disease of kidney deficiency, or the primary symptoms of what are termed in modern medicine cerebral angioma, cerebral tumor, cerebral abscess, and nerve syphilis. In a word, aphonia from Neiduo is mostly an ominous signal of the exhaustion of the internal organs, which foretells the coming of misfortunes. As *Introduction to Medicine* says, "With regard to the disorder of the internal organs, aphonia as a result of skin ulcers is incurable and when Yin and Yang have both been exhausted and speech has been lost because of aphonia, then, the patient will die in three days and a half.

Qiaobi aphonia is mainly concerned with the lungs. The so-called "Solid Metal makes no sound" is usually caused by external factors. Just as *Plain Questions: Qi Jiao Bian Da lun* says, "One

year, there was not enough fire, so coldness was prevalent. People fell ill... and became terribly dumb."

III. Diagnostic Significance of Nausea, Zhengsheng and Zhanyu (Delirious Speech)

By nausea is meant hiccups. A patient suffering from a disease for a long period of time is filled with horror at the occurrence of nausea in himself. The *Emperor's Canon of Medicine* has already warned people, "when a disease has gone beyond cure, the patient usually nauseates." *Plain Questions: San bu Jiu Hou Lun* also says, "When a disease goes deep into the internal organs, it foretells the coming of misfortunes. It is also ominous that hiccups arise at the extreme end of a sudden attack, with a high body temperature as its major symptom." *Spiritual Pivot: Re Bing* (《灵枢: 热病》) says that "when such a disease occurs, there are nine cases in which acupuncture cannot be used. The first and foremost is the situation in which the patient has no perspiration and his cheeks turn red. If he also nauseates, he will die."

Besides, nausea also foretells the fatigue of the kidneys. If nausea is caused by kidney deficiency, it is called "collapse nausea", which shows the ill omen of the deficiency of the original Qi. "Collapse nausea" is hard to control if not given tonics (*Differential Diagnosis Treatment* 《类证治裁: 呃逆》). It is even more ominous when it occurs after one has given birth to a child. *Standard for Diagnosis and Treatment* (《证治准绳: 杂病》) says, for instance, "postpartum hiccups are an ominous sign."

Modern medicine holds that hiccups are associated with the poisoning or inflammation of the central nervous system. Serious clinical manifestations often occur such as cerebrites, meningitis, cerebral tumor, cerebral haemorrhage, cerebral thrombus, consumptive

disease of the marrow of the backbone, rabies, tetanus... and infected toxemia. If nausea occurs in the later stage of a hepatic coma and uraemia, it is much more ominous.

i. Diagnostic Significance of Zhengsheng

The occurrence of Zhengsheng has great diagnostic significance to mortal diseases. By Zhengsheng is meant the case of repeated, low and disjointed speech sounds which occur when the patient's life is in danger and the patient himself is mentally deranged. Zhengsheng is the ominous sign of the weakness of the internal organs. The *Treatise on Exogenous Febrile Diseases* (Zhang Ji, 3rd century), for example, points out in its *Yangming Pian* that "if it happens to a physically strong patient, it belongs to delirious speech; but if the disease is marked by the deficiency of vital energy, it must be Zhengsheng." In other words, it points out the nature of Zhengsheng.

Whether it occurs because of lack of Yin or lack of Yang, Zhengsheng is a dangerous and ominous sign. If Zhengsheng occurs at a time when the hands and the feet are cold, the face turns pale, the patient is streaming with sweat, the breath is weak and the pulse is feeble, then it is an ominous sign of lack of Yang. On the other hand, if it occurs when the face is moist, the skin is shriveled and hot, the tongue is red, the patient is short of breath and the pulse feels feeble, it is a dangerous sign of lack of Yin.

ii. Diagnostic Significance of Zhanyu and Wangyan

Zhanyu, or delirious speech, occurs when one is delirious and has a high body temperature. The two hundred and twentieth item of the *Treatise on Exogenous Febrile Diseases*, for example, says, "If both the Greater Yang and the Yangming are caught by illness at the same time, once the illness in the Greater Yang is over, there

appears sweat and high temperature and suffering from constipation with delirious speech, it is proper to give the Potent Purgative Decoction to make the patient release."

Delirious speech and Zhengsheng differ in that the former suggests a disease which happens to a physically strong patient, while the latter refers to a disease marked by the deficiency of vital energy. Both of them suggest the seriousness of the disease, yet the latter is even more unfavorable. No matter what kind of Zhengsheng it is, either caused by lack of Yin or by lack of Yang, it indicates that the disease is getting worse.

Wangyan or nonsense refers to the case when one's speech is indiscreet or in disorder. Being a symptom of insanity, it occurs unexpectedly in the mentally deranged or delirious state. *Zhang Shi Yi Tong: Shen Zhi Men* (《张氏医通: 神志门》) says, "Insanity being the case, one makes delirious, confused, or indiscreet speech. This is caused by phlegm blocking the pericardium so that the sufferer is distracted. This case is commonly called "phlegm blocking the heart". ("phlegm" is a term commonly used in TCM, a kind of unhealthy environmental influence causing disease without the actual form, having the bad result of blocking as phlegm)

In conclusion, *Book of Changes* and acoustics are closely related. It is especially worth mentioning that *Book of Changes* is the earliest source of incantations and prayers. If modern acoustics would like to find out the key to the profound meanings of speech incantations, a study of *Book of Changes* would be an important approach.

(Translated by Wang Yongxiang)

Chapter Twenty-seven

Book of Changes and

Biological Clocks

Section 1 A General Survey of Biological Clocks

The term biological clocks refers to the phenomenon of the behavior of life cycles. Nature's rhythm exists in the universe and biological clocks are one of nature's cyclical rhythms, which is a reflection of life's adaptability. It is also life's instinct which has been gradually formed during its course of evolution.

The biological clock is a common phenomenon. The biological rhythm exists in every kind of life form no matter how poor and simple, how advanced and complicated they are. Even the unicell, the simplest form, has its cyclical behavior which is formed by its physical and chemical actions. For instance, plants bloom at a fixed time and change their colors with changes of time. Human beings' and mammals' cyclical behavior is more evident. It can be clearly seen when they feed, sleep, cry, migrate, and come into the oestrus and mating season. Circadian rhythms also exist in a human beings' body temperature, blood pressure, blood glucose, breath, pulse,

hormones, enzymes and it even in leukocytes. Thus, the above indicates that biological clocks are a common phenomenon of the universe.

When man and animals are placed in constant darkness, the result proves that the circadian rhythm can be found easily, this indicating that the biological clock is the innate device which was formed for billions of years ago and can not be easily changed.

Section 2 Information of Periodic Rhythm Existing in the Universe

Periodic rhythm exists in each object's motion. The motion of the macrocosm and microcosm reflects nature's rhythm, such as the expansion and contraction of celestial bodies, and the circular motion of the planets.

We can find the daily rhythm, monthly rhythm and annual rhythm on the earth because of the movement of the celestial bodies in the solar system. Annual rhythm refers to the seasonal variations through the year which happen during the earth's revolution around the sun. Monthly rhythm refers to the changes of the phases of the moon during its revolution around the sun. At present, some astronomers believe that the moon is not the satellite of the earth; on the contrary, it's the tenth planet of the solar system and it also runs around the sun. The moon and earth merely run in a double-orbit system. However, changes in the phases of the moon still exist during the movement of the moon around the earth. The daily rhythm refers to the circadian rhythm which is formed during the earth's ro-

tation. The period of sunspots is 11 years, which proves that there is a periodic rhythm in the movement of the planets in the solar system. The periodic rhythm is the astronomical background that influences the biological clocks.

The periods in the universe can be both infinite and infinitesimal. The combinations of periods revolve without stop. The periods in the universe can be hundreds of billion years in length, such as the swelling and contraction of the universe. The period of the straton(层子) is very short. The above shows that the periodic rhythm of the universe is all encompassing.

Section 3 The Formation Mechanism of the Biological Clock

I. The Originating Mechanism of the Biological Clock

There are two originating mechanisms of the biological clock. One is the genetic biological clock, the other is the irritable biological clock. The genetic biological clock inherits the adaptability law of the environment through genes which were formed during life's billions of years of evolution. It is inherited by generations. It has a long and deep influence on the offsprings and cannot be easily changed. The irritable biological clock is acquired in the environment and reflects life's adaptability.

Nowadays, biologists at Harvard University have found that the biological clock of human body lies in the superior area of the optic chiasm. The pineal body secretes a kind of hormone named melatonin. It controls the superior area of the optic chiasm and adjusts the period of sleep and awakening.

II. The Formation Mechanism of the Biological Clock

The Formation of the Biological Clock Influenced by Natural and Social Factors

i. The Universal "Pulse" and the Biological Clock

Man is constructed by the universe. Since he lives in it, man is closely related to the universe.

The universe influences lives on the earth through various periods, such as seasons, day and night, the new moon and the full moon, etc. Lives on the earth are influenced by the movement of the celestial bodies including gravity, magnetic forces, electric power, radiation and even pulses. No life can escape its influence. Life develops its adaptability in a harsh environment. It consistently adjusts its rhythm to the vile environment. All this proves that it is the universe that influences life's periodic rhythms.

The human body's periods may be in step with the universal pulse. Moreover, the longer the period is, the farther the source of the pulse and vice versa. The wave amplitude of the heart's throb and EEG frequency may be automatic or in step with a certain celestial body. Once the isolated heart starts, it palpitates on end. Thus, the source of life's period on earth may have something to do with the "pulse" movement of a celestial body.

Long ago, people in ancient China began to recognize biological clocks. *Book of Changes*; written 3,000 years ago, expounds on the relationship between life and nature. For instance, *The Great Treatise on Yi* says, "The sun goes and the moon comes; the moon goes and the sun comes;— the sun and the moon have taken the place of each other, and their shining is the result. The cold goes and the heat comes; ... when a looper coils itself up, it straightens itself again; when worms and snakes go into the state of hibernation, they

keep themselves alive... the sun and the moon continually emit their light." The above shows that *Book of Changes* emphasizes the fact that the sun and the moon greatly influence the earth.

Nature is a big universe and human beings are a small one. The big and the small universe are in step with each other. The *Emperor's Canon of Medicine* expounds this theory. For instance, *Plain Questions: BaoMing Quan Xing Pian* (《素问：宝命全形篇》) says, "Man is influenced by nature's rhythm." *Plain Questions: Si Shi Ci Ni Cong Lun* (《素问：四时刺逆丛论》) says, "The vital energy of spring exists in the passages. The vital energy of summer exists in muscles. The vital energy of autumn exists in the skin and the vital energy of winter exists in the marrows." That is nearly the annual rhythm. *Spiritual Pivot: Sui Lu* (《岁露》) says, "when the moon is full, the sea tide is at the flood. Then man's blood and energy are accumulated. The muscles are strong and the skin is delicate... when the moon is new, the sea tide is on the ebb. Then man's blood and energy are deficient. Man's Protecting Qi is away. The body is empty. The muscles become feeble and the skin becomes wrinkled." That is a monthly rhythm. *Plain Questions: Sheng Qi Tong Tian Lun* (《素问：生气通天论》) says, "the vital energy rises in the morning, becomes vigorous at noon, becomes weak in the evening and then the inhaling and exhaling of Qi can be stopped. This is nearly a circadian rhythm. In addition, the flow of vital energy ebbs and flows like the tide. That is the rhythm of the tide" (quoted from *Spiritual Pivot: Nourishing Qi* (《灵枢：营气》)). We can draw a conclusion from the fact that the *Emperor's Canon of Medicine* greatly emphasizes the influence of the sun and the moon on the human body. It also indicates that the *Emperor's Canon of Medicine* written 2,500 years ago, pays close

attention to the relationship between the astronomical background and the biological clock.

Indeed, life on earth is in the same boat with the universe. Several dozen elements in the human body are closely related to nature. Lives have existed in the same world for hundreds of millions of years. Can they not be influenced by the universe?

ii. Social Psychology and the Biological Clock

Potentially, the biological clock is greatly influenced by psychological factors. The psychological clock means the rhythm of the biological clock formed under the influence of psychological factors. For instance, the menstrual period of a woman living in the same place will be gradually become synchronous. Some researchers have shown that hormones emitted by perspiration can influence each other. The mechanism is one in which the hormones are absorbed into the body by nasal mucosa and the ovaries are influenced by them. But we should not underestimate the fact that psychological factors are potential factors influencing the periodic rhythm. The period of the daily lives of people living in the same surroundings will be gradually become synchronous without being noticed.

The biological clock in a human body is greatly influenced by social psychological factors. For instance, *Spiritual Pivot: Wu Shi Ying* (《灵枢: 五十营》) says, "The human body can be divided into 28 constellations. Each constellation can also be divided into 56 parts. The vital energy circulates through 1,800 parts altogether. The sun moves through the 28 constellations. The vital energy runs through 28 passages. The length of the passages is about 16.8m, and this is in accordance with the 28 constellations." It also says, "The most proper frequency of breathing is 14,500 times for each 24 hours, which is much slower than that for modern people. The

universe breathes once every thousands of years. Thus, the speed of the movement of celestial bodies doesn't change greatly. But why is the daily breathing frequency of modern people higher than that of ancient people? Man has to speed up his breathing rhythm to adjust himself to a world which develops fast and is full of competition. In this world, people have to work hard and the relationship between people is more complicated. Indeed, the breathing rhythm of people living in cities is much faster than that of those who have comfortable jobs, especially for those who take a mental and hard job, or work in certain important departments. This also tells us that the biological clock is influenced not only by celestial bodies but also by social psychological factors.

Section 4 Taiji Clock and Its Important Enlightenment

Periodic rhythm exists everywhere in nature, and it is in essence the rhythm of a the growth and decline of Taiji Yin and Yang, whether it is the rhythm of a macrocosm or of a microcosm. Taiji, as the representative of the growth and decline of Yin and Yang, is the foundation of the universal periodic rhythms, which are different only in length. Both the period when the universe expands and contracts and the rhythm of brain waves which are counted in milliseconds are based upon the growth and decline of Yin and Yang. Therefore, the biological clock is substantially a sort of Taiji clock. This is a universal law. (see figure 25-1)

The periodic rhythm of all the things in the universe, from lower forms to higher ones, or from simple stages to complicated

stages, is the rhythm of the growth and decline of Taiji Yin and Yang. From a macrocosmic point of view, the cycle of universe's swelling and contraction, the moon's waxing and waning in the solar system, the 11-year rhythm of solar flares, as well as the earth's revolution around the sun, are rhythms of the growth and decline of Yin and Yang; from a microcosmic point of view, the cell molecules of a human body present the round-the-clock-vibration of cAMP and cGMP, which sets a material foundation for the growth and decline of human body's Yin and Yang. In the daytime the constancy of cAMP (positive) is larger than that of cGMP (negative); while at night the constancy of cGMP (negative) is larger than that of cAMP (positive). The human body represents the changes in the growth and decline of Yin and Yang.

Let's see some other examples. The cycle of one's state of mood presents the cycle of excitement (positive) and restraint (negative). Physical strength shows the cycle of exuberance and reduction, not to mention the intelligence cycle in which quickness (positive) and stagnancy (negative) arrive in turn. In fact, these are the period of growth and decline of Yin and Yang. Meanwhile the color changes in some animals, the opening and folding up of flowers, the prosperity in spring and falling in autumn of tree leaves, and some animals' seeking food in the daytime while curling up to rest at night, are all similar examples. All these behaviors are cyclic ones and embody the Taiji biological clock. Thus, we know that the foundation of all things' engendering of rhythm lies in the growth and decline of Yin and Yang, as well as Yin and Yang's alternation.

Yang controls the dynamic state while Yin dominates the static state; the biological clock is strictly influenced by the growth and decline of Yin and Yang. For instance, the female's biological clock

obviously represents this change. At the stage of post-menstruation female hormones increase gradually, so Yin grows. Because Yin controls the static state, and is sluggish, heavy and slow in motion, it makes one feels that their body is heavy and feels spiritless, whereas during the pre-menstruation stage, female hormones decrease in the blood and progesterone rises up. Because Yang controls the dynamic state and is light and quick in motion, one usually feels that their body is light and he becomes agile and exciting. These phenomena well illustrate that growth and decline and the alternation of Yin and Yang are the foundation of the biological clock.

All things' engendering rhythm root in the growth and decline of Yin and Yang. The biological clock is in essence the alternation of Yin and Yang. Therefore, the crux of the biological clock lies in maintaining a certain cycle of growth and decline of Yin and Yang. The biological clock is able to work according to its own rhythm, but not necessarily in step with the universe.

The biological rhythm has been formed gradually as living beings adapting themselves to the grim environment during billions of years of evolution. In competition with nature, some living beings adjust their biological rhythms in step with or contrary to those of the celestial bodies in order to survive. Let's take the sun for example. Most living beings' biological rhythm is in harmony with the circadian rhythm which depends on the sun (caused by the rotation of the earth), i. e. they behave excitedly, move about and take food in the daytime, but turn laggard and sleep or rest at night. There still exist some creatures presenting a contrary rhythm, i. e., they move around at night but sleep during the daytime. Animals such as cats, mice, owls, and mosquitoes belong to this category. This holds true for plants as well; most plants bloom in the daytime and

fold at night with a most typical example being the cordate telosma. A few plants do the opposite. For instance, bloomer tobacco always blooms at night. In a word, whether life's rhythm is in step with or against the universe, it always is based on the growth and decline of Taiji Yin and Yang.

In fact, all the biological rhythms do not necessarily accord with the universe. There is enough evidence to prove the existence of an automatic rhythm from within. For example, a cat often sleeps soundly in the daytime and turns agile at night. Even within the human body, the viscera do not work in step with each other. For example, the liver works most laboriously at night; it is busy in detoxifying and storing, while it rests at noon. Therefore, one had better not take alcohol at lunch time in case it makes the liver overburdened.

This shows that living things have automatic rhythm. An experiment has been done to prove this conclusion. Some persons with approximate circadian rhythm were placed in constant darkness. At first they maintained their regular life, although there was no stimulation from light, for the circadian rhythm had been finalized through the evolution of billions of years and was rooted deep in the body through the function of genes. It works according to its own vibration frequency. A French scholar, Michael, set himself in a lab separated from light and found his daily rhythm was 25 hours. Apart from this, it is reported that recently American oceanologists have found many districts densely populated with living things at the sea bottom near Archipelago de Colon. On the seabed which is far from the surface there is no sunlight at all, but these living things do live luxuriantly. It is found from some pictures taken at the Antarctic Continent by a British scientist that beneath the ice-covered

Antarctic Sea there spreads a multicolored world: sea anemones of all colors, all kinds of mosses, awfully-long alga, fishes and vertebrates reproduce prodigiously. All proves that not all living things need sunlight.

An American scholar's discovery of the acute position of the biological clock in one's body shows there does exist an installation in one's body controlling the biological clock, and this shows that living things may have automatic rhythm. Through the long period of evolution, living things have acquired the periodic rhythm fitting for the "pulse" of the universe on one hand, and on the other hand, they have the automatic-rhythmed vibration. Nowadays, some scientists have abstracted β -endorphin and anti- β -endorphin from hibernating animals. The former is used to save and store up energy urging the animal to hibernate; on the contrary, the latter is anti-hibernating. This states there is a material foundation controlling the periodic rhythm within the body of living beings, thus makes the biological circle changeable. Living things can live on their own rhythm but not necessarily in correspondence with the movement of the celestial bodies. In brief, although the micro-universe has keen relationship with the universe, each one in it is an independent individual, and has its own biological rhythm.

The Taiji clock theory indicates that living beings can choose the rhythm catering for their own needs, whereas it must be based upon a certain circle of Yin and Yang's growth and decline. Therefore, human beings' biological clocks do not necessarily go along with the earth's alternation of day and night. As we know, the earth is withstanding all radiation and gravity from the sun with an atmosphere layer (the ozonosphere, which is found starting to have a leak above the Antarctic Continent, which gives an alarm to the

protection of the balance of nature). The sun affects living things on the earth greatly because it's near the earth and especially because it is undergoing a climax of second sunspots during the recent years. While at night when the earth is turning against the sun, it is sheltered from some radiation and other interference from the sun. As a result, man's mood correspondingly calms down and becomes concentrated. Thus the efficiency of the mental work at night gets doubled. Actually, many significant decisions and discoveries are made late at night.

During the night, when the bright moon is high in the sky, one will be very energetic, especially when there is a full moon. This is because moonlight is the refraction of sunlight; it is suitable and much milder than the direct radiation of the sun. In hot summer, it is especially fit for us to work in moonlight. Nowadays, some foreign scholars emphasize that moonlight is more important to human beings than sunlight, and they state if there were no moon's attraction for the sea, which leads to the violent undulation and to the change in terrestrial gravity which causes powerful magnetic field resistance, innumerable living things would be killed by the outer radiation. Therefore, to some degree, the moon is more significant than the sun to lives on the earth.

Apart from this, many of man's cycles root in the moon's cycle of wax and wane. For instance, the menstrual cycle is 28 days; the mood cycle is also 28 days, intelligence and physical strength cycle are separately 23 days and 33 days, which are all similar to the moon's cycle of wax and wane. What's more, most people's cycles coincide with it, which indicates the keen relationship between man and the moon.

Working at night greatly reduces not only the interference from

the social environment, but the unfavorable factors from the sun, and thus achieves an effect that one cannot get during the annoying daytime, but of course one needs some time to get accustomed to the new rhythm. After all, more than 95% of the people work on the same rhythm which one should admit is really a big waste of space.

Man has indeed the ability to abandon the circadian rhythm obtained from genes. Some scholars have reached a conclusion from a test that the secretion of adrenocortical hormones of people who sleep at night reaches climax during 8-9a. m. and the trough at 2a. m. When they change to sleep in the daytime, the rhythm of hormone secretion gets inverted very soon and life continues as usual. This proves man has surprising adaptability.

Enlightenment Obtained From the Theory of Yin and Yang.
Since Yin and Yang are growing and declining, as a whole, Yin and Yang are always in balance for an individual. But the "S" curve of Taiji indicates that in each part of the whole, apart from some certain stages of identity of Yin and Yang, Yin and Yang are not identical for most of the time. One is of surplus while the other is of deficit, which signifies the tidal form of the biological rhythm. That is to say, life vibrations present different wave amplitude and different cycles.

From the picture of Taiji, we may see that except for the balanced state of Yin and Yang in the middle of the "S" curve any other spots of the line present different unidentical falls and rises: that is the wave amplitude of the Taiji clock which indicates the rhythm of the falls and rises of life vibrations. The "S" curve of Taiji clock is the steady state with no order, which indicates that the biological rhythm is not completely in step with the universe, but with its own rhythm with no order.

Recently, a doctor at Harvard Medical School reported that they had observed the existence of a lot of rhythm with no order, and that only when death is imminent, one's cardiac rhythm sounds in unison, which explains that there exists a steady state of rhythm with no order in one's brain and heart. Once the state is destroyed and the rhythm becomes regular, it will imply something abnormal. Therefore, they pointed out that to install a regulator for a person with heart diseases can bring greater danger to him.

In addition, it has been confirmed by some scholars that the excitation cycle is 28 days, the intelligence cycle is 23 days and the physical strength cycle is 33 days.

In recent years, a former scientist in the Soviet Union put forth through experiments that time is a kind of substance, and all things in the universe consist of substance of time and time field. The substance of time emits a kind of particles, and the particles are transmitted like message media. A material's aging is in proportion to the time particles it receives. Besides, he believes that time can be regulated as we control temperature and pressure. Thus the control of the rhythm of the biological time becomes possible.

The above illustrates that there is an automatic rhythm in living things and all living beings have their own equipment to regulate the rhythm of life. The biological clock is substantially the Taiji clock. Under the enlightenment obtained from Taiji Yin and Yang theory man's cognition of the biological clock must get transmission from the "realm of necessity" to the "realm of freedom".

Section 5 The Application of the Taiji Clock

I. Controlling the life-span Clock

According to the Taiji clock theory of the growth and decline of Yin and Yang, man's life-span clock experiences a very long cycle from the cradle to the tomb, and it's the biggest cycle of Yin and Yang's growth and decline. The dialectical theory of Taiji Yin and Yang suggests that the former half of one's life is the period of the growth of Yang and the latter half is that of Yin. The growth of Yang is the beginning of life while the growth of Yin means the imminence of aging. According to the theory that "extreme Yang begets Yin", the later extreme Yang appears, the later the growth of Yin arrives. This lays the foundation for the theory that the prolongation of the growing period may lead to the prolongation of life span. If we could reduce the times of cell division and lengthen the cycle of cell division during one's growing period, we would be able to postpone the arrival of Yang climax. *Feng trigram of Yi* says, "midday begets decline". The sun at high noon is at Yang climax which is the beginning of the decline. It holds true for a person in middle age—he is becoming old and feeble.

With the rapid development in biology, the time-controlling genes might be found among all biological genes. This would be applied to the regulation of the life-span clock. Could the cycle of cell division be prolonged, the maximum of life span would be constantly rewritten. At the same time, the cell division cycle of animals could be controlled as well to speed up or prolong their growth, thus cater-

ing to the needs of man.

In brief, the growth and decline of Yin and Yang is the base of the periodic rhythm of nature. Therefore, the crux of the biological clock lies in the alternation of Yin and Yang's growth and decline. The clock is not necessarily in step with the cycle of seasons or of day and night; the automatic controlling system in living things should be put to full use. As a result, annual animal and plant growth could be shortened to be seasonal. We could also prolong their cycle of growth, turning them into biennial ones or triennial ones. And it is not impossible for human beings to prolong the cycle of Yin and Yang's growth and decline to prolong man's life span.

II . Breaking the Circadian Rhythm

Since the biological clock is substantially the rhythm of Taiji, Yin and Yang's growth and decline, if only a certain rhythm of Yin and Yang is set up, the usual circadian rhythm depending upon the sun can be rejected. The cAMP and cGMP (ribonucleic acid and deoxyribonucleic acid) in the cells of human body are separately positive and negative, and they affect human body's growth and decline of Yin and Yang. If we could produce these two materials, we would be able to control the rhythm of Yin and Yang's falls and rises, which could either be applied to destroying the circadian rhythm or to time-therapeutics. Since man could prolong or shorten the cycle of Yin and Yang's growth and decline, the efficiency of medicine would also be greatly improved, thus it's rather significant to time-therapeutics.

Moreover, man could make full use of all advantages at night, avoiding working together in the same small space in the daytime according to the same rhythm.

In many places, man-controlled light has been used to alter the

rhythm of Yin and Yang's growth and decline of plants and animals. If we are to advance the arrival of the cycle of Yang, we should illuminate the things in advance; if we are to prolong the cycle of Yang, we could lengthen the time of illumination. Nowadays, this has been widely used in the field of raising animals and plants. For instance, man prolongs the time of illumination in order to make hens lay more eggs. This states that it is significant to production to break the approximate circadian rhythm.

The Taiji clock indicates that man temporarily cannot migrate to other planets, but it is possible for us to live underground. To live underground will greatly reduce the injury from sunradiation. It is observed by some foreign scholars that when one is living in a cave, the biological clock slows down by half; one continues working in the cave for 20~24 hours but he feels he has worked 8~10 hours only; after sleeping for 7~14 hours, he feels that only 7 hours have passed. Living underground gives full play to man's conscious stage and makes it possible to shorten a man's sleep, thus lengthening the effective life and making more room for plants. In brief, this holds great significance for the ecological balance of nature and for lives on earth.

Section 6 The Calculation of the Biological Clock

I . Calculating since the Winter Solstice

Man's biological clocks are various and yet there are some rules they obey. Somebody's cycle is in step with the moon's wax and wane; others are sensitive to the 1st, 4th, 7th and 10th of the 12th

Earthly Branches of the solar day and the seasons. Therefore, a special lunar calendar combined by the solar and lunar calendar should be adopted to calculate one's biological clock because this calendar includes not only the yearly visual movement of the sun but that of the moon, through which we can be well aware of all the effects on man's biological clock. The reason we calculate from the Winter Solstice lies in the fact that according to Taiji theory of the growth and decline of Yin and Yang, the Winter Solstice is the extreme of Yin and the beginning of Yang at the same time, i. e., it is the beginning of a new year. First, we should count the days from the Winter Solstice to the day under research, and then have this number divided by 28, 2, and 33, the remainders are the days within one's cycle of mood, of physical strength and of intelligence separately. In this way, we can learn in a day whether the person is in the peak period or in the trough period. Let's take March 12th, 1990 for an example. First, the number of days from Dec. 22nd, 1989 to Mar, 12th, 1990 is 80, then we divide 80 by 28, 23 and 33 separately and we get the reminders 24, 11 and 14, which are separately the exact dates within one's cycles. Thus we can learn that one is at the uprising stage of mood from low tide, and at the turning stage of physical strength; and he is at the high tide of intelligence. (see figure 27-1). Between the stage of high tide and low tide there are critical days or months, i. e., there is always a period of transition from high tide to low tide no matter within a year, a month, or a day and during this period it is not suitable to perform operations or strong-medicine treatments. There is about 1/5 of one's life at the stage of transition according to some statistics.

II. Calculating from One's Birth

At one's birth, one's biological rhythm begins to work, there-

fore we ought to count from his birth. The calculation can be divided into two steps as follows (on the solar calendar):

A: First Counting up the Total Days One Has Experienced

(the year under research—the year of birth) \times 365

+ the number of leap years (the total number of years \div 4)

\pm (the date of birth till the date under research). In this formula, when the date under research is bigger than the date of birth, we should use addition; when the situation is to the contrary, subtraction should be employed.

B: Calculating the Remainder of Each Cycle

Divide the total number of days by 23 (physical strength cycle), 28 (mood cycle) and 33 (intelligence cycle) and compare the remainders to figure 27-1, then you will learn the state of biological clock in that day.

e. g. 1. To foretell someone's state of the biological clock on June 9th, 1990 (birth date: June 5th, 1989).

total number of days one has lived:

$$90 - 89 = 1 \text{ (total number of years)} \quad 1 \times 365 = 365$$

number of leap year is zero

Because the date under research is bigger than that of birth, "addition" should be used:

$$365 + (9 - 5) = 369 \text{ (total days)}$$

remainders in each cycle:

physical strength cycle: $369 \div 23 = 1$ (remainder) at the first day of the uprising stage

mood cycle: $369 \div 28 = 5$ (remainder) at uprising stage near to the high tide

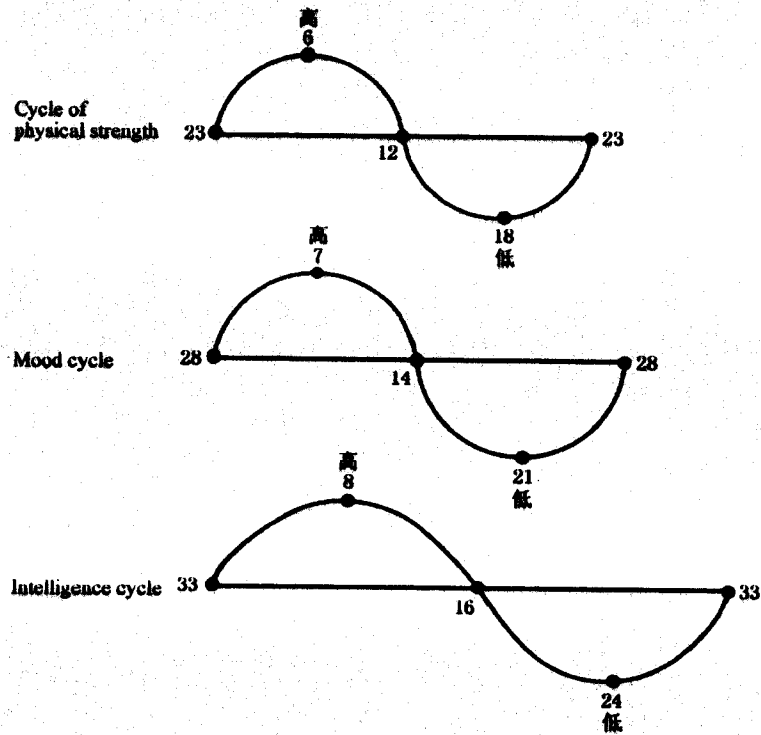


Figure 27-1: Illustration to the Numerical Value of the Peak Cycle of the Biological Clock

高 high 低 low

intelligence cycle: $369 \div 33 = 6$ (remainder) at high tide

e. g. 2. To foretell someone's state of biological clock on June 1st, 1990 (birth date: June 5th, 1989).

total number of days one has lived:

$$90 - 89 = 1 \text{ (total number of years)} \quad 1 \times 365 = 365$$

number of leap year is zero

Because the date under research is smaller than that of birth, "sub-

traction should be used:

$$365 - (5 - 1) = 361 \text{ (total days)}$$

remainders in each cycle:

physical strength cycle: $361 \div 23 = 16$ (remainder) at low tide

mood cycle: $361 \div 28 = 25$ (remainder) at the uprising stage from the low tide

intelligence cycle: $361 \div 33 = 31$ (remainder) at the uprising stage from the low tide

e. g. 3. To calculate one's state of the biological clock on Dec. 23rd, 1990 (birth date: Nov. 24th, 1946).

Total number of days one has lived:

$$90 - 46 = 44 \text{ (total years)} \quad 44 \times 365 = 16060$$

$$16060 + 44/4 \text{ (leap years)} = 16071$$

Because the date under research is bigger than that of birth date, "addition" should be used:

$$16071 + (\text{Dec. 23rd} - \text{Nov. 24th}) = 16071 + 29 = 16100 \text{ (total days)}$$

remainders in each cycle

physical strength cycle: $16100 \div 23 = 0$ (remainder)

at the critical day which is from high tide to the low

mood cycle: $16100 \div 28 = 24$ (remainder) at uprising stage from low tide

intelligence cycle $16100 \div 33 = 26$ (remainder) at uprising stage from low tide

e. g. 4. To calculate someone's state of the biological clock on Mar. 25th, 1990 (birth date: Apr. 26th, 1958).

Total number of days one has lived:

$$90 - 58 = 32 \text{ (total years)} \quad 32 \times 365 = 11680$$

$$11680 + 32/4 \text{ (leap years)} = 11688$$

Because the date under research is smaller than that of birth date, "subtraction" should be used:

$$11688 - (\text{Apr. 26th} - \text{Mar. 25th}) = 11688 - 31 = 11657 \text{ (total days)}$$

remainders in each cycle:

physical strength cycle: $11657 \div 23 = 19$ (remainder) at uprising stage from low tide

mood cycle: $11657 \div 28 = 9$ (remainder) at the high tide

intelligence cycle: $11657 \div 33 = 8$ (remainder) at the climax

Some occasions should be noticed:

1. When the remainder is 0, it is on the critical day which is from high tide to the low.
2. When the two low tides meet, it is a dangerous day.
3. When three low tides meet, it is at the low tide of the biological clock.
4. When three high tides meet, it is at a high tide period of one's biological clock.

To master man's biological rhythm of mood, physical strength and intelligence; to make full use of the stage at high tide and pay attention to the period at the low tide, especially, the critical day, can be of great significance in enhancing efficiency and avoiding accidents.

III. The Application of Human Body's Perspective Clock

There exists the clock phenomenon in one's sensitivity of his five viscera and surface tissue, which is of great importance to diagnostics.

According to the cyclic theory of the growth and decline of Taiji Yin and Yang, midnight is the extreme of Yin and noon is the extreme of Yang. These two periods are at the two climaxes of the Taiji picture. During these periods, Yin and Yang go to the extremes, thus, the vital energy and blood become insufficient. Therefore, heart failure, renal failure, often get worsened at midnight because at that time Yin goes to the extreme and Yang is hard to reach, thus, the Yin syndrome becomes evident; illness such as hypertension, vertigo, headache, nosebleed and sores get worsened at noon because Yang goes to the extreme and Yin is difficult to rise. Thus, Yin deficiency leading to hyperactivity of Yang is worsened. The morning and dawn are at the center of the Taiji picture, and Yin and Yang are at balance on the point. In the morning, the growing Yang and the declining Yin are equal to each other. When a person's Yang is deficient, his Yang can not match with Yin thus illnesses caused by the Yang deficiency often show off, such as cock-crowing diarrhea. At dawn, the growing Yin is equal to the declining Yang, thus people with the Yin deficiency can not balance his Yin and Yang. Therefore, illnesses caused by the Yin deficiency such as tuberculosis often occurs at dawn.

In addition, the five viscera belong separately to the categories of Yin and Yang. According to *Plain Questions: Jin Gui Zhen Yan lun* the heart is the king of all viscera of Yin. Therefore heart-fire diseases usually occur at noon in summer; while edema with impairment of the kidneys is often aggravated at midnight in winter.

Modern medical science holds that in one cycle of day and night, the human body's ability to tolerate diseases is weak at night and man is especially sensitive to the anaphylactia as well as illness of the respiratory system. Therefore it is advantageous to diagnose the

anaphylactia. Some doctors have observed that the human body's reaction at night to histamine increases by 60% over that in the morning.

Since there is a difference in time between one's sensitivity to medicine, the biological clock opens a vast vista for time therapeutics. For instance we can adroitly adjust the proportion of Yin and Yang to certain circumstances according to the law of Yin and Yang's growth and decline within a circle of a day and night. Besides, a prescription should cope with the functions and rhythm of man's viscera. Since livers are mostly heavily burdened at night, medicine reinforcing livers could be taken before sleep; and the heart is burdened the most in the daytime, therefore medicine tonifying the heart should be taken during the daytime; anti-cancer medicines are more efficient when used as the viscera tolerance to the anti toxicity are the strongest. After a whole night's rest a man's adrenocortical hormones and adrenocortical steroids secrets the most vigorously during 8-9a. m. and they help to improve the functions of man's viscera. Therefore during 9-11a. m. when man is at high tide of his biological function, it is proper for us to give the strong medicines, anti-cancer medicines or perform operations, for man's endurance at that time is strong, and the detoxification ability of the kidneys is more powerful.

In the human body, there is not only the physiological cycle but also the pathological rhythm on which the *Emperor's Canon of Medicine* holds many records. For example, *Spiritual Pivot: Shun Qi: a Day Consists of Four Sections* says, "Most of the diseases are lighter in the daytime and serious at night." Here it points out one's illness changes on certain rhythms. In the field of pathogenesis, the occurrence of diseases has long been found to have something to

do with the biological clock rhythm and it represents the relationship between the cycle of the occurrence of diseases and Taiji Yin and Yang's growth and decline. For instance, *Plain Questions: Jin Gui Zhen Yan Lun* says, "It is easy to suffer from the rhinallergosis and apostaxis in spring, diseases in the sternocostal part in midsummer and diarrhea in late summer, the wind type malaria in autumn as well as numbness syncope in winter." These seasonal diseases substantially belong to biological clock pathology.

Moreover, many other diseases are cyclic, such as the periodic fever, cyclic hemorrhage, periodic diarrhea, periodic urticaria, etc., even the increasing speed of cancer is cyclic. Therefore, giving prescriptions and performing medical treatment to patients according to the rhythm of diseases can prove to be efficient.

Besides, in the field of eugenics, TCM emphasizes the state of sexual intercourse. It is significant for man and woman to enhance their offspring's physique and intelligence if a man or woman selects the best stage of the biological clock to have sex. On the contrary, the foetus formed on a critical day of a man and woman's biological clock cannot be an ideal one.

To sum up all the above, *Book of Changes* is the guiding law to the biological clock. It is especially worth noticing that the theory of the growth and decline and alternation of Yin and Yang implied by the Map of Taiji sets theoretical foundations for the biological rhythm. The biological clock presents substantially the Taiji clock and it provides evidence for the existence of the biological rhythm from within. The theory of Taiji clock has opened up a broad area for the development of the biological clock.

(Translated by Qin Yongsheng)

Chapter Twenty-eight

The Law of Reverse Motion in *Book of Changes* and the Life Science

Section 1 The Law of Reverse Motion and the Law of Recapitulation

As a principle, things must have a reverse motion if they have a straightforward (positive) motion. These two kinds of motion form a cycle which exists both in the macroworld and in the microworld. Macroscopically speaking, a cosmic explosion has alternate swellings and contractions. Microscopically speaking, electrons have shuttle undulate forms; in genetics, genetic transcription is either as usual (DNA—RNA) or in reverse motion (RNA—DNA). In 1975, H. Temin and R. Dulbecco discovered reverse transcription, and they have proved that the genetic information of RNA can be transcribed in reverse order. This discovery broke the traditional principle of unilateral heredity (central principle) and won them the Nobel Prize in Medicine and Physiology in 1975. Therefore, reverse motion also

exists in the microworld; in physics, there are attracting forces and repelling forces, matter and space, the magnetic force of the North Pole and that of the South Pole; in chemistry, there are attraction and repulsion; in mathematics, there are positive numbers and negative numbers, real numbers and imaginary numbers. As for other realms, there is positive matter and negative matter, real motion and imaginary motion, a fast universe and slow universe, real space and imaginary space. All these are a unification of positive motion and reverse motion.

Book of Changes pays special attention to the real and imaginary phenomena in the universe. It says, "Diminution and increase, overflowing and emptiness, — these take place in harmony with the conditions of the time." (*Tuan in Xun trigram of Yi*). Due to the existence of positive motion and reverse motion, there must be the motion of Yin and Yang or real matter and imaginary matter. The black-and-white fish in the Taiji Map actually symbolizes positive motion and reverse motion. The Eight Trigrams and the Hexagrams Exhibited Circularly and in a Square also have the half of black (real) arrangement and half of white (imaginary) arrangement.

As the study of the reverse motion theory continued, the mystery of the black spot and white spot in the He Map and Luo Writing was finally decoded. The black spot and white spot in Luo Writing symbolize not only Yin and Yang but an imaginary number and a Yang number as well. Except the five numbers at the center, the remaining two, four, six and eight are all imaginary numbers, while one, three, nine and seven are real numbers. In this way, there are real numbers in four directions, and there are imaginary numbers at four corners. The two kinds of numbers are half to half. This phenomenon is also true of the He Map. All this shows that positive

motion and reverse motion is a unification, a motion cycle. Reverse motion presupposes and improves the positive motion.

Book of Changes discovered reverse motion and its significance three thousand years ago. *Tai trigram of Yi* says, "There is no departure (of evil men) so that they shall not return." The *Great Treatise on Yi* says, "The sun goes and the moon comes; the moon goes and the sun comes; the cold goes and the heat comes; the heat goes and the cold comes." In other words, things in motion must have two opposite directions. Then, does reverse motion mean retreat or repetition, since positive motion drives things forward? The answer is "No". As another form of motion, reverse motion is also progressive. *Laozi* says, "Reverse motion is one of the principles for matter's motion."

The universe is divided into a world of positive matter and a world of negative matter. Chen Chuankang, a professor of geography at Beijing University, has said the following: "There should be negative matter and positive matter in the universe. The positive world is made up of positive protons and negative electrons. The earth we live on at present belongs to the positive world. The negative world is made up of negative protons and positive electrons. The collision between positive matter and negative matter will trigger an explosion and light radiation." He proposes that aliens in outer space might come from the negative world. Man-and-alien contact might undergo three stages. The first one was in ancient times when *Book of Changes* was completed. The aliens only invented the transparent and solid equipment for isolation, i. e., the "canopy-covered car" from the UFO. At the second stage, the aliens have invented the simple membrane for isolation and can move about easily. At these two stages, man can see the aliens but cannot keep in touch with

them. Man-and-alien contact will be possible only at the third stage when the transforming equipment for the positive world and negative world is invented. At present, the aliens are possibly at the second stage (Source: *the Life Sciences* Jan, 28, 1990, *Book of Changes and the Aliens*).

All in all, there should exist positive (real) matter and negative (imaginary) matter. Since man exists on earth as a form of positive matter, there may possibly exist other forms of life. For example, there may be life that takes the form of energy.

In 1932, the American physicist Anderson unexpectedly discovered positive electrons in the cosmic rays that came from the outer space. After that, other scientists found negative protons and negative neutrons in the decaying process of some elements. Negative neutrons spin rightward, which is opposite to the spinning direction of neutrons. This shows that the existence of negative particles and elements is possible. Therefore, the existence of negative nuclei, negative matter, negative man, and a negative world is also possible. However, negative matter will immediately bind with positive matter as soon as it appears. It is hard for negative matter to exist on earth. Negative matter may possibly exist only in outer space because it can then be extremely far from positive matter. This long distance will keep these two kinds of matter from binding to each other. But it is hard to locate any remote constellation where a negative world exists, because positive matter and negative matter are electromagnetically repelled, they will gather in opposite directions with characteristics similar to those of the earth's magnetic field. As a result, negative matter could exist only in some extremely remote outer space. (Source: *Mystery of Physics* compiled by Yang Zongshu).

In 1866, Haeckel, a German biologist, put forth the law of recapitulation. He said, "an individual development is the short and quick recapitulation of its species' evolution." Individual development refers to the time from fertilization to maturity. (Source: *General Bioecology*). In this sense, the law of recapitulation is the law of reverse motion.

Life recapitulation is a reverse motion. Recapitulation is seemingly retrogressive. Actually, life recapitulation obtains all the evolutionary information and drives development forward. A human fetus develops into a man's form after having obtained all the evolutionary information which has accumulated over one billion and three hundred million years. Therefore, its reverse motion is active and progressive, and its aim is to develop what is useful and to discard what is useless within a short period of nine months. It pushes human evolution forward. This is the significance of the fetal reverse motion.

Section 2 The Reverse Motion of Consciousness and its Significance

The reverse motion of consciousness is an important part of the reverse motion of the body. It hastens the development of consciousness. As for its significance, it can stimulate and call forth man's sub-conscious, which has been long repressed. Evolution is a process of fierce competition. "Natural selection" exists not only in the fatal struggles among various species, but also in the organs of an individual life. In the process of evolution, the sub-conscious controlled the brain's function before language appeared. After that, consciousness

has had a dominant place and the sub-conscious has been repressed. The reverse motion of consciousness can restimulate the functions of the sub-conscious and release its power. In this way, the brain can perform its functions completely.

The reverse motion of consciousness leads to the sub-conscious. Modern medical research has discovered that consciousness is controlled by the left brain, and the sub-conscious is controlled by the right brain. The reverse motion from consciousness to the sub-conscious can restore many primitive functions of sub-consciousness, or even further, the sixth sensory function. For example, a kind of unicellular animal called a paramecium is able to dodge harm although it does not have a "brain". Plants also have "feelings" although they do not have cerebral nerve cells.

The sub-conscious not only exists in the right brain but also in the 80% of unused brain cells in the left brain. These dormant cells must possess the information of the brain's primitive unusual functions. The mental state in Qigong practice is subconscious and can speed up the reverse motion of consciousness. By practising Qigong, it is possible to restore a man's early or even primitive sub-conscious. Consciousness has been derived from the sub-conscious and then has repressed the sub-conscious at an advanced evolutionary stage. Therefore, Qigong is needed to repress consciousness and to release the functions of the sub-conscious. That is the reason why some people have gradually developed unusual faculties in Qigong practice. The repression of consciousness and the activation of brain's functions under the subconscious Qigong state form the basis of man's unusual faculties.

Objectively, man's unusual faculties really exist; however, their scientific basis has not been fully illustrated due to the limita-

tions of progress in science.

At present, some important unusual faculties consist of moving things by meditation, relaying feelings and remote sensing. Due to consanguine ties, people who are twins, brothers, sisters, mother and daughter or father and son may possess certain information in their genes. At a time of emergency, this information will be relayed between one and another by strong meditative ideas. Remote sensing occurs this way. It has been frequently reported both at home and abroad that persons even sensed a danger which one of their consanguine ties was undertaking.

In addition, any life must have its own gravitational circle according to the law of universal gravitation. Therefore, the information exchange among couples, friends, neighbors and workmates is more frequent due to the close relationships. So at the time of an emergency, one's strong meditative ideas will send off the restored information to connect the information media of his blood ties. The restored information can also be relayed through dreams. Thus the reverse motion of consciousness is rather powerful. Since man can develop this power at the time of an emergency, man can also develop it at normal times through training. The brain's potency can be highly developed if those mysterious unused cells are opened. This is the point the reverse motion of consciousness hits.

In individual development, both man's body and his consciousness recapitulate human evolution. Intelligence recapitulation takes place when the sub-conscious is opened by Qigong. For example, someone once spoke in a kind of cosmic language which no modern person could understand; an ill-educated person suddenly mentioned some knowledge she had never learned; others became thoroughly knowledgeable all of a sudden. On the one hand, each individual de-

velopment will leave certain marks of information on its species' evolution. At a certain time, these marks of information will reoccur through genetic codes. On the other hand, it has been proved that intelligence dwells in genetic codes and can be passed down to later generations. Some monks will suddenly become wise and sage-like after many years' cultivation. This suggests, once again, that sub-consciousness can be restored and opened.

Besides, it is recorded that a dying man can release his sub-conscious. For example, an American, Tom Sawyer, has mastered all the knowledge of physics, especially, the knowledge of quantum mechanics after his rebirth in the fifth stage of death. (Source: *Experience Before Death and Qigong Research* quoted by Dong Bin on *Qigong and Science* April, 1990). The so-called fifth stage refers to the harmony between a dying man and cosmic circles.

The discussion above shows that the active restoration of man's sub-conscious by Qigong will help human wisdom develop faster.

Haeckel only mentioned the law of physiological recapitulation. However, *Laozi* put forward the law of conscious recapitulation several thousand years ago. This says, "Man should abandon evil desires and go back to his babyhood under mild and healthy meditation." The return to babyhood does not mean the return of childish innocence, it means the impeccable consciousness of primitive human beings.

Man's education (from the primary school to university) is also a cultural recapitulation. It aims at future development on the basis of obtaining man's previous achievements. The future progress after graduation cannot be made without going back, or without a reverse motion of consciousness. Therefore, the individual retreat is just temporary; it will push its species' evolution forward.

Just like man's fetal development, *Book of Changes* recasts the evolution of ancient Chinese history. It absorbs the achievements at various stages and discards what is undesirable. *Book of Changes* has done much in developing and reforming Chinese culture. It has laid important foundations of future progress in Chinese culture as well.

The study of *Book of Changes* is also a reverse motion in Chinese culture. It will yield more fruitful discoveries.

Section 3 The Repression-Releasing Effects on Homologous Organs Left by Reverse Motion

Human evolution covers a long history of three million years. The fetal stage is a recapitulation of human evolution. It has been proved that man and one million five hundred thousand creatures on the earth have derived from the same ancestor. An ancient scholar once said, "All kinds of life have come from the sea." (Now some people believe that the evolution from minerals to organic substance is connected with the collision between the earth and other heavenly bodies).

Human evolution has undergone many significant leaps, such as the leap from minerals to organic substance, the leap from unicellular animals to multicellular animals and the leap from invertebrate animals to vertebrate animals. Man has experienced the procaryote stage, the gastrocoel stage, the vermiform stage, the notochord stage, the fish stage, the amphibious stage, the reptiles stage and the ape stage. This suggests man and all the other creatures share the same origin. Man's fetal development also proves that man and

all the vertebrate animals such as the fish, mammals, and primates share consanguine ties. In this sense, man's ancestors should include the fish in the Devonian Period, the reptiles in the Permian Period. The birds in the Jurassic Period, the mammals in the Cretaceous Period, the monkeys in the Tertiary Period and the apes in the Quaternary Period. This is evolutionary autoploidy.

Analogy and autoploidy are evolutionary phenomena. As far as modern biology is concerned, homologous organs are similar in origin, structure and location, but different in form and function. The four limbs of the vertebrate animal may be an example. Analogous organs are similar in function, but different in origin and structure. For example, the wings of birds are derived from their forefeet, the wings of insects are derived from their sternal plates and one side of the lateral plates. Some organs are both homologous and analogous. Human arms are similar to the forelegs of horses; the wings of birds are similar to the wings of bats. (Source: *Biological Evolution* compiled by Li Nan).

Autoploidy consists of evolutionary autoploidy and fetal autoploidy. Many homologous or analogous forms have degenerated in human evolution. For instance, human skin can be compared to the cell membranes of unicellular animals; however, the respiratory and excretory functions of human skin are not as important as they are for the cell membranes of unicellular animals. Especially, the respiratory functions has greatly degenerated due to the advanced development of the lungs.

Fetal-breath Qigong is a kind of reverse motion to restore the skin's respiratory function. Its principles are to reduce lung respiration, to increase skin respiration, to open the numerous spiracles of the skin and finally to increase the body's respiration reserve. This

kind of Qigong is one of the highlights of the Taoist cultivation. Deep breathing is needed in order to practise it well, *Zhuangzi: Great Masters* says, "Common people's breath only reaches the throat, but the masters of fetal-breath Qigong can guide their breath to the lower Dantian, which is the gate of life; then they adopt abdominal breathing and guide the breath out of all the spiracles; at this time, the breath from the nostrils is reduced so much that it is even unable to move a feather. *Bao Pu Zi*, written by Ge Hong, has similar words. After long-time practice, one will exhale Qi from the spiracles with a comfortable feeling. A person will have mastered fetal-breath Qigong if he can meditatively guide Qi from the skin to the lower Dantian and can guide Qi upward for exhalation through the skin. This mastery will give full play to the skin's respiratory function at the unicellular stage and increase the body's respiration reserve.

Therefore, Qigong is capable of stimulating and restoring man's primitive unusual faculties including the sixth sensory function which has degenerated due to the brain's advanced development. This is a reverse motion from consciousness to sub-consciousness.

In human evolution, part of an organ's functions may have advanced development which represses and degenerates the remaining functions of this organ. For example, man's consciousness has undergone a rapid development and has repressed man's sub-consciousness after language appeared; the abdomen's functions have degenerated since the time when man gave up crawling and began to stand on two legs. Furthermore, some people become pot-bellied as years go by and are likely to catch many diseases due to abdominal degeneration. The skin's respiratory function has also been reduced because of the lungs' advanced development since the terrestrial stage

replaced the aquatic stage. These phenomena have resulted from the free competition in biological evolution. In conclusion, these degenerated functions are not useless, they are only repressed by evolutionary competition. Reverse motion just aims at releasing the long-repressed functions man once had. The restoration of these functions will be important in making use of human potential, delaying senility and prolonging life.

Section 4 The Application of the Theory of Homologous Organs to Medical Science

Autoploidy consists of evolutionary autoploidy and fetal autoploidy. Homologous organs have resulted from the law of recapitulation and are united by ties of consanguinity.

Human organs have originated from the triderm of the fetus. The ties between the organs will be stronger if their origins are more similar.

The fetal development is the recapitulation of biological evolution. Human genesis starts at the time of fertilization and undergoes a blastula stage, a gastrula stage and a triderm stage. Through these stages runs the evolution of vertebrate animals. Human triderm is composed of the entoderm, mesoderm and ectoderm, and all the other systems and organs will be derived from these three germinal layers. (Source: *Human Genesis*). The autoploidy in the development of a human fetus is shown in illustration 28-1.

Illustration 28-1 The Pattern of Origin and Evolution from
Triderm

Entoderm

Trachea, bronchus, lung epithelium

Stomach and intestine, liver, pancreas, bladder epithelium,
umbilicus urethra epithelium

Pharynx, thyroid gland, tympanic cavity, tympanic tube, ton-
sil parathyroid epithelium

Mesoderm

Head: skull, tooth, connective tissue, muscle

Around the axis: truncal muscle, truncal skeleton, connective
tissue, dermis

Mesomeric part: urogenital system, genital gland, tubes and
accessory gland

Lateral plate:

The connective tissue of internal organs

The serous coat of pleural cavity, peritoneal cavity and
pericardial cavity

Blood and lymphocyte, heart, blood vessel, spleen

Adrenal cortex, lymph system

Ectoderm:

Superfacial ectoderm: epiderm, hair, fingernail, dermal gland,
mammary gland, lobus anterior hypophyseos, enamel, inner ear,
lens

Neural ectoderm:

Neural crest: meningeal neugoganglion

Cranial nerves and spinal nerves

Adrenal medulla

Pigment cell

Neural tube: CNS (central nervous system)

Retina

Pineal body

Lobus posterior hypophyseos

(Source: Canada K. L. Muir *Human Genesis* People's Hygiene
Press. P₅₂)

Man's homologous organs are different both in form and in func-
tion; however, they still share special ties of consanguinity and hid-
den pathological relations. Therefore, the theory of homologous or-
gans is valuable in tracing hidden diseases and then making an early
diagnosis.

Biological evolution is going all the time. A fetus' development
is a recapitulation of its species' evolution. This was called the bio-
genetic law or the recapitulation theory by German biologist Haeck-
el. Recapitulation actually refers to a higher-leveled repetition each
time a new generation develops. Fetal autopoloidy has provided a new
theoretical basis for the relations between human organs. Mean-
while, it enriches the TCM theory of the viscera and drives the
TCM study forward.

I . The pathological significance of the autopoloidy between the
adrenal and the gonad

The adrenal and gonad are homologous organs at the fetal
stage. Both of them originate from the mesoderm and share a con-
sanguine tie. They complement each other physiologically. For ex-
ample, both of them secrete sexual hormones and share a pathologi-
cal cause-and-effect connection. In clinical practice, the secretion of
sexual hormones will decrease if Addison's disease occurs, and it will
increase if Cushing's disease takes place. Ensuingly, renal endocrine
irregulation is triggered by a metabolic disorder of the gonad. There-

fore, some hidden disease may possibly exist between the adrenal and the gonad.

II. The pathological significance of the autoploidy between the skin, lungs and hair

According to biological evolution, the lungs, skin and hair are homologous and analogous at the stage of the unicellular animals who are the ancestors of invertebrate animals. For instance, the protozoa respire through their body surfaces. The lungs' respiration begins to dominate when the reptile stage replaces the amphibious stage. Meanwhile, the skin retreats to a complementary position. TCM has already noticed that the lungs are specially related to the skin and hair. It says, "The lungs correspond to the skin and hair, they will surely be affected if the skin and hair catch some cold evils." Clinically, the lungs may be endangered by a latent malignant tumor if the skin suffers from itches, acanthosis nigricans or dermatomyositis.

III. The pathological significance of the autoploidy between the endocrine system and the nervous system

According to biological evolution, the endocrine system and the nervous system are homologous. The nerve gland of an adult ascidian can be regarded as the primitive structure of the pituitary. (Source: *The Body of Vertebrate Animals*). It suggests that the consanguine ties between these systems can be traced back to invertebrate animals. Neurosecretion, the primitive cooperation of the two systems, is carried out by the substance secreted from the neuro-endocrine system. The hypothalamencephalon also controls the pituitary which is an important endocrine gland.

The neuroendocrine cells in the hypothalamencephalon are capable of both nervous functions and endocrine functions. They can

release neurohormones to influence the pituitary. In this way, endocrine regulation is achieved. On the other hand, endocrine regulation influences the nervous system as well. There is a cause-and-effect connection between these two systems due to physiological consanguinity. The endocrine system will be in disorder if the nervous system loses its control; and endocrine disorder will cause nerve problems at the same time. For example, a change in the endocrine system during one's adolescence or menopause is most likely to cause psychosis. Therefore, the two systems are pathologically connected by ties of consanguinity.

IV. The pathological significance of the autoploidy between the meridian system and the nervous system

The meridian system contributes a special part to TCM. A two-thousand-year practice in China has proved that the meridian system has a conducting function although it is not involved in biological evolution. According to TCM, it connects the viscera and limbs by serving as a channel for energy circulation.

The nervous system controls and regulates all the other systems in the body. It plays a decisive role in accepting, transmitting, processing and restoring information. It is derived from neuroganglions in the ectoderm. At present, the genesis of the meridian system still remains unproved; however, these two systems are similar in structure and function. They are possibly homologous on the basis of evolutionary autoploidy. From the viewpoint of structural theory, it can be concluded that the meridian system and neuroganglions are homologous at the fetal stage before differentiation takes place. As far as function is concerned, the meridian system is also conductive and complements the nervous system. They also influence each other pathologically. For instance, the meridian system will be slow to

stimulation if the nervous system goes wrong; on the contrary, the response of the meridian system also foretells the performance of the nervous system. This is the possible autoploidy between these two systems.

V. The pathological significance of the autoploidy between the mammary gland and the sweat gland

The mammary gland has been derived from the sweat gland. In a sense, it is a special sweat gland. Both of them originate from the ectoderm at the fetal stage and share a consanguine tie. In clinical practice, the skin and mammary cancer are pathologically related. A woman will be possibly threatened with mammary cancer if she suffers repeated itches in the skin, skin rash, herpes zoster, acanthosis nigricans, dermatomyositis or peripheral neuritis. According to the autoploidy between these two systems, an early mammary abscess can be cured by Ephedra Decoction, which is capable of inducing diaphoresis; and a mammary abscess with sweating due to debility can be cured by Cinnamon Decoction. All this suggests that their autoploidy has a theoretical value in clinical practice.

VI. The pathological significance of the autoploidy between the bones and the kidneys

Both the bones and the kidneys are homologous in genesis. They originate from the ectoderm of the fetus. Therefore, they are biologically and pathologically related. The TCM doctrine of viscera-state greatly emphasizes this relation. It says, "The bones depend on the kidneys, bone marrow generates from the kidneys." In clinical practice, bone diseases are often cured from the kidneys; whether the bones are strong or not foretells the kidney condition. *Plain Questions: On the Ancient Truth* says, "At the age of twenty-eight, a woman boasts of sturdy bones, long hair and good

health. At the age of sixty-four, a man suffers white hair, overweight, unsteady footsteps and sterility. This is because his bones have gone loose and his sexual hormones have been drained up."

VII. The pathological significance of the autoploidy between the reproductive system and the urinary system

These two systems are homologous and originate from the mesoderm of the fetus. Apart from the gonad and the adrenal, both of which secrete steroid hormones, Bartholin's gland and Cowper's gland are also homologous. Furthermore, the anatomic sites of these two glands are much closer, which tightens their relations. Therefore, they share a cause-and-effect relationship. For instance, a person who suffers vestibulitis often suffers impotence and sterility as well. On the other hand, infection in the urinary system always leads to vestibulitis.

VIII. The pathological significance of the autoploidy between the blood and lymph fluids

The evolution of the vascular system is a gradual process from what is simple to what is complex. The earliest unicellular animal completes its humoral transmission through cyclosis, and animals' blood circulation has been derived from the open circulatory system to the close circulatory system. In the earliest open circulatory system, the blood, lymph and tissue fluids are not separated. Therefore, the blood and body fluids are homologous and analogous at the very beginning. This shows that the blood and body fluid share ties of consanguinity at the primitive stage. This also proves the TCM proposition that the blood and body fluids are derived from the same source.

The blood vessels and the lymphatic vessels are homologous at the fetal stage. They originate from the mesoderm. The vascular

system is the first system that originates in the fetus, and the genesis of the lymphatic vessels occurs two weeks later. Besides, all the lymphocytes are derived from the hemopoietic stemcells in the vitelline. Now, another opinion holds that the earliest lymphatic vessels are derived from the capillaries of the venous endothelium. (Source: *Human Genesis*. Canada. K. L. Muir, translated by He Zeyong, P₂₆₆. People's Hygiene Press, 1982). Therefore, there is a close tie of consanguinity between the vascular system and the lymphatic system. Biologically, lymph fluids come from the tissue fluid in plasma, it enters the capillaries through the tissue fluid filtered from the capillaries and flows back to the veins by way of the lymphatic vessels. Lymphokinesis is a branch of the systemic circulation. In this sense, the lymphatic system extends and complements the vascular system; it also keeps blood and interstitial fluid in balance apart from its defensive connection due to evolutionary consanguinity. For example, an obstruction of lymphatic return will cause hydrops because it creates problems for blood circulation and systemic circulation. At the same time, if blood circulation goes wrong, lymphatic circulation and systemic circulation will be in disorder, and the dynamic equilibrium of body fluids will be out of control. As a result, many illnesses may arise.

IX. The pathological significance of the autoploidy between the liver, stomach and intestines

The liver of vertebrate animals is a large protuberance on the surface of the alimentary canal. It has restoring and transforming functions. Therefore, it is homologous with the stomach and intestines in fetal genesis. All of them originate from the entoderm. TCM holds that the liver and spleen are not only mutually inhibiting but mutually generating as well. Pathologically, they have a cause-

and-effect connection. For instance, the spleen may be first affected by liver diseases. *Synopsis of Prescriptions of the Golden Chamber* says, "Liver diseases affect the spleen, therefore, the spleen should be first reinforced in order to cure liver diseases." These words show the consanguine connection between the liver and the spleen.

X. The pathological significance of the autoploidy between the bladder and the lungs

The bladder and lungs are homologous at the fetal stage. Both of them originate from the mesoderm. According to biological evolution, the allantois has respiratory function in reptiles, birds, and even some mammals. The contractile vacuole of protozoa is the earliest excretory system. For example, the amoeba's contractile vacuole is capable of both respiration and excretion. This proves that the lungs and the kidneys are derived from the same source. The *Emperor's Canon of Medicine* also says, "The bladder is one of the six Fu organs. It corresponds to the skin and the hair in function." (*Spiritual Pivot*). Therefore, the urinary system and the respiratory system complement each other and share a consanguine connection. This accords with the TCM proposition that the kidneys are closely related to the functions of body fluid. TCM holds that the lungs are the upper source of body fluid, and that the kidneys are the lower source of body fluid. The lower source will go dry if the upper source has no water. Thus they are closely related.

The human urinary system has lost its respiratory function, but it still complements the lungs, skin and hair in the functions of body fluid. For instance, man's skin and hair still have respiratory and excretory functions, which copes with the urinary system harmoniously; so the skin is an important complementary organ for the lungs and kidneys. Pathologically, the skin influences the lungs and

the kidneys, and vice versa. This phenomenon is significant in discovering latent illnesses.

On the basis of biological evolution, the analysis above shows that human organs are characterized by fetal autploidy as well as with evolutionary autploidy and analogy. This consanguinity is important to clinical practice in TCM.

In conclusion, the law of reverse motion stressed by *Book of Changes* means a great deal to the science of human life. Especially, the reverse motion of consciousness is the reacting force of the motion of water; it may greatly activate and release man's long-repressed sub-conscious.

(Translated by Zhang Shanglian)

Chapter Twenty-nine

Book of Changes and Bionics

Section 1 The Bionic Idea in *Book of Changes*

Although the history of human evolution covers thousands of years, the evolution of living things has been millions of years. All living things in the world must follow the most basic universal law, even human beings, the paragon of animals, cannot be excepted. In the course of evolution over millions of years, living things have exercised strong adaptability in a grim environment and survived after conquering many disasters.

Thousands upon thousands kinds of living things compete to survive. To avoid harsh natural elimination, they have to develop desperately their adaptable instruments show their respective special prowess in the long process of evolution. All living things now have their own unique skills. Although man is the highest of all living things, he is one of the million kinds of them, just like a drop of water in the sea. Man has many superb skills which other living things have not; however, he is often deficient in some special skills which others have, and some of these are just what man needs. That shows that bionics is a vast field, a resource inexhaustible to

man.

Bionics is the application of biological principles to production. The science of living practice is a science both old and young.

Ancient bionics began in the early period of our civilized history. The figure of a fish can be seen in the colored picture made more than six thousand years ago and unearthed in our country! See Figure 29-1.

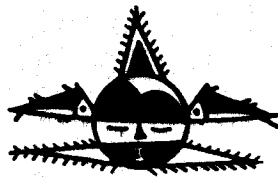


Figure 29-1 Yin Yang Fish of the Yangshao Culture

Book of Changes written more than three thousand years ago pays great attention to bionics. For example, the *Great Treatise on Yi* points out clearly that we should contemplate the birds and beasts and thus learn from bionics how to guide our practice. So it emphatically points out that "anciently, when Bao-xi had come to rule all under heaven, looking up, he contemplated the brilliant forms exhibited in the sky, and looking down he surveyed the patterns shown on the earth. He contemplated the ornamental appearances of the birds and beasts and different suitability of the soil. Near at hand, in his own person, he found things for consideration, and at a distance, things in general. On this he devised the Eight Trigrams." Among them, "contemplating the ornamental appearances of birds and beasts" shows that the origin of the Eight Trigrams has something to do with bionics. For example, the origin of the Yin Yang lines of the Eight Trigrams has something to do with

the crackle of the tortoise shell; the divination in *Book of Changes* also originated from the portent veins of the efficacious tortoise. This has been recorded explicitly in *Book of Changes*, for example, it is said in *Yi: Yi: the First Line, Undivided* (《易：颐：初九》) that "you leave your efficacious tortoise, and look at me till your lower jaw hangs down. There will be evil". All this shows that *Book of Changes* is closely related to bionics.

In the unearthed inscriptions on bones and tortoise shells of the Yin Period (about 1600B. C. -1000B. C.) and Zhou Period (about 1000B. C. -256B. C.) there are many words from bionics. Most of the inscriptions on bones and tortoise shells were pictographs, for example, in the characters of the Celestial Stems and Twelve Branches, the word "巳" (si) is like the figure of a snake. The figure for the word "子" (zi) is like a mouse; "丑" (chou), like an ox; "寅" (yin), like the upright face of a tiger, etc. *Shan Hai Jing* (《山海经》) in the Warring States period also records the bionic achievements of our country, which is an important reference material for bionic studies.

Bionics in our country has a distant source and long history. For a long period, it made outstanding contributions to the productive and social practices of our people. Nowadays it has infiltrated into many subjects such as medicine, genetic engineering, astronomy, agriculture, animal husbandry, physical culture, art, literature, industry and national defence, etc, which is playing an advancing role in the scientific development of our country.

Modern bionics was formally founded in 1960. It is a new and developing borderline science, a science in which biological principles are combined with modern engineering techniques. It has far-reaching significance to the development of every subject.

Section 2 Bionic Medical Science

Bionic medical science is a borderline field in which biology is applied to medical science.

The earliest bionic medicine in our country was wine-making. It began during the Xia Period (about 2000B. C.-1600B. C.) and was recorded in *Tactics of Warring States: Wei Tactics* (《战國策：魏策》). In *Valuable Prescriptions* (《千金方》) of the Tang Dynasty it is said that one can treat gall disease (the disease of purely thyroid enlargement) with the thyroid gland of a sheep. Besides, TCM uses the pancreas to treat diabetes. The pictorial treatment in TCM is a concrete application of bionic pharmacology. For example, the ditches of a walnut are very like the two hemispheres of the brain, so it is imitated to nourish the brain; a pangolin and an earthworm are active by nature, and so they are used to unblock the channels. The tortoise is quiet by nature, so it is used to cultivate Yin. The cicada is skilled in chirping, so it is obtained to open the voice, etc. All the above have played an active role in traditional Chinese pharmacology.

Modern bionics in our country has developed quickly, including the production of various kinds of medical vaccines and antibiotics. What people's eyes are especially focused upon is the fact that our country initiated the artificial synthesis of insulin, which set a precedent for the world's production of artificial synthetic proteins, brought hope to the field of artificial synthesis and showed the vast prospects of bionic medicine. At present, every kind of bionic frontier of science has been developing vigorously such as genetic engi-

neering, micro-organism engineering, cell engineering, etc. The fast development of bionics will certainly forcefully push forward the pace of the medical science.

Section 3 Bionic Qigong

Bionic Qigong is a great achievement of Chinese bionics. It has played a great promoting role in the development of Chinese Qigong. *Book of Changes* puts great emphasis on bionics. Besides the emphasis of the efficacious tortoise in *The Text of Yi* (《易经》), bionics is also greatly emphasized in *The Commentaries on Yi* (《易传》). For example, it is said in the *Great Treatise on Yi* that "looking up, he (Bao Xi) contemplated the brilliant forms exhibited in the sky, and looking down he surveyed the patterns shown on the earth. He contemplated the ornamental appearances of birds and beasts and the different suitabilities of the soil. Near at hand, in his own person, he found things for consideration, and at a distance, things in general." In these words "contemplating the ornamental appearances of birds and beasts" emphasizes the importance of bionics.

Bionic Qigong began in the ancient times in China. For instance, there is the record of the snake Qigong in *Shan Hai Jing*, which says that "Outside the northwest sea, there is a god. It is red with a man's face and a snake's body. The length of its body is about a thousand li. Its two eyes are narrowed into slits. When they are closed, the sky is dark; when they are open, the sky is light. It does not eat, sleep or breathe. Wind and rain are its food. It lightens the extremely dark place. It's called Zhulong (candle dragon)."

(*Da Huang Bei Jing* 《大荒北经》). Besides, the snake Qigong is also recorded in *Hai Wai Bei Jing* (《海外北经》). For example, "there is a god at Zhongshan Mountain. It is named Zhu Yin. When its eyes open, day comes; when they close, night comes; when it blows, winter comes; when it breathes in, summer comes. It does not drink or eat, and seldom breathes. Once it breathes, wind comes. Its body stretches about a thousand li. It is to the east of Wuqi (name of a place). It is an animal having a man's face and a snake's body with red color. It lives at the foot of Zhongshan Mountain.

A record of imitating the tortoise Qigong is found in *Xing Qi Yu Pei Ming* (《行气玉佩铭》) unearthed in Ma Wang Dui in Changsha, 1973. It says, "In directing strength, swallow it first. Then it is stored. At this time, stretch your neck and the strength goes down. And then it is fixed; next it becomes firm; and then germinates; and dies at last." This shows that the Qigong of imitating the tortoise was very popular in the Warring States Period. In the *Zhuangzi: Ke Yi* (《庄子: 刻意》), there is a record that "to stretch the neck like a bear and stretch the body like birds is for longevity". In the Period of Three Kingdoms (about 220 - 280), a famous doctor named Hua Tuo created the Dao Yin Gong—Five Beasts' Play by imitating the behavior of five kinds of beasts. In the *Writings of Late Han Dynasty: Commentaries on Hua Tuo* (《后汉书: 华佗传》), it is written that "Hua Tuo told his student Wu Pu that 'I have an art called Five Beasts' Play. The first is the tiger; the second, the deer; the third, the bear; the fourth, the monkey; the fifth, birds. These can be used to eliminate disease and are helpful to the legs and feet. We use them to guide our actions. If you feel uncomfortable in your body, try to imitate one beast's play.

Then you will feel comfortable and will sweat. Your face will glow, your body will become relaxed and you will have the desire to eat." The details are as follows:

Imitating the tiger: imitate the tiger's boldness, powerfulness and rapidness, such as its action of pouncing and pressing, sudden turning and violent dashing, etc, so as to increase the violence of the body and to make for easy blood circulation.

Imitating the deer: imitate its meekness and extensiveness, for example, its stretching of the neck, its forward-stretching of the body, its back-turning of the head, its raising of the head and its running, etc, so as to stretch the muscles and bones and to exercise the limbs and trunk.

Learning from the monkey: learn from the monkey its agility and activeness, such as its jumping, climbing and stretching, etc, so as to improve nimbleness and to invigorate the body.

Getting from the bear: get from the bear its steadiness and vigorousness such as its stepping, crouching and stretching of the paws to strengthen the waist and buttocks.

Practising like the crane: practise the crane's carefree manner and stiffness such as spreading the wings, flying and flapping the wings so as to expand the chest and strengthen the heart and lungs.

The most prominent achievements of Bionic Qigong are as follows:

I. The hibernation of the tortoise and snake and the quiet Qigong

In the long course of the evolution of living things, many animals, in order to adapt themselves to environment, have had to adopt the way of hibernation so as to save their energy and preserve their strength during the cold winter. At present, scientists are

preparing to install a sleeping freezer in imitation of an animals' hibernation. If a man can be thus frozen, he can live 200 years. That is, if a man sleeps in a freezing house at night and decreases his body temperature to 15° in the state of hibernation, he will live to be 200 years old. The oxygen consumption of a hibernating snake is only 10% of normal. Man can not change his body temperature because he is a homiothermal animal, but he can adopt the way of slowing down breathing to save his energy. Hence, the quiet Qigong with outside quietness and inside activeness is created to save energy and constantly develop the preserving ability. Developing the preserving ability is one of the important links in prolonging life. The reason why TCM puts strong emphasis on the relationship between the kidneys and decrepitude and death is that "the kidneys are responsible for storing". The quiet Qigong can decrease the consumption of energy, protect the vitality effectively and prolong life. Thus it is worth high praise.

II. Foundation of the Foetus' Breathing Gong

The foetus' breathing Gong was founded by imitating the slow breathing of a tortoise, the nonbreathing of "Zhulong" and the breathing of a human foetus. The characteristic of the foetus' breathing Gong is to breathe deeply and slowly, inhaling directly to the pubic region, then exhaling from the pores of the whole body. It is very significant to train the ability of "sub-breathing" and to exploit the potentialities of pores' breathing as a reserve. It may be said to be a simulation of the cell membrane of ancient unicellular organisms. TCM has long noticed the significance of the pores in breathing. For example, it is said in the *Emperor's Canon of Medicine* that "the three Jiao and the urinary bladder correspond to the pores". (the three Jiao refers to the three parts in human body

including the upper Jiao, the middle Jiao and the lower Jiao. The upper Jiao refers to the part from the upper mouth of the stomach to the part below the tongue; the middle Jiao refers to the part between the upper mouth and the lower mouth of the stomach; the lower Jiao refers to the part from the lower mouth of the stomach to the pelvic cavity). This sentence points out that there exists a corresponding relation between the pores and the vitality of the three Jiao. The thirty-first difficulty in *The Classic of Difficulty* (《难经》) also points out that "the three Jiao are the beginning and the end of energy". The thirty-eighth difficulty says that "the three Jiao are the envoy of vitality. They manage all the energy". The *Synopsis of Golden Chamber* (《金匱要略》) says "the pores are the places for energy to go to the three Jiao". (*Zang Fu Channels and Pulse Conditions*《脏腑经络先后病脉证》, the first). This stresses that the pores are the places for energy to go in and out. It shows that TCM has always attached importance to the functions of the pores' breathing. Billions of pores, like small windows of human body, assist in the breathing of the heart, lungs, mouth and nose. So it is very significant for bionic Qigong to emphasize foetus' breathing and the absorbing of breath through thought to improve the breathing of the pores on the skin. It is also a practical example of imitating the ancient organisms.

III. The significance of Bionic Pi Gu and Shi Qi

Pi Gu means to stop eating. There is a record of the Zhulong's not eating in the above-mentioned *Shan Hai Jing*. The hibernating animals can still pass winter without eating for a long time. Why can one keep in good health without eating? Because after the animal's eating, the food's digestion, absorption, transformation and preservation all need to consume a great deal of energy. Not on-

ly is the load on the digestive system quite heavy, but it also is a burden of the heart and lungs. For instance, after eating, especially after a full meal, the heart beats faster, breathing is deeper, and the liver and other internal organs are also involved in a "fight" indirectly. A great deal of blood in the whole body supports the digestive system so that the supply of blood to the brain is reduced correspondingly, and one feels sleepy and cannot work any more. This is the so-called "stomach full but spirit hollow". So in the prerequisite of unaffecting the reserve, the discretionary reduction of food has the significance of lightening the burden on the human body. The burden on the spleen and stomach should be lightened at least once a week so that they have a chance for adjustment.

Shi Qi is a way of keeping good health by imitating the tortoise' swallowing air. In the ancient times the way of eating air including eating light—swallowing the cream of the sun and the moon—was known. For example, in *Shan Hai Jing*, eating air for living is recorded: "There was a country called Wu Ji Min. Its people were named Ren who were offsprings of those without frame, who ate air and fish." (*Da Huang Bei Jing* 《大荒北经》). Why can eating air keep one in good health? Some people think that in a human's intestine there is a kind of bacteria which can make the swallowed air perform nitrogen fixation and then change it into protein, just like the nitrogen fixation of root tuber plants. This is also an important content of bionic Qigong.

IV. The mystery of bionic abdomen Qigong

Most long-living animals breathe mainly with their abdomens such as do the tortoise and the snake. The tortoise breathes with its abdomen and the snake crawls with its abdomen, so both of them live a long life. Why is breathing with abdomen so closely bound up

with life? Because all the internal organs except the heart, brain and lung are contained in the abdomen. It includes the digestive system, blood-making system, urinary and reproductive system and part of the internal system and lymphatic system, and it also has a lot of blood vessel nerves. So the abdomen is very important. But since man began to walk upright, he has been breathing mainly with his chest, and the way of breathing with his abdomen began to degenerate, then the movement of the abdomen was weakened. The result is that wastes are liable to be accumulated, the blood is liable to stagnate, and when these are too serious, the supply of blood to the brain may be affected because of the narrow blood circulation in the abdomen. So it is very important to enhance the way of breathing with the abdomen and thus improve its movement.

A big advantage of abdomen Qigong is that it can promote the peristalsis of the intestine, speed up the discharge of poisonous elements and decrease the chances of being poisoned by one's own body so as to reach the aim of slowing down the process of senility. Because the intestinal system is the primary source of poison in the human body, the amount of bacteria in the excrement is prodigious, the detainment of the excrement may not only speed up the reproduction of bacteria but also increase the absorption of poisonous elements, and abdomen Qigong is the most effective cathartic drug, having important significance in resisting senility. Besides, it is effective in preventing colon cancer and hemorrhoids.

The method of abdomen Qigong is not complicated. A person needs to draw back the abdomen and breathe in deeply, with his thoughts sending the breath down directly from the nose to the pubic region. Rest the breath for a short while, dilate the abdomen and breathe out, and then draw back the abdomen and send the

breath down from the abdominal cavity. If one can open up his veins of Ren and Du, it is better for the breath to go up from the vein of Du and then be breathed out. Repeat this several times till the pubic region in the abdomen feels hot. Then massage and pat the abdomen wall several times and press the Zhong Shu acupoint (the navel) lightly with the fingers, the Zu San Li acupoint (the point three Chinese *cun* * below the outside of the ankle), and the Hegu acupoint (the hollow part between the end of the index finger and the thumb of your hand) till they feel searing heat.

Furthermore, abdomen Qigong includes the movement of the pelvic cavity. That is, at the same time a person is breathing heavily with the abdomen, he should take some concerted action to close and stretch the anus, draw back the abdomen and raise the hands. The aim of this is to promote blood flow in the pelvic cavity. Because the organs in the pelvic cavity involve man's internal system and reproductive and urinary system, the pelvic cavity is a part that should not be neglected.

Abdomen Qigong can be done any time a person is running, walking, sitting, lying or at breaks. This Gong is very convenient and easy to do. If one keeps doing it every day, it will be helpful for eliminating fat in the abdomen, removing wastes from the abdomen, improving blood circulation and promoting the life activities of the internal organs in the abdomen and the pelvic cavity.

Abdomen Qigong is a kind of massage Gong of the internal organs in the abdomen, and is also a good activation for them. It can play a beneficial role in the breath of the internal organs. If possible, it will be greatly beneficial to the abdomen to crawl on the ground like animals for some time every day.

V. The long-living value of the bionic spinal column Gong

The spinal column not only is the big column of the human body, but more importantly, it stores the spinal cord and its nervous root. It is an important part of the nervous system. So to develop firmness and tenacity of the spinal column has great significance for protecting the spinal cord and maintaining a human body's life activities. The tortoise and snake seem to have been aware of this problem earlier than man, so the tortoise likes the movement of stretching its neck and the snake likes to wriggle its spinal column. All these are important elements of longevity for these two animals.

To imitate the tortoise' movement of stretching and withdrawing the neck can improve the blood circulation in the neck and prevent the disease of the cervical vertebra and thrombosis of the carotid artery. Thrombus of the carotid artery is liable to lead to a dissatisfactory blood-supply of the cerebral artery and basal arteries, hence, dizziness and headache often appear. So movement of the cervical vertebra can relieve old people of great sickness.

A big snake has more than 400 vertebrae. It often does exercises of its spinal column, so it can maintain its ability of coming and going quickly. But man cannot do the same. Before getting old, his back becomes bent and hunched and his action is not agile. And it is easy for him to develop hyperplasia of inter-vertebral disc which can affect the movement of the lower limbs. So man should imitate the snake to learn to do spinal column Gong so as to maintain his functions. The practical method is as follows:

Neck Gong: stretch and withdraw the neck and shrug the shoulders, with the movement of expanding and drawing back the chest. This Gong is also coordinated with the revolving movement of the neck.

Waist and spine Gong: bend forward and stretch the legs back-

ward and do revolving movement of the waist several times, being assisted by pulling a trunk or holding a horizontal bar with two hands and making stretching movement. Or do the exercise of jumping up after crouching. TCM holds that the waist is the hollow organ of the kidneys. The function of the waist and spine makes the waist firm. To strengthen the waist is to invigorate the kidneys. The kidneys are the inborn essence of the human body. The prosperity and decline of the kidneys determines man's whole course of life—birth, growth, youth and death. So doing the waist and spine Gong frequently is an important link to strengthening the waist, invigorating the kidneys and preventing senility.

VI. Bionic crawling Gong

Crawling is a kind of overall movement of the whole body. Except for the anthropoid and man, almost all the mammals and reptiles move with four limbs. The advantage of the crawling Gong lies in that the strength of the movement of the spinal column and the abdomen is relatively great, and man can move his waist and abdomen at the same time. Moreover, the loads of both the breathing with chest and breathing with abdomen are comparatively balanced. The movement of the neck is also strong. All this can make up for the movement of other parts of human body which have not been able to be exercised after man began to walk uprightly. If a person can persist in crawling for a certain length of time every day, it will be very beneficial to his health.

The above-mentioned bionic Qigong adopts the advantages of some animals' movements, and replenishes and rectifies the deficiencies of the human body. It is very beneficial in helping people to keep fit. Besides, bionic sexual intercourse is also quite beneficial to the sexual health of human body (see Chapter Twenty-four *Book of*

Changes and Sexology of this book), which reflects fully the vast prospects of bionic medicine.

To sum up, bionics originated from *Book of Changes* and up to now has become a subject both ancient and forward. The bionic idea in *Book of Changes* still has important value today.

(Translated by Wang Suying)

Chapter Thirty

Book of Changes and Genetics

Section 1 Summary of Genetics

The origin of life, the continuity of life and the thinking of the brain are the three central concerns of human body science. Among these, biotic genetics is the key content for the continuity of life. Genetics is the science of studying heredity and variation. It is one of the subjects for exploring the mystery of human life.

Heredity and variation are necessary processes of life phenomenon. The study of heredity and the variation of living things is called genetics. It mainly includes the three central contents of the essence and transmission of the hereditary substance and the accomplishment of the hereditary messages.

The development of genetics has experienced three periods: cytogenetics, micro-organism genetics and molecular genetics.

The period of cytogenetics developed mainly at the end of the 19th century and beginning of the 20th century. It solved the problem about the basis of cytology of genetics, or put another way, solved the problem of the material basis of genetics. This is an essential issue. The main achievements of this period were that Boveri and Sutton found the function of the chromosome, and that Morgan

(1866-1945) further proved the Mendel Law, founded the gene theory and attested that the source of heredity lies in the genes of the chromosomes inside the cell nucleus.

The period of micro-organism genetics developed mainly during the middle of the 19th century. At that period biogenetics entered an important turning point—the micro-organisms era. The main achievement of this period was that Avery proved deoxyribonucleic acid (DNA) is the main hereditary substance.

The molecular genetics period developed from the end of the 19th century to the 20th century. This stage is a swift and violent developing period for biology and genetics. A great breakthrough has been achieved. Biogenetics has entered another new turning period, that is, it has leaped from the cytology level to the molecular level. In 1967, the American scientist Nilonberg et al decoded the genetic code, disclosed the mystery that the trinity of nucleotides was a group of codes, overcame the last difficulty of biogenetic engineering and put forward the central law of the transmission of hereditary messages. In the 1970s, the American named Temin found the "reverse transcriptase", put forward the theory that "transcription can be reversed", and opened a new world for genetic engineering.

In brief, the decoding of the genetic code, the definition of the central law, and the artificial creation of protein and nucleic acid are the three great achievements in the development of modern molecular genetics.

I. The glad tidings brought by genetics to human beings

The discovery of the genetic duplicating system has important significance to industry, agriculture, medical treatment, health and national defence.

II. Contributions of genetics to agriculture and stock raising

The role of genetics in agriculture and stock raising lies first in breeding. Genetics supplies the theoretical basis for the improvement of breeds. At present some achievements have been made in the breeding of rice, wheat, cotton, corn and Chinese sorghum. In the future, with the constant development of genetics, both agriculture and stock raising will make greater achievements in the improvement of breeds.

New breeds bred by sexual hybridization are not only faster in growth but also higher in quality than the breeds by natural evolution. This is a challenge for natural selection. At present, the process made in the biological nitrogen-fixing engineering has brought about vast prospects for solving the problem of fertilizers in agriculture.

III . Contribution of genetics to industry

The contribution of genetics to industry is medical industry at first. With the application of the gene engineering, the artificial creation of human brain hormone, insulin and interferon have succeeded one after another. In 1976, the artificial creation of insulin succeeded in China, which brought glad tidings to the sufferers of endocrine disease and diabetes. And with the application of genetic engineering, the productive level of antibiotics has been raised constantly, which greatly improved man's resistance to all kinds of germs. In environmental protection, with the application of genetic engineering, micro-organisms can be used to dispose of three sorts of trash. More inspiringly, through genetic engineering, industrial micro-organisms can be applied to extract oil and open up mines and then to recover and treat them. Even artificial edible oils and protein foods can be produced. The prospects are vast.

In the national defense industry, with the development of ge-

netic engineering, gene weapons can be used to resist atomic weapons, chemical weapons and biological weapons.

IV . Contributions of genetics to medicine

First, the application of the genetic theories has brought hope for the treatment of more than 4,000 kinds of hereditary disease. Through "gene therapy", the defective genes can be replaced by normal genes to cure disease.

Especially in resisting cancer, with the discovery of the cipher code of carcinogenic genes and the appearance of the cipher code of anticarcinogenic genes, a new discovery has been made in the cancer system. The so-called theory of cancer genes was put forward by the Americans Hwebner and Todaro in 1969. Their view is a hologram of cancer genes. That is, there exist carcinogenic genetic messages in all cells of the human body. Normal cancer genes are refrained and cannot be derailed. Canceration will appear only when the regulating and controlling function is not normal, then the original cancer genes will be activated into cancer genes. The theory of cancer genes reveals that it is a difference of one basic group in the DNA of cells that leads to changes of the cipher code in the trinity, hence the amino acid is changed and cancer appears.

In 1976, the first cancer gene was found. According to the modern geneticists' findings in the cancer cell of the bladder, among about 6000bp, G is replaced by a basic group T. As a result, the cipher code in the trinity is changed from GGC to GTC and aminoacetic acid is replaced by valerian ammonia acid in amino acid, hence canceration is brought about.

Section 2 Life's Genetic System

Modern medicine holds that heredity is a kind of duplicating engineering and is the most complicated event in life. Life is the existing way for protein. The realization of the continuity of life must depend on protein. Therefore, the genetic engineering of life is conducted in protein.

The chromosomes in a cell nucleus are the chief basis of genetics. Or chromosomes and genes are the decisive elements of heredity. They are the main ingredients of the cell nucleus.

Human chromosomes amount to 46 segments. They are divided into two big groups. One half (23 segments) come from the sperm of the father, the other half comes from the ovum of mother. Chromosomes include autosomes and sexual chromosomes. Both men and women have 22 pairs of autosomes. The other two segments are sexual chromosomes. The difference of sex between a male and female depends on the difference of the two segments of sexual chromosomes.

Sexual chromosomes are divided into two kinds: X and Y. Chromosome X is female and chromosome Y is male. The difference between male and female lies in the fact that all chromosomes in a female's cells are paired, among them, the two segments of sexual chromosomes (XX) are also paired; however, there are two segments of chromosomes in male's cells that cannot be paired, one is chromosome X, the other is chromosome Y.

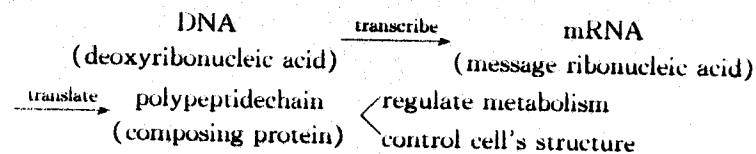
Genetic engineering is conducted through the genes in chromosomes. Genes are the carriers of the message existing on specific

points of a chromosome. Up to now, the minimum number of genes in a human body exceeds 1,800. There are two paired genes at every gene point of every pair of autosomes.

The transmission of the genetic message stored in the genes is carried out by nucleic acid. That is to say, the heredity of living things depends on nucleic acid, which is actually the duplication of nucleic acid. Nucleic acid is one of the ingredients of nucleoprotein. The heredity of chromosome genes is conducted through nucleic acid. The molecular structure of nucleic acid stores all the genetic messages of living things.

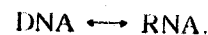
Nucleic acid includes two primary types: deoxyribonucleic acid (DNA) and ribonucleic acid (RNA), with the former being the chief one. A molecule of DNA is composed of four paired basic groups of purine and pyrimidine. Concretely, amino purine (A) pairs with thymus pyrimidine (T), guanine (G) pairs with cytosine (C).

The central law of molecular genetics is:



that is, deoxyribonucleic acid transcribes the message it stores onto the messenger—ribonucleic acid, which is used as a template, and then the messenger, ribonucleic acid "translates" the genetic message to the polypeptide chain.

In modern times, Lao's sarcoma virus was studied to find the reverse transcriptase and prove that RNA can be transcribed in reverse order onto DNA. Then the central law was changed into



What is the genetic code?

The genetic code is the code translated into the amino acids by mRNA (messenger ribonucleic acid). This coding is carried out by the basic group in the nucleotide. There are only four basic groups in RNA, while there are 28 in amino acid, so the key to the coding lies in the arrangement of the basic groups. The mystery arises from the infinite arranging forms of the four kinds of basic group (A. T. C. G.) which contain boundless genetic messages.

The molecule of nucleic acid (especially DNA) is very big, containing millions of basic groups. If the arranging order of the basic groups is different, the DNA is different. That is, although the two basic groups are the same in kind and quantity, the problem lies in differences in the arranging order. The meaning and quality change with the difference in the arranging order. So the genetic message depends on the arranging order of the basic groups.

In 1967, the American scientists Nilonberg and Corena decoded the biogenetic code and found that the basic group of RNA was coded by 3, that is, coded with 3 letters (with neither overlapping nor separation of nucleotides between two codes), which is called a trinity, and they also published a genetic code chart.

In 1984, a scholar in China, Qin Xinghua, found that the genetic code chart coincided with the sixty-four hexagrams in *The Text of Yi*, further recovering the significance of the Eight Trigrams of *The Text of Yi* in genetics. (*The Eight Trigrams Map and DNA* by Qin Xinghua, Subscience, 1984, First Issue, P₄₁₋₄₂).

Section 3 Theory of Change and the Genetic Principle

The theory of change is closely related to the genetic principle. *Book of Changes* emphasizes change and unchange, which concurs with the variation and heredity principle in genetics. Change refers to the fact that all things are moving and changing constantly, just like what is said in the *Great Treatise on Yi*, "the changes and transformations are the emblems of the advance and retrogression of the vital force in nature". This implies that all things, including all living things, are moving and changing constantly and the aim of this lies in "advance and retrogression", that is, continuing what should be developed and abolishing what should be discarded. Unchange refers to the relative stagnancy of things. There Would be no qualitative determination of things without their relative stagnancy.

Heredity and variation together compose the genetic content of living things. Both of them embody the movement and development of living things. In them, heredity, relatively speaking, embodies the facet of stagnancy, which is the gene's retaining development of the species of living things, just like the saying "as you sow, so will you reap". *Book of Changes* emphasizes "change", that is to say, all things are constantly changing. What heredity embodies is just this principle. The inherited individual is similar to its parental generation but it cannot be absolutely the same as it. Nature cannot duplicate the same individual. So, inheritance can only be similar, but not be the same. That is to say, during the course of life there exist variations besides those of heredity. The inherited individual is al-

ways a new thing, just like what is said in the *Great Treatise on Yi*, "Production and reproduction is what is called the process of change."

Variation in the course of the heredity of living things is caused by difference in the genetic code. The variation stresses that in the genetic code disparity can appear according to need. The descendants produced only by vegetative propagation get their heredity from only one parental body, therefore, there is greater heredity between the filial generation and the parental generation; while the advanced animals' descendants produced by sexual propagation get their heredity from two parental bodies and the complexity of heredity is increased, so they show greater variation. All in all, the result of heredity and variation is similarity (heredity) and difference (variation).

The relationship between heredity and variation is like the principle of the dialectical relationship between change and unchange in *Book of Changes*. They are the unity of one contradiction and they are interdependent and interactive. That is, we should both develop and retain, we can develop both in the previous way and in another way; we can change both gradually and suddenly. The general aim is to develop and to vary.

Section 4 The Eight Trigrams, the Grand Terminus and the Genetic Code

With the swift and violent development of biogenetics, the genetic system of the gene has been revealed. And the decoding of the

genetic code is a great breakthrough in biogenetics.

How can the four basic groups in DNA correspond with the 20 amino acids, with no overlapping and separation of nucleotides between two codes? This genetic code was revealed by the American scholars Nilongberg and Corena in 1967. They found that the trinity composes 64 arranging orders. That is to say, there are 64 cipher codes altogether. These cipher codes coincide surprisingly with the round sketch map of the sixty-four Hexagrams in *Book of Changes*. see figure 30-1.

Among these codes, the four basic groups in DNA are divided into two kinds of different qualities that are opposite to each other. That is, they are divided into the Yang purine and the Yin pyrimidine like the two elementary forms of Yin and Yang of the Grand Terminus. The four basic groups are just like the four emblems of Greater Yang, Greater Yin and Lesser Yang, Lesser Yin in *Book of Changes* and correspond with the form of the two hemispheres of Yin and Yang in the Eight Trigrams of the Grand Terminus producing the four emblems, like the following:

Purine	Pyrimidine		
Yang	Yin		
—	--		
A—T	G—C		
amidopurine	thymus pyrimidine	guanine	cytosine
=	=	=	=
Yang in Yin	Yin in Yang	Yang in Yang	Yin in Yin
Lesser Yang	lesser Yin	Greater Yang	Greater Yin

It has stronger generality and regularity to show the arrangement of the 64 cipher codes of the trinity in the heredity of living

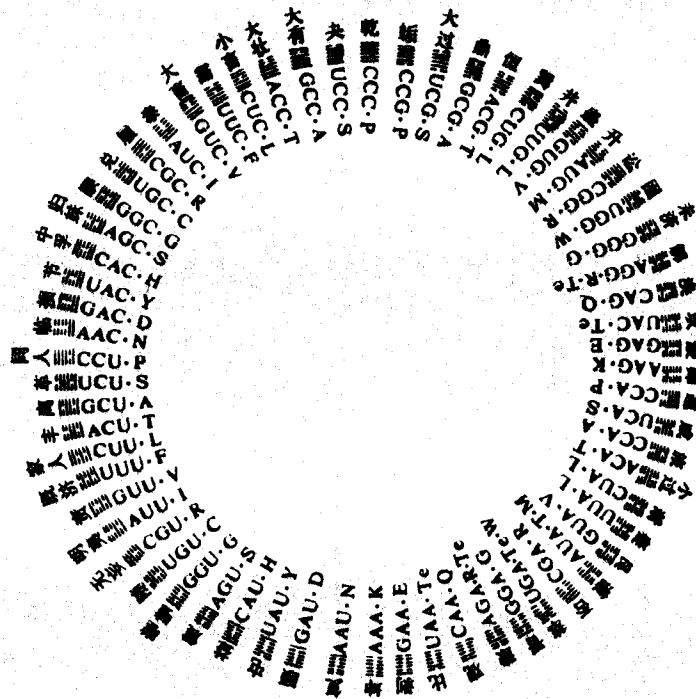


Figure 30-1 Sketch Map of the sixty-four Hexagrams and the genetic code
 (According to *Study on the Mysterious Relation And Law of the Genetic Code and the Eight Trigrams in Book of Changes* by Wang Qingyun, Wei Chongqin)

Notes to this figure:

乾 Qian	姤 Gou	大过 Da Guo	鼎 Ding	恒 Heng	巽 Xun
井 Jing	蛊 Gu	升 Sheng	讼 Song	困 Kun	未济 Wei Ji
解 Jie	涣 Huan	坎 Kan	蒙 Meng	师 Shi	遁 Dun
咸 Xian	旅 Lü	小过 Xiao Guo	渐 Jian	蹇 Jian	艮 Gen
谦 Qian	否 Pi	萃 Cui	晋 Jin	豫 Yu	观 Guan
比 Bi	剥 Bo	坤 Kun	复 Fu	颐 Yi	屯 Tun
益 Yi	震 Zhen	噬嗑 Shi Ke	随 Sui	无妄 Wu Wang	明夷 Ming Yi
贲 Ben	既济 Ji Ji	家人 Jia Ren	丰 Feng	离 Li	革 Ge
同人 Tong Ren	临 Lin	损 Sun	节 Jie	中孚 Zhong Fu	归妹 Gui Mei
睽 Kui	兑 Dui	履 Lü	泰 Tai	大畜 Da Chu	需 Xu
小畜 Xiao Chu		大壮 Da Zhuang		大有 Da You	夬 Guai

things with the round sketch map of the sixty-four hexagrams in *Book of Changes*. On the other hand, this shows the universal significance of the Eight Trigrams principle of *The Text of Yi*.

In 1984, Qin Xinghua published a paper putting forward the question about the coincidence of the genetic code with the sixty-four hexagrams, which is a contribution to the study of *The Text of Yi*. Mr. Qin summarized that "the achievements made in modern physics and biology have given strong support to the general tendency—from simplicity to complexity, from low level to high level—in the development of matter as revealed by the map of the Eight Trigrams". (Qin Xinghua *The Eight Trigrams Map and DNA*, Sub-science, 1984, First Issue).

In the same year, Cai Hengxi put forward the mid-extreme theory regarding the genetic code and the Eight Trigrams. That is, the third cipher code of the trinity in the genetic code and the Eight Trigrams is neutral, whose variation does not change the quality of the amino acids. This embodies the theory in *Laozi* that "Tao gave birth to the One; the One gave birth successively to two things, three things, up to ten thousand. These ten thousand creatures can not turn their backs to the shade without having the sun on their bellies, and it is on this blending of breaths that their harmony depends." (Cai Hengxi *The Grand Terminus Map and the Genetic Code*, *Natural Information*, 1984, Third Issue)

From the comparison between the round sketch map of the sixty-four hexagrams and the chart of the genetic code, it can be seen that the round sketch map of the sixty-four hexagrams can really reflect the law of the genetic code, because the genetic message depends on the arranging order of the basic groups, and the arranging order of the codes of the trinity in the basic groups represents all dif-

ferent kinds of genetic codes, and the trinity of the Eight Trigrams; composed of the divided lines and undivided lines, stands for the natural arranging order of the genetic code. This shows the great and important value of the map of the Eight Trigrams in *The Text of Yi* in improving the genetic law of living things.

In 1988, Yang Yushan produced the map of the Eight Trigrams of "commonly-used" codes. He used the undivided line to stand for the strong nucleosides C and G, and the divided line for the weak nucleosides U and A. The 64 codes could be exactly aver-

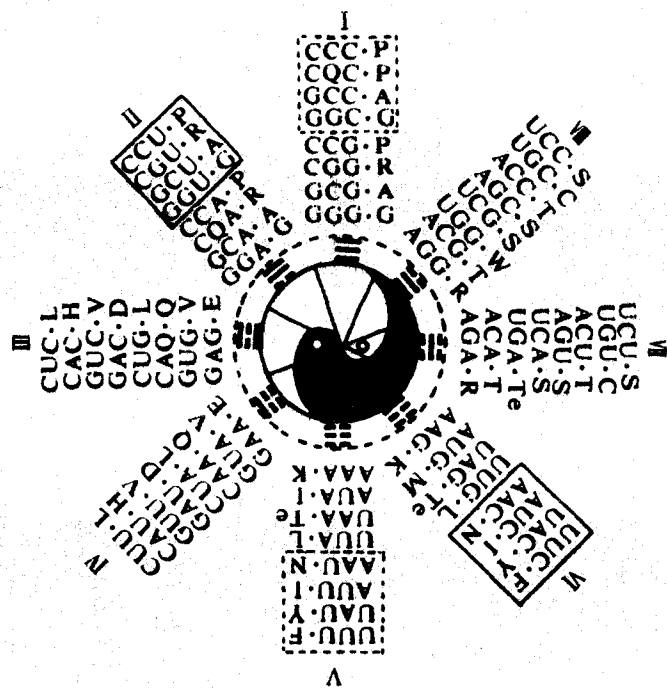


Figure 30-2 Eight Trigrams Map of "common-used" Codes
(According to Yang Yushan, *Arranging and Expressing the Characteristic of the Genetic Code with the Eight Trigrams' Map and Its Significance*)

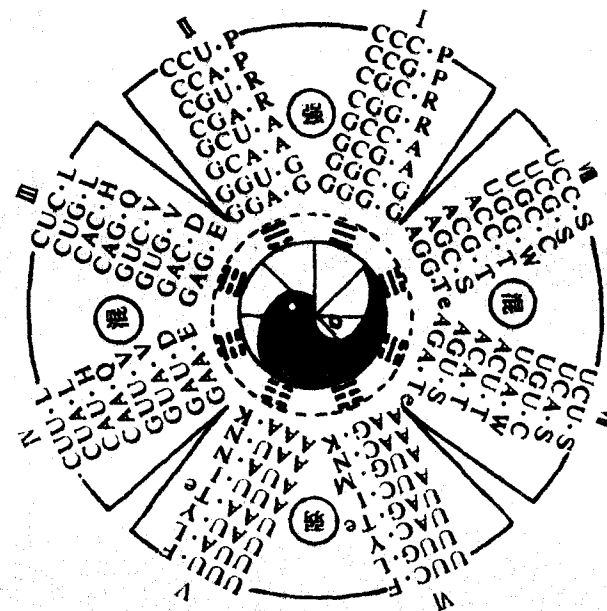


Figure 30-3 Eight Trigrams Map of the Codes in the Body of Linear Particles of Some Mammals

(According to Yang Yushan, *Arranging and Expressing the Characteristic of the Genetic Code with the Eight Trigrams' Map and Its Significance*)

Notes to this figure:

强 strong 弱 weak 混 mixed

aged into eight groups, hence their relating law was reflected more concentratedly. They coincided naturally with the ancient China's Eight Trigrams' law, which further attested the universal significance of the Eight Trigrams' law, as in map 30-2 and 30-3. (According to Yang Yushan, *Arranging and Expressing the Characteristic of the Genetic code with the Eight Trigrams Map and its*

Significance. Nature Magazine, Volume 11, 11th Issue, P₈₃₂₋₈₃₄).

According to the theory of Yin and Yang, the original Yin and Yang can be divided again into Yin and Yang. The idea of "one divides into two" of the Yin and Yang is endless. From this point we can draw an inspiration—the basic group cannot possibly be the smallest unit of Yin and Yang. There must exist a smaller one. Its revelation is waiting for the development of science.

Section 5 Book of Changes and Eugenics

Eugenics is a science directed toward reforming the qualities of human body through heredity. Its aim is to make human beings excellent in terms of intellectual and physical abilities.

The aim of Eugenics is to choose excellent birth and excellent breeding and to improve the quality of human beings under the guidance of the genetic theory. Eugenics will make it possible to save man from passive natural selection. At present, the appearances of test-tube babies, external fertilization and parthenogenic reproduction have attested to the fact that it's possible to foster an excellent race through excellent genes. Eugenics will make contributions to the development of the human race.

Eugenics at first sprouted during the Yin Zhou period. There is the word "孕" (pregnancy) in the inscriptions on bones or tortoise shells. The strict ethic principles of Confucianism in our country objectively played an active role in developing excellent births and excellent breeding. For example, in *Zhou Li* (《周礼》), there was the admonition of prohibiting marriage between members of the same

family. Because of the worship of Confucianism in feudal times and the close relationship between medicine and Confucianism, most doctors were familiar with Confucianism and many of them were concurrently Confucianists. Education in Confucian etiquette started in prenatal education, which had a potential influence on the Chinese ethic of excellence.

Eugenics includes basic eugenics, social eugenics and clinical eugenics. Basic eugenics is mainly a study of excellent births from the aspect of biology and basic medicine, such as human genetics, medical genetics, teratology etc. Social eugenics is mainly related to researching excellent births from the aspect of social science, sociology and anthropology, including demography, sociology, ethics, law, prenatal education, pedagogy and environmental protection. Clinical eugenics refers to the concrete measures for excellent births such as examination before marriage, hygiene before and during pregnancy, parturition guardianship during puerperium and the health protection of a newborn baby.

The application of *The Text of Yi* to medical genetics is very extensive. For example, some scholars put forward a method for controlling sex in birth according to the theory that "the attributes expressed by Qian constitute the male; those expressed by Kun constitute the female" in *The Text of Yi*. The detailed idea is as follows: the male's semen contains two kinds of chromosomal spermatozoa X and Y, while the female's ovum contains only one kind of chromosome of X. If the chromosomal spermatozoon of Y in semen combines with the chromosome of X in the ovum, there will be a male. The odd number is Yang (YX), "the attributes expressed by Qian constitute the male"; if the chromosome spermatozoon of X in semen combines with the chromosome of X in ovum, there will be a

female. The even number is Yin (XX), "the attributes expressed by Kun constitute the female". This shows that the prosperity and decline of the parents' energy of Yin and Yang has a close relationship to the sex of their children. Besides, the acid-resisting ability of the chromosome spermatozoon of X in semen is stronger, and that of Y is weaker. So, the acidity and basis of the vagina is very important. It matters a lot. In sexual intercourse, if the female gets her orgasm first, plenty of secreted fluid will weaken the acidity of the vagina, which is beneficial to the upgoing of the spermatozoon of Y, Y will combine with X (ovum), and there will likely be a male. Otherwise, if the female does not have a pleasant sensation and the male ejaculates semen first, there will likely be a female. Furthermore, if the number of the spermatozoa per milliliter exceeds 80,000,000, the proportion of the spermatozoon of Y will be higher. So, if a person wants a male child, his frequency of sexual intercourse should not be too high (according to Chen Zhengfang, *Primary Probe into the Eight Trigrams and Fertility—Paper for the International Academic Conference of Research on the Relationship Between Medicine and Changes in Gui Yang*. 1989).

The achievements of ancient eugenics in China were about as follows:

I. Commandments of seeds

Commandments of seeds is an important aspect of ancient eugenics in China. For example, in *Chu's Yi Shu* (《褚氏遗书》) written by Chu Cheng in Nanqi during the Warring States Period, it says: "Male and female should combine when they are strong; if they mate when their energy of Yin and Yang is substantial, the female will become pregnant, and then have a son who will be strong and live a long life." The early sages particularly emphasized that

adverse factors at the moment of mating would affect the next generation. So they put forward the commandments of mating.

For example, the seeding method mentioned in *Valuable Prescriptions* written by the great doctor Sun Simiao during the Tang Dynasty emphasizes that mating should be avoided when there is strong wind and heavy rain; when it is too cold or too hot; of when it is dark with the sun and moon being covered, otherwise the born baby will be foolish and deaf with no complete limbs. Besides, all those who want a child should choose a good day to mate and should avoid Bing (the third of the ten Heavenly Stems), Ding (the fourth of the Heavenly Stems) and the fifteenth day, the last day, and the first day of the lunar month. They should also avoid strong big winds, heavy rain and dense fog; hot and cold weather; thunder and lightning; gloominess of the sky and the earth; lightlessness of the sun and moon; rainbows and secondary rainbows and earthquakes; and the thinness and eclipse of the sun and the moon, etc. The same is mentioned in *Yi Xin Fang* (《医心方》) as follows: "man corresponds to earth and heaven. Yin and Yang should not be combined when there is thinness and an eclipse of the sun and the moon; strong winds and heavy rain, rainbows and secondary rainbows and earthquakes, thunder and lightning, serious coldness and dense fog and changes of the four seasons. Be prudent of this." (*Yi Xin Fang*, Volume 28, Section About the Inside of Room).

It also says in *Yi Xin Fang* that "according to the Birth Scripture, the Yellow Emperor says, the beginning of a man's life lies in the combination of Yin and Yang. When Yin and Yang are combined, nine disasters must be avoided. They are: first, a child formed at noon, if born, will be defective; second, a child formed at midnight will be deaf and blind because the sky and earth are closed

up and quiet; third, a child formed during an eclipse of the sun will have sorrows and sufferings; fourth, a child formed under thunder and lightning is likely to be irascible, because at this time the sky is angry and wants to show its power and prestige; fifth, a child formed during the eclipse of the moon will be ominous together with his mother; sixth, a child formed under a rainbow or second rainbow will be inauspicious; seventh, a child formed on the day of the Winter Solstice or the Summer Solstice, if born, will harm his parents; eighth, a child formed on the fifteenth day of the lunar month, if born, will cause misfortune; ninth, a child formed at the time of being drunk or full will be sick, or insane with subcutaneous ulcers, piles and sores."

It also says that "there are five prohibitions that, if violated, the birth of child will be ominous. The first, the menses are not over; the second, the parents have sores; the third, carrying a child without putting off mourning apparel; the fourth, carrying a child when a fever has not been cured, otherwise, the mother herself will die; the fifth, the pregnant woman fears summer and is alarmed repeatedly."

There are seven commandments about the combination of Yin and Yang in *The Secrets in Sexuality* (《玉房秘诀》):

First, do not combine Yin and Yang on the last, the first and the fifteenth day of the lunar month, or the vitality will be damaged, and if the child is born, he will be deficient. So this should be seriously considered.

Second, do not combine Yin and Yang when there is thunder and wind with the excitement of the sky and earth, or the blood will surge, and if the child is born, he will have ulcers.

Third, just after drinking wine or eating a full meal, the food

and drink have not been properly digested. At this time, Yin and Yang cannot be combined, or the belly will be full of white and turbid piss, and if the child is born, he will be demented.

Fourth, just after pissing, the energy is exhausted. At this time, Yin and Yang can not be combined either, or the arteries and veins will be astringent, and if the child is born he will commit sins.

Fifth, do not combine Yin and Yang when you are very tired and your mind is not at ease, or the two sides of your chest and your waist will be seriously painful, and if the child is born, he will be deficient.

Sixth, just after bathing, the skin and the hair is still wet. At this time Yin and Yang should not be combined, or you will feel short of breath, and if the child is born, he will be incomplete.

Seventh, when in a rage and the veins of the penis feel painful, do not combine Yin and Yang. For at this time, there is illness inside the body.

In *Ge Zhi Yu Lun* (《格致余论》) written by Zhu Danxi, it says that "the ancient prenatal education is a big prescription, if the foetus is ill, the cause is often unknown and unclear and the illness is often ignored. The doctor cannot know. The foetus shares the same body as the mother. They get hot and cold, illness and comfort together. The mother's food and drink and daily life should be cautious. This cannot be ignored. The above-mentioned statement shows that in ancient china, excellent birth and breeding was well stressed.

II. Prenatal education

TCM also stresses the excellent birth of a foetus very much, or stresses prenatal health care. In *Dong Xuan Zi* (《洞玄子》) it says that "any woman, after becoming pregnant, should do good things.

Do not see evil colors or hear wicked languages. Control sexual lust. Do not swear; curse; be terrified; be tired; tell lies; be worried; eat raw; greasy and hot food; take vehicles; ride horses; climb up; go deep down; go on a downhill path; walk hurriedly; take drugs; or accept acupuncture and moxibustion. She should rectify her mind and thoughts and often listen to scriptures. If so, the child, whether male or female, will have great wits and will be honest, sincere, faithful and fine. This is called prenatal education." It also stresses that from the early period of the foetus, the education of virtue and morality should be valued. The characteristic of prenatal education in TCM is that importance is attached to the education in Confucian etiquette from the third month of pregnancy. It engraves the inscription from the foetus period for the founding of ethic moralities of the children of the Yellow Emperor. Why is the influence of Confucianism on the Chinese nation so deeply-rooted? This perhaps can be traced back to its influence in the period of pregnancy. For example, it says in *Valuable Prescriptions* written by Sun Simiao, who made important contributions to the development of eugenics, that "in the third month of pregnancy, the foetus changes with its growing and its character has not yet been decided. So from the third month of pregnancy, the pregnant woman should watch jewels and beasts of prey such as rhinoceros and elephants; see sages, gentlemen and great masters of morality; watch the circumstances of martial music, the ringing of bells and beating of drums, sacrificial rites and military affairs; and burn joss sticks, read aloud admonitions ancient and modern, and live in a simple and quiet place. Do not eat without a food's regular cutting; do not sit without a mat's regular placing; play the piano or other musical instruments, regulate the mind and spirit; calm the temper; control the

lust of hobby addiction and be quiet in everything. All children born under such a background will be fine, faithful, filial, humane, and clever without illness, and thus they will live long lives. All these are part of the prenatal education of the king of Wen. This stresses that during the pregnant period, especially in the third month, the character has not yet been decided and prenatal education is most efficient.

The concept of an engraved inscription was created by an anatomist named Lao Lunzi. Actually, this refers to the first impression given by animals, that is, the earliest impression of animals at their birth. Although engraved inscription happens only during a short period of the animals' growth, once the inscription is engraved, it will be difficult to have it effaced. That is to say, prenatal education and the education of infants can influence one's whole life. Its important inspiration is that the earlier the prenatal education starts, the better the effect will be. The great doctor Sun Simiao stressed beginning prenatal education from "the third month of pregnancy".

Great importance is also attached to prenatal education in other countries. It was reported that a mother gave careful prenatal education to her three children in their prenatal period, and as a result, their intelligence quotients (IQ) were all high.

Intelligence can be inherited. It is also a kind of substance and information. Now that a man's constitution, physiological functions and pathological conditions can be inherited, why can't his quality and intelligence?

Man's intelligence and quality can be inherited. Sisters and brothers growing up together receive the same education when they are children. However, with the increase of their ages, their quali-

ties can become completely contrary to each other. Some are the same as the mother, and some are much like the father or the grandfather or the great grandfather. This is the so-called situation of being "like father, like son". This shows that during a man's whole life, contributions to morality are very important. They have a bearing not only on oneself but also on the younger generation.

Confucius and Mencius thought that man was good at the beginning; but Gaocius thought that man was evil at the beginning. Actually man is both good and evil at first.

At present, there is a report that the intelligence quotient (IQ) can be inherited. This further attests to the fact that the movement of the brain's function itself is a kind of substance that can be inherited. Inheritance is also a form of the movement of matter. This puts forward that the earliest time of prenatal education should be changed from "the third month of pregnancy" as advocated by Sun Simiao to the fathers or grandfather's generation, or even earlier. So, to heighten the quality of the whole nation is not only a matter of one or two generations but the responsibility of all generations.

The Ming Wan Quan *Secrets of Women* (《妇人秘科》) paid attention to the regulation of spirit and mood to maintain the foetus. For instance, it said that "After becoming pregnant, one cannot be unprudent of her happiness, anger, grief and joy. Overhappiness can hurt the heart and the Qi disperses; overanger can hurt the liver and the Qi goes up; overdeliberation can hurt the spleen and the Qi smoulders; overworry can hurt the lungs and the Qi congeals; overfear can hurt the kidneys and the Qi goes down. If a mother's Qi is hurt, the child's corresponds to it. It cannot avoid being hurt. If the mother is hurt, the foetus will easily be aborted; if child is hurt, its viscera cannot be concordant with the Qi and it will be filled with

illness. Blindness, deafness, dumbness, dull-wittedness and epilepsy are all caused by irregularity.

Doctors of parturition in Chinese medicine stress the need to protect the foetus, and prevent and avoid parturient wounds. For example, *Ten Ways of Parturition of Yang Zi Jian* (《杨子健十产论》) deals with natural labor, wounded labor, expedited parturition, cold parturition, heat parturition, traverse parturition, inverse parturition, slanting parturition, hindered parturition, sitting parturition, and intestine-twisted parturition, etc.

The above shows that ancient China has made great achievements in eugenics. Especially in seeding and prenatal education there were some distinguished features, which should be used for reference.

(Translated by Wang SuYing)

Chapter Thirty-one

Book of Changes and Ecology

Section 1 Ecology and Ecosystem

Ecology is a brand-new subject with a bright future. It is the study of the relationship between creatures' living conditions and their surroundings.

There are three parts to ecology: autoecology, gynecology and synecology. Autoecology has to do with the relationship between individuals and their surroundings; gynecology copes with the ecological problem of homo-individuals exchanging genetic information, and synecology probes into the ecological system of herd beings.

In ecology, the ecosystem is the core of the study. It is one of the most active leading subjects today. The ecosystem is an organic unity in which living beings and non-living beings struggle and integrate to maintain a solid balance. Living beings are inseparable from their surroundings, which constitute a contradictory and united system, namely the ecosystem, the core of ecology. To sum up, the study of ecology covers both the relationship between living beings and their surroundings and the interrelationship between living beings themselves. It is closely related to medicine and environmental protection.

The ecosystem, so to speak, is the study of the biosphere and its surroundings. The biosphere is the scope of life existence in which live 2,000,000 kinds of animals, 300,000,000 kinds of plants and 37,000 kinds of microorganisms. These living beings exchange energy and substances with their surroundings. Ecology is the study of the law of their so doing.

Generally speaking, ecology and *Book of Changes* relate closely to each other. The theory of *Changes* has an important practical value to the study of ecology.

Section 2 *Book of Changes and Ecological Balance*

The theoretical center of ecosystem is ecological balance, which means that the ecosystem is an inter-related and inter-restricted organic unity. In this unity, the input and output of substance and energy are about equal, and its function and structure keep relatively stable in a certain period of time. Because the ecosystem is capable of controlling feedback, it can self-adjust, namely, ecology remains relatively steady.

Book of Changes is rich in its ecological view, which makes it theoretically instructive even in the 20th century. It embodies so vividly the rule of balance either in Gua Yao Ci or in pictures and symbols that it may well be called a precise balance. For example, the Eight Trigrams and the Hexagrams form an organic whole in which the arrangement of six lines demonstrates wonderful balance. So does the number and distribution of Yin Yao and Yang Yao in 386 lines. The mounting and descending of Yin Yao and Yang Yao

in Hexagrams shows the dynamic balance in Hexagram Exhibited Circularly (figure 9-9). Its six lines form six circles, each perfectly in harmony, each circle resembling a group of the biosphere.

The entire organic Eight Trigrams circle is full of balance and harmony; it is simple out of complex. So to speak, the Hexagrams Exhibited Circularly is the epitome of ecological balance on earth.

The embracing of Yin and Yang in the Grand Terminus shows Yin and Yang are inter-dependent (figure 12-3). The fact that Yin and Yang is divided into two parts not by a straight line but an "s" curve means to show the dynamic balance of Yin and Yang. The Grand Terminus symbolizes the inter-relationship between Yin and Yang in space, the universal law of space movement, thus reflecting the inter-relationship between Yin and Yang in ecology. In particular, the solid structure of spirally rotating balance in the Grand Terminus embodies the principle of dynamic equilibrium in the ecosystem.

As to the He Map and Luo Writing, both of them contain the same theory of balance which is reflected in the form of mathematics (figures 13-1 ~ 13-5). Furthermore, the Grand Terminus reflects circular balance while the He Map and Luo Writing reflect square balance. The numbers standing for the four directions in the He Map and those standing for the four directions and the four corners in the Luo Writing present symmetry and balance. It's amazing that those numbers add up to equal no matter how they are added by rows, lines or crosses. So, the He Map and Luo Writing are ideographs of ancient ecological balance.

The theoretical implication of ancient ecological balance in *Book of Changes* serves as a guidance to today's ecological balance. What deserves attention is that in *Gua Yao Ci* there are a good many bril-

liant expositions on balance. For example, it says in the *Great Treatise on Yi*, "Water and fire contribute together to the one object; thunder and wind do not act contrarily to each other; mountains and collections of water interchange their influences." It means that all natural things are closely bound up to one unity even though they are opposite in nature. For another example, it says in *Tuan in Qian Trigram of Yi*, "If great harmony is preserved in union, the result is what is advantageous, and correct and firm." Many trigrams in *Book of Changes* embody the same principle such as Tai and Pi, Ji Ji, Li and Kan. All of these trigrams elucidate that "heaven and earth are in communication with each other, all things in consequence have free course", as is said in the trigram of Tai.

In *Book of Changes*, the great law of "change" and "stability" is just the unity of motion and balance, which instructs greatly natural balance.

Absorbing the theory of balance in *Book of Changes*, TCM attaches much importance to natural self-balance and self-adjustment. For instance, in the *Emperor's Canon of Medicine, Seven Pieces of Yun Qi* (运气七篇) thinks highly of the relationship of climate, phenology and syndrome. In the way of climate, it is adjusted through inter-promoting and inter-acting between *suiyun* (岁运), *sitian* (which controls the first half year 司天), and *zaiquan* (which controls the second half year 在泉). They are called the age of three kinds of Qi: overacting-counteracting-steady acting. The climate keeps self-balance through the relationship of overacting, re-vengeing, smouldering and erupting. That is (the six kinds of Qi: wind, cold, heat, wetness, dampness, fire) excess is harmful and the connecting Qi is needed to restrain it.

TCM values much the ecological relationship among things.

For example, it says in *Wu Yun Xing Da Lun* in *Plain Questions*, "The east promotes wind, wind promotes wood, wood promotes sour, sour promotes liver, liver promotes tendon, tendon promotes heart ... , the south promotes heat, heat promotes fire, fire promotes bitter, bitter promotes heart, heart promotes blood, blood promotes spleen ... , center promotes dampness, dampness promotes earth, earth promotes sweet, sweet promotes spleen, spleen promotes muscle, muscle promotes lungs ... , the west promotes dryness, dryness promotes metal, metal promotes pungent, pungent promotes lungs, lungs promotes skin and hair, skin and hair promotes kidneys ... , the north promotes cold, cold promotes water, water promotes salty, salty promotes kidneys, kidneys promotes marrow, marrow promotes liver" All these best reflect an inseparable chain of relations. What is mentioned above states clearly that the ancient thinking model in *Book of Changes* and the *Emperor's Canon of Medicine* implies rich ideas of the ecological chain and balance. It can yet be regarded as a theoretical model for ecology of today.

Section 3 The Enlightenment of *Book of Changes* to Ecological Balance

I. Ecological Crisis on Earth

The ecosystem possesses the quality of controlling feedback. It can self-adjust to keep balance unless ecological balance is destroyed to such an extent that it is beyond the limit of self-adjustment. And the losing of function of self-adjustment can result in the losing of ecological balance. If the condition becomes worse and worse, it will

consequently lead to an ecological crisis which is a hidden danger to life on the earth.

An ecological crisis includes the losing of balance of such ecological elements as light, temperature, nutrition, salt, fire, water and oxygen. More concretely, the problems are: growth of population, the waste of energy, lack of resources, changes in the food chain, environmental pollution, excessive logging, the extinction of animals, loss of land and soil, the destruction of grass growing, the desertion of natural pasture, the rapid increase in city population.

Malthus' population crisis points out that population increases at a rate of 2, 4, 16, ... while agriculture can only increase at the rate of 1, 2, 3, ... According to this rate, agriculture can never catch up with the population increase, whereupon Malthus thought of the contradiction between the two rates as the source of the ecological crisis. Although something in his view needs criticizing, its merit lies in the warning to mankind. Indeed, to control the limitless increase of population is a decisive measure taken to balance ecology.

To ecological balance, human beings are the main destroyer and the power to restore it. People are realizing more and more the significance of protecting the environment and restoring the ecological balance.

Not only should ecological balance apply modern science but it should also absorb ancient theories, such as the theory contained in *Book of Changes*, which throws much light on preserving and restoring ecological balance.

II. the Enlightenment of Theory in *Book of Changes* to Ecological Balance

In *Book of Changes*, the theory of balance in *Gua Yao Ci* or

Hexagrams Exhibited Circularly or the Grand Terminus or the He Map and Luo Writing, is truly the balance of Yin and Yang. The rule—the relationship between Yin and Yang includes waxing and waning, the inter-restraining and inter-depending of Yin and Yang. It is the interdependent relationship that ecology needs to perform its input and output of substance and energy. And the theory of balance between Yin and Yang embodies in the entire ecological balance. In an ecosphere, heliophobic plants and heliophilous plants, female and male animals, men and women, all of them keep a certain dynamic balance in which the natural balance of Yin and Yang can not be destroyed. For example, it is incorrect to check the sex of a foetus in some places, the bad result from the man-made interference in the balance of ecology will produce bad effects.

Therefore the ecological crisis roots in the destruction of the natural balance of Yin and Yang. Just see a breath-taking number: the land is converted into desert at the speed of ten acres per minute, and this results from the wanton felling of trees which badly destroys the balance between Yin and Yang. What's more, the vegetation is constantly going worse, which results in 20% of drinking water gradually drying. Additionally, owing to the high temperature on earth, forest fires rise one after another, putting the climate into a vicious cycle. The result is that the climate polarizes—in one place, it is like spring in winter, while in another, it snows in hot June; in one place, there is a sand storm because of drought, while in another, the land is destroyed because of storms—the earth loses its years of favorable climatic conditions. Besides, the experiment with atomic weapons has made a hole in the ozone layer in the South Pole, and many rivers have been filled with poisonous waste water, even the whole earth is becoming full of wastes and rubbish. Faced

with hidden dangers, the earth is laboring around... If no measures are taken to protect the ecology and to restore the balance between Yin and Yang, indifferent men will at last destroy themselves.

To sum up, ecosystem should obey the rule of balance to keep relatively stable, especially the dynamic balance between Yin and Yang in an ecosphere.

III. the Enlightenment of the Theory of Three Powers to Ecological Balance

Book of Changes values much the theory of Three Powers which means universe—creature—society, its narrow sense is world—society—men. The theory connotes that everything in the universe is inter-related and inter-restrained, the universe is an organic whole. As it says in *Treatise of Remarks on the Trigrams of Yi*, "the way of heaven, calling Yin and Yang; the way of earth, calling the soft and the hard; and the way of men, under the names of benevolence and righteousness". This kind of relationship can be best illustrated by what a foreign ecologist said, "if you throw a baby out of its cradle, the whole universe will be shaken." Thus it is the inter-relationship of all things in nature that lays a foundation of ecological balance.

Book of Changes is a masterpiece of sociology, its mode of universe—creature—society emphasizes the leading position of "society". This is of great significance to ecological balance. Since man is a main factor in both destroying and restoring the balance of ecology, it's true that man plays a decisive role in it. But the crucial part of ecological balance lies in protecting the environment and controlling the aimless increase of population. The latter is the most important before man has the ability to live on other planets, at least the control of population can temporarily solve the problem of the input

and output of substance and energy.

IV. *Book of Changes* provides a basic Structural Mode for Ecological Balance

Either the Hexagram, Grand Terminus or the He Map, or Luo Writing, is a precise structural mode for ecological balance. In Hexagram Exhibited Circularly, the Yin and Yang balance in each of six circles composes a great balance of six circles. That its YinYangYao is delicately symmetrical can be rated as an epitome of the Yin Yang balance in the universe. On the whole, the Hexagram's structure stresses the connection and organity of things, which provides a blueprint for natural ecological balance.

The Eight Trigrams serves as a guidance especially to the space location in ecological balance. The Eight Trigrams symbolizes four directions and four corners, each trigram represents a certain natural law (including water and fire, Yin and Yang, cold and heat, dry and damp, climate, wind direction, sunlight, temperature ...). Take, for example, the Later Arrangement of the Eight Trigrams, each trigram implies both elements of Yin Yang and of the Five Elements. To state it clearly, the north Kan (The perilous Pit) is cold, water; the south Li (The clinging, [Brightness]) is heat, fire; the east Zhen (Thunder, Exciting Power) is wind, wood; the west Dui (Joy Pleasure) is dryness, metal; the other four trigrams all symbolize waxing and waning conversion of Yin and Yang, and cold and heat. So according to *Book of Changes* "Notes of the same key respond to one another; creatures of the same nature seek one another", creatures corresponding to Yin and Yang, cold and heat should be developed. And the theory of Five Elements in the Eight Trigrams lays a foundation of ecological relationship in ecological balance.

In the Grand Terminus, the spirally rotating movement of the embracing Yin and Yang provides a dimensional structural mode for balance in nature. The connection of LaoYang and ShaoYin, LaoYin and ShaoYang means that extreme Yin ends up with Yang and the reverse is true. The theory mentioned above should be absorbed in the structure of ecological balance. If the growing of heliophobic plants and hiliophilous plants can be matched in the curve of the Grand Terminus and Yin and Yang, more effect will be achieved.

The earth is a grand terminus, and countless small ones lie on it. Every ecosystem, whose embracing of mountains and waters, Yin and Yang, mostly resembles the embracing of Yin and Yang in the Grand Terminus. The meandering rivers and streams, like 's' curves, cut the great ecological terminus into smaller ones.

The ecosphere maintains natural balance through the embracing of mountains and waters, harmony of Yin and Yang. In an ecosphere, there are extreme Yin Yang and balanced Yin Yang. In the places of polarized Yin Qi and Yang Qi (such as hard dry land and soft wet land), Yin Qi and Yang Qi are extreme on either side, and different plants spread corresponding to different areas. For instance, in Yin Qi focused area, there is much heat and energy, thus plants needing much of this grow; in Yin Qi centered place, there is less heat and energy, thus plants needing less of this grow; while in the region where Yin and Yang keep balance, the substances are exposed to equal heat and cold, so the Yin and Yang of plants and animals preserve harmony. In general, the natural balance in the ecosphere presents the balance of Yin and Yang in the Grand Terminus. To build and keep ecological balance, it's essential to act in accordance with the rule of Yin and Yang balance in the Grand Terminus.

nus.

In one word, whether to improve the environment or to grow plants or to breed animals, "Notes of the same key respond to one another; creatures of the same nature seek one another" in *Book of Changes* is the basic rule.

The He Map and Luo Writing as well throw much light on ecological structure in which they provide the coherence of square in comparison to the connection of circle supplied by the Grand Terminus. The relationship between time and space is clearly illustrated particularly in the He Map and Luo Writing, especially the five figures in Luo Writing "three, five, nine, seven and one" that stands for the relation of "wind, heat, dryness, cold, dampness" and "east, south, west, north, middle" and "spring, summer, autumn, winter, late summer". This relationship symbolizes the transference of place and change of time so that the connection between things are reflected from the angle of time and space.

What's more, the He Map and Luo Writing implies a profound meaning of the interacting relation of the Five Elements in ecological balance. Apart from the rule of Yin and Yang, cold and cool, the balance of ecology contains the interrelation of dryness, dampness, hardness and softness as well. For example, in the He Map and Luo Writing, the distribution of cold and heat, warmth and coolness, dryness and dampness, hardness and softness is north—cold—Yin Polar (water), east—warmness (wood, softness), west—coolness—dryness (metal, hardness), middle—dampness (earth), south—heat—Yang Polar (fire). What deserves the most attention is that metal acts on wood as the acting of hardness on softness, water acts on fire as cold against heat, the linkage between them is earth—dampness, which plays the role of moderating and harmoniz-

ing. Therefore, to maintain ecological balance, it is more effective to act in accordance with the rule of Five Elements, the law of ecology, to make use of the promoting, and avoid the interacting.

To summarize, *Book of Changes* provides great enlightenment for ecological balance. Introducing the theories in *Book of Changes* to ecology will be of far-reaching strategic significance to exerting ecological effect and sustaining ecological balance.

Section 4 Book of Changes and Symbiosis

Symbiosis is an important part in the balance of ecology. There not only exist in nature the serious natural selection and species competition put forward by Darwin, but also the phenomenon of symbiosis.

This word, first brought forward in 1879 by Andon Daibali (安东戴巴里), a German botanist, is the Greek equality for "symbios" which means several kinds of animals and plants live together on the condition of reciprocity. It is the development of "commensalism" on which the meaning is that two or more than two kinds of creatures live in peace without disturbing each other. Symbiosis does not contradict Darwin's free selection, moreover. It is more adaptable than "amensalism" to struggle through bad surroundings. For this reason, "symbiosis" is a positive free selection. It plays a propelling role in biological evolution.

In the sea, forests and on the prairie, everywhere are the old symbiotic communities. Generation after generation they have formed a symbiotic force out of which much new, favorable symbi-

otic communities are constantly breaking and founding. This united selection is more likely to beat the competitors than is separate selection.

The symbiosis in nature is a natural phenomenon developed among creatures in the course of evolution. The following examples serve as the best illustration.

Plants and plants: mycorrhiza and mycorrhizal fungi form a protective hyphal web to prevent pathogenic bacteria from invading, to secrete antibiotics to protect the roots of plants, so that the beneficial microbes in the soil are attracted to interchange nutrition. Mycorrhiza and the roots of plants live peacefully together and take advantage of each other; legume bacteria and the roots of beans live in commensalism. Both of what are mentioned above are the most common phenomena in symbiosis.

Animals and plants: plants absorb carbon dioxide and release oxygen in the course of photosynthesis; animals absorb oxygen and release carbon dioxide while breathing. Their exchange of gases composes the circle of substance on earth. The reproduction—pollination of plants depend on such insects to transfer as bees, flies and beetles. They take advantage of each other; so do the plants and microbes in soil in that innumerable microbes protect and catalyze the plants, thus providing substances needed for the plants' growing.

The sea algae and corals live together; the lichen, which grow in cold area or dry deserts or on steep cliffs, create conditions for later plants.

Animals and animals: flesh-eating animals (carnivores) and plant-eating animals (herbivores) still are inter-dependent though they are obviously opposed like water and fire. For example, sheep run the risk of being eaten by wolves but it is the threat by the mi-

nority of wolves that sheep need to evolve rapidly.

Microbes and human beings: there are 250 kinds of microbes in human stomach, amounting to 30~40 billion bacteria in 1kg of human excrement. While coexisting with human beings from generation to generation, they compose into vitamins, amino acids and ferment (enzymes) which are needed by man and help man restrain other harmless bacteria groups to prevent illness. The reason why plant-eating animals eat grass but produce milk is that a good many of coexisting bacteria in the stomach are working. Without the help of microbes, man would be buried by the large amounts of rubbish thrown away everyday, so the huge number of microbes propel forward the cycling of substances.

The symbiosis of creatures testifies that nature is harmonious and friendly in character. Selection and competition are forced to happen for the main purpose of conquering disasters.

Book of Changes implies the idea of symbiosis and points out the connection and harmony in nature. It says in the *Great Treatise on Yi*, "heaven and earth received their determinate positions; mountains and collections of water interchanged their influences; thunder and wind excited each other the more; and water and fire did each other no harm", which symbolizes that Qian suggests the idea of heaven and Kun suggests the idea of earth; Gen suggests the emblem of a mountain and Dui suggests the emblem of a low-lying collection of water; Zhen suggests the idea of thunder and Xun suggests the idea of wind; Kan suggests the idea of water and Li suggests the idea of fire. The harmonious relation of the Eight Trigrams reflects that the whole nature is in great harmony which is also reflected in the embracing of the Grand Terminus and the He Map and Luo Writing.

Symbiosis belongs to the scope of biology, it can also be summed up into bionics, ecology and symbiotic bionics. It creates conditions for man to apply the theory of symbiosis.

Symbiosis points to the theory of complementation among creatures. It enlightens that the evolution of things should make full use of the complementation and advantages of other species as well as depending on self-adjustment in the same species. This is an important foundation for ecological balance and the main content of bionics as well.

The ecosphere of complementation and advantages composed by plants and animals not only maintains the balance of ecology but also promotes the evolution of creatures. The phenomena of symbiosis are kept in the course of evolution by means of genetic information and passed from generation to generation.

With the evolution of ten million years, the "attraction" and "rejection" between species have been transformed into fixed relationship through genetic inheritance, but this relationship still can change and transform with the change of the environment.

Symbiosis and bionic are two important parts in bionics. Many principles in symbiotics are very instructive. For instance, the question of why the host does not immunologically reject the symbiont shows that the symbiont does certain beneficial things for its host and that creatures select to immunize against different species.

Natural selection, which is fully developing the relationship of rejection between creatures, propels evolution through cruel competition for living conditions, while symbiosis brings into play the relationship of attraction to form a life-and-death unity, helping the biocommunity survive bad surroundings. Therefore, it's of great value to discover the secrets in symbiosis, to develop the inter-restraining,

inter-acting theory among symbionts and apply it to animal breeding, plant growing, etc. Accordingly, it's possible to control tumors or other diseases by using the inter-restraining relationship, or to stimulate(motivate) the growth of the host by drawing some inter-promoting substance from its symbiont. Revealing the secrets of the changes among biocommunity, man can apply it to the balance and harmony of his organs. Moreover, the discovery of the functions of animal symbiosis will greatly enlighten the development of immunology.

On the whole, the discovery of symbiotic mystery has a considerably practical meaning to bionic medicine, bionic industry and bionic agriculture. The comprehensive effect manifested by symbiosis displays the strong life force and high evolution rate of the creatures of this kind. And this indicates that the significance of symbiosis is worth developing artificially to benefit the mankind. (Reference: *On Symbiosis* by Chen Xiaoyi, Shi Qingli. Beijing Meteorology Publishing House. Edition 1985)

Social Enlightenment of Symbiosis:

Symbiosis of creatures indicates that nature is a harmonious system whose affinity is demonstrated in various natural phenomena. Creatures will not destroy each other to a large degree even though they have limited living conditions. Mass destruction results from calamities (disasters). Symbiosis confirms that creatures are harmonious and friendly in nature. Harsh environment leads to free selection and competition, in which the strong survive, the weak are eliminated. But this does not happen voluntarily in nature.

Symbiosis points out that in the evolution of creatures and the maintenance of species, symbiosis is more advantageous than living alone. There is a natural law as to the balance of creatures; mas-

sacres among creatures are not needed to preserve balance. It is most often the advanced creatures that destroy the ecological balance, especially that done by human beings.

What a marvelous harmony nature possesses! No matter whether between plants, between animals or between plants and animals, the mutual benefit and complementation is the masterpiece of nature.

In particular, lower animals and plants serve as victims for higher ones. Without thousands of victims, without the spirit of silent devotion, higher plants and animals would not have been maintained up to now.

Additionally, symbionts are not beneficial to all individuals. Some symbionts keep developing the entire species by destroying themselves. The symbiont of banyan trees are affected, but the expansion of banyan trees creates conditions for the opening up of a forest. The weak can depend on each other for survival, protect each other in order to live through hardship. How about human beings? Human beings, the most advanced animals, should live in harmony. Competition is inevitable, but not necessarily among enemies, even to the point of killing each other. Friendliness, harmony, help and love are common characters of a creature, with no exception of man. This is the enlightenment that the symbiosis of creatures gives to human society.

(Translated by Zhang Qin)

Extracts From the Original *Book of Changes* and Analysis

Part I

1. Qian (The Creative) 乾

☰ Qian (represents) what is great and originating, penetrating, advantageous, correct and firm.

In the first (or lowest) line, undivided, (we see its subject as) the dragon lying hid (in the deep). It is not the time for active doing.

In the second line, undivided, (we see its subject as) the dragon appearing in the field. It will be advantageous to meet with the great man.

In the third line, undivided, (we see its subject as) the superior man active and vigilant all the day, and in the evening still careful and apprehensive. (The position is) dangerous, but there will be no mistake.

In the fourth line, undivided, (we see its subject as) the dragon

looking) as if he were leaping up, but still in the deep. There will be no mistake.

In the fifth line, undivided, (we see its subject as) the dragon on the wing in the sky. It will be advantageous to meet with the great man.

In the sixth (or topmost) line, undivided, (we see its subject as) the dragon exceeding the proper limits. There will be occasion for repentance.

2. Kun (Receptive, Resting in Firmness) 坤

☷ Kun (represents) what is great and originating, penetrating, advantageous, correct and having the firmness of a mare. When the superior man (here intended) has to make any movement, if he takes the initiative, he will go astray; if he follows, he will find his (proper) lord, that will be advantageous. He will be getting friends in the southwest, and losing friends in the northeast. If he rests in correctness and firmness, there will be good fortune.

In the first line, divided, (we see its subject) treading on hoarfrost. The strong ice will come (by and by).

The second line, divided, (shows the attribute of) being straight, square, and great. (Its operation), without repeated efforts, will be in every respect advantageous.

The third line, divided, (shows its subject) keeping his excellence under restraint, but firmly maintaining it. If he should have occasion to engage in the King's service, though he will not claim the success (for himself), he will bring affairs to a good issue.

The fourth line, divided, (shows the symbol of) a sack tied

up. There will be no ground for blame or for praise.

The fifth line, divided, (shows) the yellow lower garment. There will be great good fortune.

The sixth line, divided, (shows) dragons fighting in the wild. Their blood is purple and yellow.

3. Tun (Initial Difficulty) 屯

☳ Tun (indicates that in the case which it presupposes) there will be great progress and success, and the advantage will come from being correct and firm. (But) any movement in advance should not be (lightly) undertaken. There will be advantage in appointing feudal princes.

The first line, undivided, shows the difficulty (its subject has) in advancing. It will be advantageous for him to abide correct and firm; advantageous (also) to be made a feudal ruler.

The second line, divided, shows (its subject) distressed and obliged to return; (even) the horses of his chariot (also) seem to be retreating. (But) not by a spoiler (is she assailed), but by one who seeks her to be his wife. The young lady maintains her firm correctness, and declines a union. After ten years she will be united, and have children.

The third line, divided, shows one following the deer without (the guidance of) the forester, and only thinking himself in the midst of the forest. The superior man, acquainted with the secret risks, thinks it better to give up the chase. If he went forward, he would regret it.

The fourth line, divided, shows (its subject as a lady), the horses of whose chariot appear in retreat. She seeks, however, (the

help of) him who seeks her to be his wife. Advance will be fortunate; all will turn out advantageously.

The fifth line, undivided, shows the difficulties in the way of (its subject's) dispensing the rich favours that might be expected from him. With firmness and correctness there will be good fortune in small things; (even) with them in great things there will be evil.

The topmost line, divided, shows (its subject) with the horses of his chariot obliged to retreat, and weeping tears of blood in streams.

4. Meng (Youthful Inexperience, Obscurity) 蒙

☶ Meng (indicates that in the case which it presupposes) there will be progress and success. I do not (go and) seek the youthful and inexperienced, but he comes and seeks me. When he shows (the sincerity that marks) the first recourse to divination, I instruct him. If he apply a second and third time, that is troublesome; and I do not instruct the troublesome. There will be advantage in being firm and correct.

The first line, divided, (has respect to) the dispelling of ignorance. It will be advantageous to use punishment (for that purpose), and to remove the shackles (from the mind). But going on in that way (of punishment) will give occasion for regret.

The second line, undivided, (shows its subject) exercising forbearance with the ignorant, in which there will be good fortune; and admitting (even) the goodness of women, which will also be fortunate. (He may be described also as) a son able to (sustain the burden of) his family.

The third line, divided, (seems to say) that one should not marry a woman whose emblem it might be, for that, when she sees a man of wealth, she will not keep her person from him, and in no wise will advantage come from her.

The fourth line, divided, (shows its subject as if) bound in chains of ignorance. There will be occasion for regret.

The fifth line, divided, shows its subject as a simple lad without experience. There will be good fortune.

In the topmost line, undivided, we see one smiting the ignorant (youth). But no advantage will come from doing him an injury. Advantage would come from warding off injury from him.

5. Xu (Waiting) 需

☵ Xu intimates that, with the sincerity which is declared in it, there will be brilliant success. With firmness there will be good fortune; and it will be advantageous to cross the great stream.

The first line, undivided, shows its subject waiting in the distant border. It will be well for him constantly to maintain (the purpose thus shown), in which case there will be no error.

The second line, undivided, shows its subject waiting on the sand (of the mountain stream). He will (suffer) the small (injury of) being spoken (against), but in the end there will be good fortune.

The third line, undivided, shows its subject in the mud (close by the stream). He thereby invites the approach of the enemy.

The fourth line, divided, shows its subject waiting in (the place of) blood. But he will get out of the cavern.

The fifth line, undivided, shows its subject waiting amidst the

appliances of a feast. Through his firmness and correctness there will be good fortune.

The topmost line, divided, shows its subject entered into the cavern. (But) there are three guests coming, without being urged, (to his help). If he receives them respectfully, there will be good fortune in the end.

6. Song (Conflict) 訟

䷅ Song intimates how, though there is sincerity in one's contention, he will yet meet with opposition and obstruction; but if he cherish an apprehensive caution, there will be good fortune, while, if he must prosecute the contention to the (bitter) end, there will be evil. It will be advantageous to see the great man; it will not be advantageous to cross the great stream.

The first line, divided, shows its subject not perpetuating the matter about which (the contention is). He will suffer the small (injury) of being spoken against, but the end will be fortunate.

The second line, undivided, shows its subject unequal to the contention. If he retire and keep concealed (where) the inhabitants of his city are (only) three hundred families, he will fall into no mistake.

The third line, divided, shows its subject keeping in the old place assigned for his support, and firmly correct. Perilous as the position is, there will be good fortune in the end. Should he perchance engage in the king's business, he will not (claim the merit of) achievement.

The fourth line, undivided, shows its subject unequal to the contention. He returns to (the study of Heaven's) ordinances,

changes (his wish to contend), and rests in being firm and correct. There will be good fortune.

The fifth line, undivided, shows its subject contending; and with great good fortune.

The topmost line, undivided, shows how its subject may have the leather belt conferred on him (by the sovereign), and thrice it shall be taken from him in a morning.

7. Shi (The Army, Group Action) 師

䷆ Shi indicates how, in the case which it supposes, with firmness and correctness, and (a leader of) age and experience, there will be good fortune and no error.

The first line, divided, shows the host going forth according to the rules (for such a movement). If these be not good, there will be evil.

The second line, undivided, shows (the leader) in the midst of the host. There will be good fortune and no error. The king has thrice conveyed to him the orders (of his favour).

The third line, divided, shows perchance the army carries corpses in the wagon, misfortune.

The fourth line, divided, shows the host in retreat. There is no error.

The fifth line, divided, shows birds in the fields, which it will be advantageous to seize (and destroy). In that case there will be no error. If the oldest son leads the host, and younger men (idly occupy offices assigned to them), however firm and correct he may be, there will be evil.

The topmost line, divided, shows the great ruler delivering his

charges, (appointing some) to be rulers of states, and others to undertake the headship of clans; but small men should not be employed (in such positions).

8. Bi (Union) 比

䷇ Bi indicates that (under the conditions which it supposes) there is good fortune. But let (the principal party intended in it) re-examine himself, (as if) by divination, whether his virtue be great, unintermitting, and firm. If it be so, there will be no error. Those who have not rest will then come to him; and with those who are (too) late in coming it will be ill.

The first line, divided, shows its subject seeking by his sincerity to win the attachment of his object. There will be no error. Let (the breast) be full of sincerity as an earthenware vessel is of its contents, and it will in the end bring other advantages.

In the second line, divided, we see the movement towards union and attachment proceeding from the inward (mind). With firm correctness there will be good fortune.

In the third line, divided, we see its subject seeking for union with such as ought not to be associated with.

In the fourth line, divided, we see its subject seeking for union with the one beyond himself. With firm correctness there will be good fortune.

The fifth line, undivided, affords the most illustrious instance of seeking union and attachment. (We seem to see in it) the king urging his pursuit of the game (only) in three directions, and allowing the escape of all the animals before him, while the people of his towns do not warn one another (to prevent it). There will be good

fortune.

In the topmost line, divided, we see one seeking union and attachment without having taken the first step (to such an end). There will be evil.

9. Xiao Xu (The Taming Force, Small Restraint) 小畜

䷈ Xiao Xu indicates that (under its conditions) there will be progress and success. (We see) dense clouds, but no rain coming from our borders in the west.

The first line, undivided, shows its subject returning and pursuing his own course. What mistake should he fall into? There will be good fortune.

The second line, undivided, shows its subject, by the attraction (of the subject of the former line), returning (to the proper course). There will be good fortune.

The third line, undivided, suggests the idea of a carriage, the strap beneath which has been removed, or of a husband and wife looking on each other with averted eyes.

The fourth line, divided, shows its subject possessed of sincerity. The danger of bloodshed is thereby averted, and his (ground for) apprehension dismissed. There will be no mistake.

The fifth line, undivided, shows its subject possessed of sincerity, and drawing others to unite with him. Rich in resources, he employs his neighbors (in the same cause with himself).

The topmost line, undivided, shows how the rain has fallen, and the (onward progress) is stayed;— (so) must we value the full accumulation of the virtue (represented by the upper trigram). But

a wife (exercising restraint), however firm and correct she may be, is in a position of peril, (and like) the moon approaching to the full. If the superior man prosecute his measures (in such circumstances), there will be evil.

10. Lü (Treading Carefully) 履

☳ (Lü suggests the idea of) one treading on the tail of a tiger, which does not bite him. There will be progress and success.

The first line, undivided, shows its subject treading his accustomed path. If he goes forward, there will be no error.

The second line, undivided, shows its subject treading the path that is level and easy; —a quiet and solitary man, to whom, if he be firm and correct, there will be good fortune.

The third line, divided, shows a one-eyed man (who thinks he) can see; a lame man (who thinks he) can walk well; one who treads on the tail of a tiger and is bitten. (All this indicates) ill fortune. We have a (mere) bravo acting the part of a great ruler.

The fourth line, undivided, shows its subject treading on the tail of a tiger. He becomes full of apprehensive caution, and in the end there will be good fortune.

The fifth line, undivided, shows the resolute tread of its subject. He should be firm and correct with awareness of danger.

The sixth line, undivided, tells us to look at (the whole course) that is trodden, and examine the presage which that gives. If it be complete and without failure, there will be great good fortune.

11. Tai (Peace) 泰

☰ In Tai (we see) the little gone and the great come. (It indicates that) there will be good fortune, with progress and success.

The first line, undivided, suggests the idea of grass pulled up, and bringing with it other stalks with whose roots it is connected. Advance (on the part of its subject) will be fortunate.

The second line, undivided, shows one who can bear with the uncultivated, will cross the river without a boat, does not forget the distant, and has no (selfish) friendships. Thus does he prove himself acting in accordance with the course of the due Mean.

The third line, undivided, shows that, while there is no state of peace that is not liable to be disturbed, and no departure (of evil men) so that they shall not return, yet when one is firm and correct, as he realizes the distresses that may arise, he will commit no error. There is no occasion for sadness at the certainty (of such recurring changes); and in this mood the happiness (of the present) may be (long) enjoyed.

The fourth line, divided, shows its subject fluttering (down); —not relying on his own rich resources, but calling in his neighbours. (They all come) not as having received waning, but in the sincerity (of their hearts).

The fifth line, divided, reminds us of (King) Di-yi's (rule about the) marriage of his younger sister. By such a course there is happiness and there will be great good fortune.

The sixth line, divided, shows us the city wall returned into the moat. It is not the time to use the army. (The subject of the line) may, indeed, announce his orders to the people of his own

city. He should be correct and firm with awareness of regret.

12. Pi (Stagnation) 否

☷ In Pi there is the want of good understanding between the (different classes of) men, and its indication is unfavourable to the firm and correct course of the superior man. We see in it the great gone and the little come.

The first line, divided, suggests the idea of grass pulled up, and bringing with it other stalks with whose roots it is connected. With firm correctness (on the part of its subject), there will be good fortune and progress.

The second line, divided, shows its subject patient and obedient. To the small man (comporting himself so) there will be good fortune. If the great man (comport himself) as the distress and obstruction require, he will have success.

The third line, divided, shows its subject ashamed of the purpose folded (in his breast).

The fourth line, undivided, shows its subject acting in accordance with the ordination (of Heaven), and committing no error. His companions will come and share in his happiness.

In the fifth line, undivided, we see him who brings the distress and obstruction to a close, —the great man and fortunate. (But let him say), 'We may perish! We may perish!' (so shall the state of things become firm, as if) bound to a clump of bushy mulberry trees.

The sixth line, undivided, shows the overthrow (and removal of) the condition of distress and obstruction. Before this there was that condition. Hereafter there will be joy.

13. Tong Ren (Union of Men) 同人

☰ Tong Ren (or "Union of men") appears here (as we find it) in the (remote districts of the) country, indicating progress and success. It will be advantageous to cross the great stream. It will be advantageous to maintain the firm correctness of the superior man.

The first line, undivided, (shows the representative of) the union of men just issuing from his gate. There will be no error.

The second line, divided, (shows the representative of) the union of men in relation with his kindred. There will be occasion for regret.

The third line, undivided, (shows its subject) with his arms hidden in the thick grass, and climbing the top of a high mound. (But) for three years he makes no demonstration.

The fourth line, undivided, (shows its subject) mounted on the city wall; but he does not proceed to make the attack (he contemplates). There will be good fortune.

In the fifth line, undivided, (the representative of) the union of men first wails and cries out, and then laughs. His great host conquers, and he (and the subject of the second line) meet together.

The topmost line, undivided, (shows the representative of) the union of men in the suburbs. There will be no occasion for repentance.

14. Da You (Great Possession, Abundance) 大有

☰ Da You indicates that, (under the circumstances which it

implies), there will be great progress and success.

In the first line, undivided, there is no approach to what is injurious, and there is no error. Let there be a realization of the difficulty (and danger of the position), and there will be no error (to the end).

In the second line, undivided, we have a large waggon with its load. In whatever direction advance is made, there will be no error.

The third line, undivided, shows us a feudal prince presenting his offerings to the Son of Heaven. A small man would be unequal (to such a duty).

The fourth line, undivided, shows its subject keeping his great resources under restraint. There will be no error.

The fifth line, divided, shows the sincerity of its subject reciprocated by that of all the others (represented in the hexagram). Let him display a proper majesty, and there will be good fortune.

The topmost line, undivided, shows its subject with help accorded to him from Heaven. There will be good fortune, advantage in every respect.

15. Qian (Modesty) 谦

☰ Qian indicates progress and success. The superior man, (being humble as it implies), will have a (good) issue (to his undertakings).

The first line, divided, shows us the superior man who adds humility to humility. (Even) the great stream may be crossed with this, and there will be good fortune.

The second line, divided, shows us humility that has made itself recognized. With firm correctness there will be good fortune.

The third line, undivided, shows the superior man of (acknowledged) merit. He will maintain his success to the end, and have good fortune.

The fourth line, divided, shows one, whose action would be in every way advantageous, stirring up (the more) his humility.

The fifth line, divided, shows one who, without being rich, is able to employ his neighbours. He may advantageously use the force of arms. All his movements will be advantageous.

The sixth line, divided, shows us humility that has made itself recognized. The subject of it will with advantage put his hosts in motion; but (he will only) punish his own towns and state.

16. Yu (Harmony, Joy, Enthusiasm) 豫

☱ Yu indicates that, (in the state which it implies), feudal princes may be set up, and the hosts put in motion, with advantage.

The first line, divided, shows its subject proclaiming his pleasure and satisfaction. There will be evil.

The second line, divided, shows one who is firm as a rock. (He sees a thing) without waiting till it has come to pass; with his firm correctness there will be good fortune.

The third line, divided, shows one looking up (for favours), while he indulges the feeling of pleasure and satisfaction. If he would understand!—If he be late in doing so, there will indeed be occasion for repentance.

The fourth line, undivided, shows him from whom the harmony and satisfaction come. Great is the success which he obtains. Let him not allow suspicions to enter his mind, and thus friends will

gather around him.

The fifth line, divided, shows one with a chronic complaint, but who lives on without dying.

The topmost line, divided, shows its subject with darkened mind devoted to the pleasure and satisfaction (of the time); but if he change his course even when (it may be considered as) completed, there will be no error.

17. Sui (Following) 隨

䷐ Sui indicates that (under its conditions) there will be great progress and success. But it will be advantageous to be firm and correct. There will (then) be no error.

The first line, undivided, shows us one changing the object of his pursuit; but if he be firm and correct, there will be good fortune. Going beyond (his own) gate to find associates, he will achieve merit.

The second line, divided, shows us one who cleaves to the little boy, and lets go the man of age and experience.

The third line, divided, shows us one who cleaves to the man of age and experience, and lets go the little boy. Such following will get what it seeks; but it will be advantageous to adhere to what is firm and correct.

The fourth line, undivided, shows us one followed and obtaining (adherents). He should be firm and correct lest there will be evil. If he be sincere (however) in his course, and make that evident, into what error will he fall?

The fifth line, undivided, shows us (the ruler) sincere in (fostering all) that is excellent. There will be good fortune.

The topmost line, divided, shows us (that sincerity) firmly held and clung to, yea, and bound fast. (We see) the king with it presenting his offerings on the western mountain.

18. Gu (Arresting Decay) 蛊

䷑ Gu indicates great progress and success (to him who deals properly with the condition represented by it). There will be advantage in (efforts like that of) crossing the great stream. (He should weigh well, however, the events of) three days before the turning point, and those (to be done) three days after it.

The first line, divided, shows (a son) dealing with the troubles caused by his father. If he be an (able) son, the father will escape the blame of having erred. The position is perilous, but there will be good fortune in the end.

The second line, undivided, shows (a son) dealing with the troubles caused by his mother. He should not (carry) his firm correctness (to the utmost).

The third line, undivided, shows (a son) dealing with the troubles caused by his father. There may be some small occasion for repentance, but there will not be any great error.

The fourth line, divided, shows (a son) viewing indulgently the troubles caused by his father. If he go forward, he will find cause to regret it.

The fifth line, divided, shows (a son) dealing with the troubles caused by his father. He obtains the praise of using (the fit instrument for his work).

The sixth line, undivided, shows us one who does not serve either king or feudal lord, but in a lofty spirit prefers (to attend to)

his own affairs.

19. Lin (Approach, Symbol of Advance) 临

䷒ Lin (indicates that under the conditions supposed in it) there will be great progress and success, while it will be advantageous to be firmly correct. In the eighth month there will be evil.

The first line, undivided, shows its subject advancing in company (with the subject of the second line). Through his firm correctness there will be good fortune.

The second line, undivided, shows its subject advancing in company (with the subject of the first line). There will be good fortune; (advancing) will be in every way advantageous.

The third line, divided, shows one well pleased (indeed) to advance, (but whose action) will be in no way advantageous. If he become anxious about it (however), there will be no error.

The fourth line, divided, shows one advancing in the highest mode. There will be no error.

The fifth line, divided, shows the advance of wisdom, such as befits the great ruler. There will be good fortune.

The sixth line, divided, shows the advance of honesty and generosity. There will be good fortune, and no error.

20. Guan (Contemplation) 观

䷓ Guan shows (how he whom it represents should be like) the worshipper who has washed his hands, but not (yet) presented his offerings; —with sincerity and an appearance of dignity (command-

ing reverent regard).

The first line, divided, shows the looking of a lad; —not blamable in men of inferior rank, but matter for regret in superior men.

The second line, divided, shows one peeping out from a door. It would be advantageous if it were (merely) the firm correctness of a female.

The third line, divided, shows one looking at (the course of) his own life, to advance or recede (accordingly).

The fourth line, divided, shows one contemplating the glory of the kingdom. It will be advantageous for him, being such as he is, (to seek) to be a guest of the king.

The fifth line, undivided, shows its subject contemplating his own life (course). A superior man, he will (thus) fall into no error.

The sixth line, undivided, shows its subject contemplating his character to see if it be indeed that of a superior man. He will not fall into error.

21. Shi Ke (Biting Through) 噬嗑

䷔ Shi Ke indicates successful progress (in the condition of things which it supposes). It will be advantageous to use legal constraints.

The first line, undivided, shows one with his feet in the stocks and deprived of his toes. There will be no error.

The second line, divided, shows one biting through the soft flesh, and (going on to) bite off the nose. There will be no error.

The third line, divided, shows one gnawing dried flesh, and meeting with what is disagreeable. There will be occasion for some small regret, but no (great) error.

The fourth line, undivided, shows one gnawing the flesh dried on the bone, and getting the metal arrows. It will be advantageous to him to realize the difficulty of his task and be firm, —in which case there will be good fortune.

The fifth line, divided, shows one gnawing at dried flesh, and finding the yellow gold. Let him be firm and correct, realizing the peril (of his position). There will be no error.

The sixth line, undivided, shows one wearing the cangue, and deprived of his ears. There will be no evil.

22. Ben (Adornment) 贲

䷖ Ben indicates that there should be free course (in what it denotes). There will be little advantage (however) if it be allowed to advance (and take the lead).

The first line, undivided, shows one adorning (the way of) his feet. He can discard a carriage and walk on foot.

The second line, divided, shows one adorning his beard.

The third line, undivided, shows its subject with the appearance of being adorned and bedewed (with rich favours). But let him ever maintain his firm correctness, and there will be good fortune.

The fourth line, divided, shows one looking as if adorned, but only in white. As if (mounted on) a white horse, and furnished with wings, (he seeks union with the subject of the first line), while (the intervening third pursues), not as a robber, but intent on a matrimonial alliance.

The fifth line, divided, shows its subject adorned by (the occupants of) the heights and gardens. He bears his roll of silk, small and slight. He may appear stingy; but there will be good fortune in

the end.

The sixth line, undivided, shows one with white as his (only) ornament. There will be no error.

23. Bo (Falling Apart) 剥

䷖ Bo indicates that (in the state which it symbolizes) it will not be advantageous to make a movement in any direction whatever.

The first line, divided, shows one overturning the couch by injuring its legs. (The injury will go on to) the destruction of (all) firm correctness, and there will be evil.

The second line, divided, shows one overthrowing the couch by injuring its frame. (The injury will go on to) the destruction of (all) firm correctness, and there will be evil.

The third line, divided, shows its subject among the overthrowers; but there will be no error.

The fourth line, divided, shows its subject having overthrown the couch, and (going to injure) the skin (of him who lies on it). There will be evil.

The fifth line, divided, shows (its subject leading on the others like) a string of fishes, and (obtaining for them) the favour that lights on the inmates of the palace. There will be advantage in every way.

The topmost line, undivided, shows its subject (as) a great fruit which has not been eaten. The superior man finds (the people again) as a chariot carrying him. The small men (by their course) overthrow their own dwellings.

24. Fu (Returning) 复

☱ Fu indicates that there will be free course and progress (in what it denotes). (The subject of it) finds no one to distress him in his exits and entrances; friends come to him, and no error is committed. He will return and repeat his (proper) course. In seven days comes his return. There will be advantage in whatever direction movement is made.

The first line, undivided, shows its subject returning (from an error) of no great extent, which would not proceed to anything requiring repentance. There will be great good fortune.

The second line, divided, shows the admirable return (of its subject). There will be good fortune.

The third line, divided, shows one who has made repeated returns. The position is perilous, but there will be no error.

The fourth line, divided, shows its subject moving right in the centre (among those represented by the other divided lines), and yet returning alone (to his proper path).

The fifth line, divided, shows the noble return of its subject. There will be no ground for repentance.

The topmost line, divided, shows its subject all astray on the subject of returning. There will be evil. There will be calamities and errors. If with his views he put the hosts in motion, the end will be a great defeat, whose issues will extend to the ruler of the state. Even in ten years he will not be able to repair the disaster.

25. Wu Wang (Correctness, Innocence) 无妄

☱ Wu Wang indicates great progress and success, while there will be advantage in being firm and correct. If (its subject and his action) be not correct, he will fall into errors, and it will not be advantageous for him to move in any direction.

The first line, undivided, shows its subject free from all insincerity. His advance will be accompanied with good fortune.

The second line, divided, shows one who reaps without having ploughed (that he might reap), and gathers the produce of his third year's fields without having cultivated them the first year for that end. To such a one there will be advantage in whatever direction he may move.

The third line, divided, shows calamity happening to one who is free from insincerity; —as in the case of an ox that has been tied up. A passerby finds it (and carries it off), while the people in the neighbourhood have the calamity (of being accused and apprehended).

The fourth line, undivided, shows (a case) in which, if its subject can remain firm and correct, there will be no error.

The fifth line, undivided, shows one who is free from insincerity, and yet has fallen ill. Let him not use medicine, and he will have occasion for joy (in his recovery).

The topmost line, undivided, shows its subject free from insincerity, yet sure to fall into error, if he take action. (His action) will not be advantageous in any way.

26. Da Xu (The Great Taming Force) 大畜

䷙ Under the conditions of Da Xu will be advantageous to be firm and correct. (If its subject do not seek to) enjoy his revenues in his own family (without taking service at court), there will be good fortune. It will be advantageous for him to cross the great stream.

The first line, undivided, shows its subject in a position of peril. It will be advantageous for him to stop his advance.

The second line, undivided, shows a carriage with the strap under it removed.

The third line, undivided, shows its subject urging his way with good horses. It will be advantageous for him to realize the difficulty (of his course), and to be firm and correct, exercising himself daily in his charioteering and methods of defence; then there will be advantage in whatever direction he may advance.

The fourth line, divided, shows the young bull, (and yet) having the piece of wood over his horns. There will be great good fortune.

The fifth line, divided, shows the teeth of a castrated hog. There will be good fortune.

The sixth line, undivided, shows its subject (as) in command of the firmament of heaven. There will be progress.

27. Yi (Nourishment) 颐

䷚ Yi indicates that with firm correctness there will be good fortune (in what is denoted by it). We must look at what we are

seeking to nourish, and by the exercise of our thoughts seek for the proper aliment.

The first line, undivided, (seems to be thus addressed), 'You leave your efficacious tortoise, and look at me till your lower jaw hangs down.' There will be evil.

The second line, divided, shows one looking downwards for nourishment, which is contrary to what is proper; or seeking it from the height (above), advance towards which will lead to evil.

The third line, divided, shows one acting contrary to the method of nourishing. However firm he may be, there will be evil. For ten years let him not take any action, (for) it will not be in any way advantageous.

The fourth line, divided, shows one looking downwards for (the power to) nourish. There will be good fortune. Looking with a tiger's downward unwavering glare, and with his desire that impels him to spring after spring, he will fall into no error.

The fifth line, divided, shows one acting contrary to what is regular and proper; but if he abide in firmness, there will be good fortune. He should not, (however, try to) cross the great stream.

The sixth line, undivided, shows him from whom comes the nourishing. His position is perilous, but there will be good fortune. It will be advantageous to cross the great stream.

28. Da Guo (Excess) 大过

䷛ Da Guo suggests to us a beam that is weak. There will be advantage in moving (under its conditions) in any direction whatever; there will be success.

The first line, divided, shows one placing mats of the white

máo grass under things set on the ground. There will be no error.

The second line, undivided, shows a decayed willow producing shoots, or an old husband in possession of his young wife. There will be advantage in every way.

The third line, undivided, shows a beam that is weak. There will be evil.

The fourth line, undivided, shows a beam curving upwards. There will be good fortune. If (the subject of it) looks for other (help but that of line one), there will be cause for regret.

The fifth line, undivided, shows a decayed willow producing flowers, or an old wife in possession of her young husband. There will be occasion neither for blame nor for praise.

The topmost line, divided, shows its subject with extraordinary (boldness) wading through a stream, till the water hides the crown of his head. There will be evil, but no ground for blame.

29. Kan (The Perilous Pit) 坎

☵ Kan, here repeated, shows the possession of sincerity, through which the mind is penetrating. Action (in accordance with this) will be of high value.

The first line, divided, shows its subject in the double defile, and (yet) entering a cavern within it. There will be evil.

The second line, undivided, shows its subject in all the peril of the defile. He will, however, get a little (of the deliverance) that he seeks.

The third line, divided, shows its subject, whether he comes or goes (descends or ascends), confronted by a defile. All is peril to him and unrest. (His endeavours) will lead him into the cavern of

the pit. There should be no action (in such a case).

The fourth line, divided, shows its subject (at a feast), with (simply) a bottle of spirits, and a subsidiary basket of rice, while (the cups and bowls) are (only) of earthenware. He introduces his important lessons (as his ruler's) intelligence admits. There will in the end be no error.

The fifth line, undivided, shows the water of the defile not yet full, (so that it might flow away); but order will (soon) be brought about. There will be no error.

The topmost line, divided, shows its subject bound with cords of three strands or two strands, and placed in the thicket of thorns. But in three years he does not learn the course for him to pursue. There will be evil.

30. Li (The Clinging [Brightness]) 离

☲ Li indicates that, (in regard to what it denotes), it will be advantageous to be firm and correct, and that thus there will be free course and success. Let (its subject) also nourish (a docility like that of) the cow, and there will be good fortune.

The first line, undivided, shows one ready to move with confused steps. But he treads at the same time reverently, and there will be no mistake.

The second line, divided, shows its subject in his place in yellow. There will be great good fortune.

The third line, undivided, shows its subject in a position like that of the declining sun. Instead of playing on his instrument of earthenware, and singing to it, he utters the groans of an old man of eighty. There will be evil.

The fourth line, undivided, shows the manner of its subject's coming. How abrupt it is, as with fire, with death, to be rejected (by all)!

The fifth line, divided, shows its subject as one with tears flowing in torrents, and groaning in sorrow. There will be good fortune.

The topmost line, undivided, shows the king employing its subject in his punitive expeditions. Achieving admirable (merit), he breaks (only) the chiefs (of the rebels). Where his prisoners were not their associates, he does not punish. There will be no error.

(Translated by James Legge and Dong Shuangchen)

Part II

31 Xian (Influence) 咸

☵ Xian indicates that, on the fulfillment of the conditions implied in it, there will be free course and success. Its advantage will depend on the being firm and correct, as in marrying a young lady. There will be good fortune.

The first line, divided, shows one moving his great toes.

The second line, divided, shows one moving the calves of his leg. There will be evil. If he abide quiet in his place, there will be good fortune.

The third line, undivided, shows one moving his thighs, and keeping close hold of these whom he follows. Going forward in this way will cause regret.

The fourth line, undivided, shows that firm correctness which will lead to good fortune, and prevent all occasion for repentance. If its subject be unsettled in his movements, only his friends will follow his purpose.

The fifth line, undivided, shows one moving the flesh along the spine above the heart. There will be no occasion for repentance.

The sixth line, divided, shows one moving his jaws and tongue.

32 Heng (Perseverance, Duration) 恒

☵ Heng indicates successful progress and no error in what it denotes. But the advantage will come from being firm and correct; and movement in any direction whatever will be advantageous.

The first line, divided, shows its subject deeply desirous of long continuance. Even with firm correctness there will be evil; there will be no advantage any way.

The second line, undivided, shows all occasion for repentance disappearing.

The third line, undivided, shows one who does not continuously maintain his virtue. There are those who will impute this to him as a disgrace. However firm he may be, there will be ground for regret.

The fourth line, undivided, shows a field where there is no game.

The fifth line, divided, shows its subjects continuously maintaining the virtue indicated by it. In a wife this will be fortunate; in a husband, evil.

The topmost line, divided, shows its subject exciting himself to

long continuance. There will be evil.

33 Dun (Retreat) 遁

☱ Dun indicates successful progress in its circumstances. To a small extent it will still be advantageous to be firm and correct.

The first line, divided, shows a retiring tail. The position is perilous. No movement in any direction should be made.

The second line, divided, shows its subject holding his purpose fast as if by a thong made from the hide of a yellow ox, which cannot be broken.

The third line, undivided, shows one retiring but bound, —to his distress and peril. If he were to deal with his binders as in nourishing a servant or concubine, it would be fortunate for him.

The fourth line, undivided, shows its subject retiring notwithstanding his likings. In a superior man this will lead to good fortune; a small man cannot attain to this.

The fifth line, undivided, shows its subject retiring in an admirable way. With firm correctness there will be good fortune.

The sixth line, undivided, shows its subject retiring in a noble way. It will be advantageous in every respect.

34 Da Zhuang (The Power of the Great) 大壮

☱ Da Zhuang indicates that under the conditions which it symbolizes it will be advantageous to be firm and correct.

The first line, undivided, shows its subject manifesting his strength in his toes. But advance will lead to evil, —most certainly.

The second line, undivided, shows that with firm correctness there will be good fortune.

The third line, undivided, shows, in the case of a small man, one using all his strength, and in the case of a superior man, one whose rule is not to do so. Even with firm correctness the position would be perilous. The exercise of strength in it might be compared to the case of a ram butting against a fence, and getting his horns entangled.

The fourth line, undivided, shows a case in which firm correctness leads to good fortune, and occasion for repentance disappears. We see the fence opened without the horns being entangled. The strength is like that in the wheel-spokes of a large wagon.

The fifth line, divided, shows one who loses his ram-like strength in the case of his position. But there will be no occasion for repentance.

The sixth line, divided, shows one who may be compared to the ram butting against the fence, and unable either to retreat, or to advance as he would fain do. There will not be advantage in any respect; but if he realize the difficulty of his position, there will be good fortune.

35 Jin (Progress) 晋

☱ In Jin we see a prince who secures the tranquillity of the people presented on that account with numerous horses by the king, and three times in a day received at interviews.

The first line, divided, shows one wishing to advance, and at the same time kept back. Let him be firm and correct, and there will be good fortune. If trust be not reposed in him, let him main-

tain a large and generous mind, and there will be no error.

The second line, divided, shows its subject with the appearance of advancing, and yet of being sorrowful. If he be firm and correct, there will be good fortune. He will receive this great blessing from his grandmother.

The third line, divided, shows its subject trusted by all around him. All occasion for repentance will disappear.

The fourth line, undivided, shows its subject with the appearance of advancing, but like a marmot. He should be firm and correct lest his position is one of peril.

The fifth line, divided, shows how all occasion for repentance disappears from its subject. But let him not concern himself about whether he shall fail of succeed. To advance will be fortunate, and in every way advantageous.

The topmost line, undivided, shows one advancing his horns. But he only uses them to punish the rebellious people of his own city. The position is perilous, but there will be good fortune. Yet he should be firm and correct lest there should be occasion for regret.

36 Ming Yi (Darkening of the Light, Intelligence Wounded) 明夷

䷣ Ming Yi indicates that in the circumstances which it denotes it will be advantageous to realize difficulty of the position, and maintain firm correctness.

The first line, undivided, shows its subject, in the condition indicated by Ming Yi, flying, but with drooping wings. When the superior man is revolving his going away, he may be for three days without eating. Wherever he goes, the people there may speak deri-

sively of him.

The second line, divided, shows its subject, in the condition indicated by Ming Yi, wounded in the left thigh. He saves himself by the strength of a swift horse; and is fortunate.

The third line, undivided, shows its subject, in the condition indicated by Ming Yi, hunting in the south, and taking the great chief of the darkness. He should not be eager to make all correct at once.

The fourth line, divided, shows its subject just entered into the left side of the belly of the dark land. But he is able to carry out the mind appropriate in the condition indicated by Ming Yi, quitting the gate and courtyard of the lord of darkness.

The fifth line, divided, shows how the count of Ji fulfilled the condition indicated by Ming Yi. It will be advantageous to be firm and correct.

The sixth line, divided, shows the case where there is no light, but only obscurity. Its subject had at least ascended to the top of the sky, his future shall be to go into the earth.

37 Jia Ren (The Family) 家人

䷤ For the realization of what is taught in Jia Ren, or for the regulation of the family. What is most advantageous is that the wife be firm and correct.

The first line, undivided, shows its subject establishing restrictive regulations in his household. Occasion for repentance will disappear.

The second line, divided, shows its subject taking nothing on herself, but in her central place attending to the preparation of the

food. Through her firm correctness there will be good fortune.

The third line, undivided, shows its subject treating the members of the household with stern severity. There will be occasion for repentance, there will be peril, but there will also be good fortune. If the wife and children were to be smirking and chattering, in the end there would be occasion for regret.

The fourth line, divided, shows its subject enriching the family. There will be great good fortune.

The fifth line, undivided, shows the influence of the king extending to his family. There need to be no anxiety; there will be good fortune.

The topmost line, undivided, shows its subject possessed of sincerity and arrayed in majesty. In the end there will be good fortune.

38 Kui (Disunion, Mutual Alienation) 睽

☱ Kui indicates that, notwithstanding the condition of things which it denotes; in small matters there will still be good success.

The first line, undivided, shows that to its subject occasion for repentance will disappear. He has lost his horses, but let him not seek for them; —they will return of themselves. Should he meet with bad men, he will not err in communicating with them.

The second line, undivided, shows its subject happening to meet with his lord in a bye-passage. There will be no error.

In the third line, divided, we see one whose carriage is dragged back, while the oxen in it are pushed back, and he is himself subjected to the shaving of his head and the cutting off of his

nose. There is no good beginning, but there will be a good end.

The fourth line, undivided, shows its subject solitary amidst the prevailing disunion. But he meets with the good man represented by the first line, and they blend their sincere desires together. The position is one of peril, but there will be no mistake.

The fifth line, divided, shows that to its subject occasion for repentance will disappear. With his relative and minister he united closely and readily as if he were biting through a piece of skin. When he goes forward, with this help, what error can there be?

The topmost line, undivided, shows its subject solitary amidst the prevailing disunion. In the subject of the third line, he seems to see a pig bearing on its back a load of mud, or fancies there is a carriage full of ghosts.

39 Jian (Arresting Movement) 蹇

☵ In the state indicated by Jian advantage will be found in the southwest, and the contrary in the northeast. It will be advantageous also to meet with the great man. In these circumstances, with firmness and correctness, there will be good fortune.

From the first line, divided, we learn that advance on the part of its subject will lead to greater difficulties, while remaining stationary will afford ground for praise.

The second line, divided, shows the minister of the king struggling with difficulty, but not with a view to his own advantage.

The third line, undivided, shows its subject advancing, but only to greater difficulty. He remains stationary, and returns to his former associates.

The fourth line, divided, shows its subject advancing, but only

to greater difficulties. He remains stationary, and unites with the subject of the line above.

The fifth line, undivided, shows its subject struggling with the greatest difficulties, while friends are coming to help him.

The topmost line, divided, shows its subject going forward, only to increase the difficulties, while his remaining stationary will be productive of great merit. There will be good fortune, and it will be advantageous to meet with the great man.

40 Jie (Removing Obstacles) 解

☵ In the state indicated by Jie advantage will be found in the southwest. If no further operations be called for, there will be good fortune in coming back to the old conditions. If some operations be called for, there will be good fortune in the early conducting of them.

The first line, divided, shows that its subject will commit no error.

The second line, undivided, shows its subject catch, in hunting, three foxes, and obtain the yellow arrows. With firm correctness there will be good fortune.

The third line, divided, shows a porter with his burden, yet riding in a carriage. He will only tempt robbers to attack him. However firm and correct he may be, there will be cause for regret.

To the subject of the fourth line, undivided, it is said, "Remove your toes. Friends will then come, between you and whom there will be mutual confidence."

The fifth line, divided, shows the subject, the superior man, executing his function removing whatever is injurious to the idea of

the hexagram, in which case there will be good fortune, and confidence in him will be shown even by the small men.

In the sixth line, divided, we see a feudal prince with his bow shooting at a falcon on the top of a high wall, and hitting it. The effect of his action will be in every way advantageous.

41 Sun (Decrease) 损

☱ In what is denoted by Sun, if there is sincerity in him who employs it, there will be great good fortune: —freedom from error; firmness and correctness that can be maintained; and advantage in every movement that shall be made. In what shall this sincerity in the exercise of Sun be employed? Even in sacrifice two baskets of grain, though there be nothing else, may be presented.

The first line, undivided, shows its subject suspending his own affairs, and hurrying away to help the subject of the fourth line. He will commit no error, but let him consider how far he should contribute of what is his for the other.

The second line, undivided, shows that it will be advantageous for its subject to maintain a firm correctness, and that action on his part will be evil. He can give increase to his correlate without taking from himself.

The third line, divided, shows how of three men walking together, the number is diminished by one; and how one, walking, finds his friend.

The fourth line, divided, shows its subject diminishing the ailment under which he labors by making the subject of the first line hasten to his help, and make him glad. These will be no error.

The fifth line, divided, shows parties adding to the stores of its

subject ten pairs of tortoise shells, and accepting no refusal. These will be great good fortune.

The topmost line, undivided, shows its subject giving increase to others without taking from himself. There will be no error. With firm correctness there will be good fortune. There will be advantage in every movement that shall be made. He will find ministers more than can be counted by their clans.

42 Yi (Increase) 益

䷗ Yi indicates that in the state which it denotes there will be advantage in every movement which shall be undertaken, that it will be advantageous even to cross the great stream.

The first line, undivided, shows that it will be advantageous for its subject in his position to make a great movement. If it be greatly fortunate, no blame will be imputed to him.

The second line, divided, shows parties adding to the stores of its subject ten pairs of tortoise shells whose oracles can not be opposed. Let him persevere in being firm and correct, and there will be good fortune. Let the king, having the virtues thus distinguished, employ them in presenting his offerings to God, and there will be good fortune.

The third line, divided, shows increase given to its subject by means of what is evil, so that he shall be led to good, and be without blame. Let him be sincere and pursue the path of the Mean, so shall he secure the recognition of the ruler, like an officer who announces himself to his prince by the symbol of his rank.

The fourth line, divided, shows its subject pursuing the due course. His advice to his prince is followed. He can with advantage

be relied on in such a movement as that of removing the capital.

The fifth line, undivided, shows its subject with sincere heart seeking to benefit all below. There need be no question about it; the result will be great good fortune. All below will with sincere heart acknowledge his goodness.

In the sixth line, undivided, we see one to whose increase none will contribute, while many will seek to assail him. He observes no regular rule in the ordering of his heart. There will be evil.

43 Guai (Removing Corruption, Break-through) 夬

䷪ Guai requires in him who would fulfill its meaning the exhibition of the culprit's guilt in the royal court, and a sincere and earnest appeal for sympathy and support, with a consciousness of the peril involved in cutting off the criminal. He should also make announcement in his own city, and show that it will not be well to have recourse at once to arms. In this way there will be advantage in whatever he shall go forward to.

The first line, undivided, shows its subject in the pride of strength advancing with his toes. He goes forward, but will not succeed. There will be ground for blame.

The second line, undivided, shows its subject full of apprehension and appealing for sympathy and help. Late at night hostile measures may be taken against him, but he need not be anxious about them.

The third line, undivided, shows its subject which is about to advance with strong and determined looks. There will be evil. But the superior man, bent on cutting off the criminal, will walk alone

and encounter the rain, till he be hated by his proper associates as if he were contaminated by the others. In the end, there will be no blame against him.

The fourth line, undivided, shows one from whose buttocks the skin has been stripped, and who walks slowly and with difficulty. If he could act like a sheep led after its companions, occasions for repentance would disappear. But though he hear these words, he will not believe them.

The fifth line, undivided, shows the small men like a bed of purslain, which ought to be uprooted with the utmost determination. The subject of the line having such determination, his action, in harmony with his central position, will lead to no error or blame.

The sixth line, divided, shows its subject without any helpers on whom to call. His end will be evil.

44 Gou (Encountering) 姤

☰ Gou shows a female who is bold and strong. It will not be good to marry such a female.

The first line, divided, shows how its subject should be kept like a carriage tied and fastened to a metal drag, in which case with firm correctness there will be good fortune. But if he move in any direction, evil will appear. He will be like a lean pig, which is sure to keep jumping about.

The second line, undivided, shows its subject with a wallet of fish. There will be no error. But it will not be well to let the subject of the first line go forward to the guests.

The third line, undivided, shows one from whose buttocks the skin has been stripped so that he walks with difficulty. The position

is perilous, but there will be no great error.

The fourth line, undivided, shows its subject with his wallet, but no fish in it. This will give rise to evil.

The fifth line, undivided, shows its subject as a medlar tree over-spreading the ground beneath it. If he keeps his brilliant qualities concealed, a good issue will descend as from Heaven.

The sixth line, undivided, shows its subject receiving others on his horns. There will be occasion for regret, but there will be no error.

45 Cui (Gathering Together) 萃

☵ In the state denoted by Cui, the king will repair to his ancestral temple. It will be advantageous also to meet with the great man; and then there will be progress and success, though the advantage must come through firm correctness. The use of great victims will conduce to good fortune; and in whatever direction movement is made, it will be advantageous.

The first line, divided, shows its subject with a sincere desire for union, but unable to carry it out, so that disorder is brought into the sphere of his union. If he cries out for help to his proper correlate, all at once his tears will give place to smiles. He need not mind the temporary difficulty, as he goes forward, there will be no error.

The second line, divided, shows its subject led forward by his correlate. There will be good fortune, and freedom from error. There is entire sincerity, and in that case even the small offerings of the vernal sacrifice are acceptable.

The third line, divided, shows its subject striving after union and seeming to sigh, yet nowhere finding any advantage. If he goes

forward, he will not err, though there may be some small cause for regret.

The fourth line, undivided, shows its subject in such a state that, if he be greatly fortunate, he will receive no blame.

The fifth line, undivided, shows the union of all under its subject in the place of dignity. There will be no error. If any do not have confidence in him, let him set to it that his virtue be great, long-continued, and firmly correct, and all occasion for repentance will disappear.

The topmost line, divided, shows its subject sighing and weeping; but there will be no error.

46 Sheng (Ascending) 升

☱ Sheng indicates that under its conditions, there will be great progress and success. Seeking by the qualities implied in it to meet the great man, its subject need have no anxiety. Advance to the south will be fortunate.

The first line, divided, shows its subject advancing upwards with the welcome of those above him. There will be great fortune.

The second line, undivided, shows its subject with that sincerity which will make even the small offerings of the vernal sacrifice acceptable. There will be no error.

The third line, undivided, shows its subject ascending upwards as into an empty city.

The fourth line, divided, shows its subject employed by the king to present his offerings on mount Qi. There will be good fortune; there will be no mistake.

The fifth line, divided, shows its subject firmly correct, and

therefore enjoying good fortune. He ascends the stairs with all due ceremony.

The sixth line, divided, shows its subject advancing upwards blindly. Advantage will be found in a ceaseless maintenance of firm correctness.

47 Kun (Oppression) 困

☵ In the condition denoted by Kun there may be progress and success. For the firm and correct, the great man, there will be good fortune. He will fall into no error. If he makes speeches, his words cannot be made good.

The first line, divided, shows its subject with bare buttocks straitened under the stump of a tree. He enters a dark valley, and for three years has no prospect of deliverance.

The second line, undivided, shows its subject straitened amidst his wine and viands. There come to him anon the red knee-covers of the ruler. It will be well for him to maintain his sincerity as in sacrificing. Active operations on his part will lead to evil, but he will be free from blame.

The third line, divided, shows its subject straitened before a frowning rock. He lays hold of thorns. He enters his palace, and does not see his wife. There will be evil.

The fourth line, undivided, shows its subject proceeding very slowly to help the subject of the first line, who is straitened by the carriage adorned with metal in front of him. There will be occasion for regret, but the end will be good.

The fifth line, undivided, shows its subject with his nose and feet cut off. He is straitened by his ministers in their scarlet aprons.

He is leisurely in his movements, however, and is satisfied. It will be well for him to be as sincere as in sacrificing to spiritual beings.

The sixth line, divided, shows its subject straitened, as if bound with creepers; or in a high and dangerous position, and saying to himself, "If I move, I shall repent it." If he do repent of former errors, there will be good fortune in his going forward.

48 Jing (A Well) 井

䷯ Looking at Jing we think of how the site of a town may be changed, while the fashion of its wells undergoes no change. The water of a well never disappears and never receives any great increase, and those who come and those who go can draw and enjoy the benefit. If the drawing have nearly been accomplished, but, before the rope has quite reached the water, the bucket is broken, this is evil.

The first line, divided, shows a well so muddy that men will not drink of it, and an old well to which neither birds nor other creatures resort.

The second line, undivided, shows a well from which by a hole the water escapes and flows away to the shrimps and such small creatures among the grass, or one the water of which leaks away from a broken basket.

The third line, undivided, shows a well, which has been cleared out, but is not used. Our hearts are sorry for this, for the water might be drawn out and used. If the king were intelligent, both he and we might receive the benefit of it.

The fourth line, divided, shows a well, the lining of which is well laid. There will be no error.

The fifth line, undivided, shows a clear, limpid well, the waters from whose cold spring are freely drunk.

The topmost line, divided, shows the water from the well brought to the top, which is not allowed to be covered. This suggests the idea of sincerity. There will be great good fortune.

49 Ge (Revolution) 革

䷰ What takes place as indicated by Ge is believed in only after it has been accomplished. There will be great progress and success. Advantage will come from being firm and correct. In that case occasion for repentance will disappear.

The first line, undivided, shows its subject as if he were bound with the skin of a yellow ox.

The second line, divided, shows its subject making his changes after some time has passed. Action taken will be fortunate. There will be no error.

The third line, undivided, shows the action taken by its subject will be evil. Though he be firm and correct, his position is perilous. If the change he contemplates have been three times fully discussed, he will be believed in.

The fourth line, undivided, shows occasion for repentance disappearing from its subject. Let him be believed in; and though he changes existing ordinances, there will be good fortune.

The fifth line, undivided, shows the great man producing his changes as the tiger does when he changes his stripes. Before he divines and proceeds to action, faith has been reposed in him.

The sixth line, divided, shows the superior man producing his changes as the leopard does when he changes his spots, while small

men change their faces and show their obedience. To go forward now would lead to evil, but there will be good fortune in abiding firmness and correctness.

50 Ding (The Caldron) 鼎

☰ Ding gives the intimation of great progress and success.

The first line, divided, shows the caldron overthrown and its feet turned up. But there will be advantage in its getting rid of what was bad in it. Or it shows us the concubine whose position is improved by means of her son. There will be no error.

The second line, undivided, shows the caldron with the things to be cooked in it. If its subject can say, "My enemy dislikes me, but he cannot approach me," there will be good fortune.

The third line, undivided, shows the caldron with the places of its ears changed. The progress of its subject is thus stopped. The fat flesh of the pleasant which is in the caldron will not be eaten. But the genial rain will come, and the grounds for repentance will disappear. There will be good fortune in the end.

The fourth line, undivided, shows the caldron with its feet broken, and its contents, designed for the ruler's use, overturned and split. Its subject will be made to blush for shame. There will be evil.

The fifth line, divided, shows the caldron with yellow ears and rings of metal in them. There will be advantage through being firm and correct.

The sixth line, undivided, shows the caldron with rings of jade. There will be great good fortune, and all action taken will be in every way advantageous.

51 Zhen (Thunder, Exciting Power) 震

☳ Zhen gives the imitation of ease and development. When the time of movement which it indicates comes, the subject of the hexagram will be found looking out with apprehension, and yet smiling and talking cheerfully. When the movement like a crash of thunder terrifies all within a hundred li, he will be like the sincere worshipper who is not startled into letting go his ladle and cup of sacrificial spirits.

The first line, undivided, shows its subject, when the movement comes, he will be found looking out with apprehension, and afterwards smiling and talking cheerfully. There will be good fortune.

The second line, divided, shows its subject, when the movement approaches, in a position of peril. He judges it better to let go the articles in his possession, and to ascend a very lofty height. There is no occasion for him to pursue after the things he has let go; in seven days he will find them.

The third line, divided, shows its subject distraught amid the startling movements going on. If those movements excite him to right action, there will be no mistake.

The fourth line, undivided, shows its subject, amid the startling movements, supinely sinking deeper in the mud.

The fifth line, divided, shows its subject going and coming amidst the startling movements of the time, and always in peril; but perhaps he will not incur loss, and find business which he can accomplish.

The topmost line, divided, shows its subject, amidst the startling movements of the time, in breathless dismay and looking round him with trembling apprehension. If he takes action, there will be evil. If, while the startling movements have not reached his own person and his neighborhood, he were to take precautions, there would be no error, though his relatives might still speak against him.

52 Gen (Mountain, Arresting Movement) 艮

☶ When one's resting is like that of the back, he loses all consciousness of self; when he walks in his courtyard, and does not see any of the persons in it, —there will be no error.

The first line, divided, shows its subject keeping his toes at rest. There will be no error; but it will be advantageous for him to be persistently firm and correct.

The second line, divided, shows its subject keeping the calves of his legs at rest. He cannot help the subject of the line above whom he follows, and is dissatisfied in his mind.

The third line, undivided, shows its subject keeping his lions at rest, and separating the ribs from the body below. The situation is perilous, and the heart glows with suppressed excitement.

The fourth line, divided, shows its subject keeping his trunk at rest. There will be no error.

The fifth line, divided, shows its subject keeping his jawbones at rest, so that his words are orderly. Occasion for repentance will disappear.

The sixth line, undivided, shows its subject devotedly main-

taining his restfulness. There will be good fortune.

53 Jian (Gradual Progress, Growth) 漸

☴ Jian suggests to us the marriage of a young lady, and the good fortune attending it. There will be advantage in being firm and correct.

The first line, divided, shows the wild geese gradually approaching the shore. A young officer in similar circumstances will be in a position of danger, and be spoken against; but there will be no error.

The second line, divided, shows the geese gradually approaching the large rocks, where they eat and drink joyfully and at ease. There will be good fortune.

The third line, undivided, shows them gradually advanced to the dry plains. It suggests also the idea of a husband who goes on an expedition from which he does not return, and of a wife who is pregnant, but will not nourish her child. There will be evil. The case symbolized might be advantageous in resisting plunderers.

The fourth line, divided, shows the geese gradually advanced to the trees. They may light on the flat branches. There will be no error.

The fifth line, undivided, shows the geese gradually advanced to the high mound. It suggests the idea of a wife who for three years does not become pregnant; but in the end the natural issue can not be prevented. There will be good fortune.

The sixth line, undivided, shows the geese gradually advanced to the large heights. Their feathers can be used as ornaments. There

will be good fortune.

54 Gui Mei (The Marrying Maiden, Propriety) 归妹

☱ Gui Mei indicates that under the conditions which it denotes action will be evil, and in no wise advantageous.

The first line, undivided, shows the younger sister married off in a position ancillary to the real wife. It suggests the idea of a person lame on one leg who yet manages to tramp along. Going forward will be fortunate.

The second line, undivided, shows her blind of one eye, and yet able to see. There will be advantage in her maintaining the firm correctness of a solitary widow.

The third line, divided, shows the younger sister who was to be married off in a mean position. She returns and accepts an ancillary position.

The fourth line, undivided, shows the younger sister who is to be married off protracting the time. She may be late in being married, but the time will come.

The fifth line, divided, reminds us of the marrying of the younger sister of (king) Di-yi, when the sleeves of her the princess were not equal to those of the younger sister who accompanied her in an inferior capacity. The case suggests the thought of the moon almost full. There will be good fortune.

The sixth line, divided, shows the young lady bearing the basket, but without anything in it, and the gentleman slaughtering the sheep, but without blood flowing from it. There will be no advantage in any way.

55 Feng (Abundance, Prosperity) 丰

☱ Feng indicates progress and development. When a king has reached the point which the name denotes there is no occasion to be anxious through the fear of a change. Let him be as the sun at noon.

The first line, undivided, shows its subject meeting with his mate. Though they are both of the same character, there will be no error. Advance will call forth approval.

The second line, divided, shows its subject surrounded by screens so large and thick that at midday he can see from them the constellation of the Bushel. If he go and try to enlighten his ruler who is thus emblemized, he will make himself to be viewed with suspicion and dislike. Let him cherish his feeling of sincere devotion that he may thereby move his ruler's mind, and there will be good fortune.

The third line, undivided, shows its subject with an additional screen of a large and thick banner, through which at midday he can see the small Mei star. In the darkness he breaks his right arm; but there will be no error.

The fourth line, undivided, shows its subject in a tent so large and thick that at midday he can see from it the constellation of the Bushel. But he meets with the subject of the first line, undivided like himself. There will be good fortune.

The fifth line, divided, shows its subject bringing around him the men of brilliant ability. There will be occasion for congratulation and praise. There will be good fortune.

The topmost line, divided, shows its subject with his house

made large, but only serving as a screen to his household. When he looks at the door, it is still, and there is nobody about it. For three years no one is to be seen. There will be evil.

56 Lü (Traveling Stranger) 旅

☵ Lü intimates that in the condition which it denotes there may be some little attainment and progress. If the stranger or traveler be firm and correct as he ought to be, there will be good fortune.

The first line, divided, shows the stranger mean and meanly occupied. It is thus that he brings on himself further calamity.

The second line, divided, shows the stranger, occupying his lodging house, carrying with him his means of livelihood, and provided with good and trusty servants.

The third line, undivided, shows the stranger, burning his lodging house, and having lost his servants. However firm and correct he try to be, he will be in peril.

The fourth line, undivided, shows the traveler in a resting-place, having also the means of livelihood and the axe, but still saying, "I am not at ease in my mind."

The fifth line, divided, shows its subject shooting a pheasant. He will lose his arrow, but in the end he will obtain praise and high charge.

The sixth line, undivided, suggests the idea of a bird burning its nest. The stranger, thus represented, first laughs and then cries out. He has lost his ox-like docility too readily and easily. There will be evil.

57 Xun (Gentle Penetration) 巽

☴ Xun intimates that under the conditions which it denotes there will be some little attainment and progress. There will be advantage in movement onward in whatever direction. It will be advantageous also to see the great man.

The first line, divided, shows its subject now advancing, now receding. It would be advantageous for him to have the firm correctness of a brave soldier.

The second line, undivided, shows the representative of Xun beneath a couch, and employing diviners and exorcists in a way bordering on confusion. There will be good fortune and no error.

The third line, undivided, shows its subject penetrating only by violent and repeated efforts. There will be occasion for regret.

The fourth line, divided, shows all occasion for repentance in its subject passed away. He takes game for its threefold use in his hunting.

The fifth line, undivided, shows that with firm correctness there will be good fortune to its subject. All occasion for repentance will disappear, and all his movements will be advantageous. There may have been no good beginning, but there will be a good end. Three days before making any changes, let him give notice of them; and three days after, let him reconsider them. There will thus be good fortune.

The sixth line, undivided, shows the representative of penetration beneath a couch, and having lost the axe with which he executed his decisions. However firm and correct he may try to be, there will be evil.

58 Dui (Joy, Pleasure) 兑

☱ Dui indicates that under its conditions there will be progress and attainment. But there will be advantageous to be firm and correct.

The first line, undivided, shows the pleasure of inward harmony. There will be good fortune.

The second line, undivided, shows the pleasure arising from inward sincerity. There will be good fortune. Occasion for repentance will disappear.

The third line, divided, shows its subject bringing round himself whatever can give pleasure. There will be evil.

The fourth line, undivided, shows its subject deliberating about what to seek his pleasure in, and not at rest. He borders on what would be injurious but there will be cause for joy.

The fifth line, undivided, shows its subject trusting in one who would injure him. The situation is perilous.

The topmost line, divided, shows the pleasure of its subject in leading and attracting others.

59 Huan (Dispersion) 涣

☵ Huan intimates that under its conditions there will be progress and success. The king goes to his ancestral temple; and it will be advantageous to cross the great stream. It will be advantageous to be firm and correct.

The first line, divided, shows its subject engaged in rescuing from the impending evil and having the assistance of a strong horse.

There will be good fortune.

The second line, undivided, shows its subject, amid the dispersion, hurrying to his contrivance for security. All occasion for repentance will disappear.

The third line, divided, shows its subject discarding any regard to his own person. There will be no occasion for repentance.

The fourth line, divided, shows its subject scattering the different parties in the states, which leads to good fortune. From the dispersion he collects again good men standing out, a crowd like a mound, which is what ordinary men would not have thought of.

The fifth line, undivided, shows its subject amidst the dispersion issuing his great announcements as the perspiration flows from his body. He scatters abroad also the accumulations in the royal granaries. There will be no error.

The topmost line, undivided, shows its subject disposing of what may be called its bloody wounds, and going and separating himself from its anxious fears. There will be no error.

60 Jie (Regulation, Restraining) 节

☱ Jie intimates that under its conditions there will be progress and attainment. But if the regulations which it prescribes be severe and difficult, they cannot be permanent.

The first line, undivided, shows its subject not quitting the courtyard outside his door. There will be no error.

The second line, undivided, shows its subject not quitting the courtyard inside his gate. There will be evil.

The third line, divided, shows its subject with no appearance of observing the proper regulations, in which case we shall see him

lamenting. But there will be no one to blame but himself.

The fourth line, divided, shows its subject quietly and naturally attentive to all regulations. There will be progress and success.

The fifth line, undivided, shows its subject sweetly and acceptably enacting his regulations. There will be good fortune. The onward progress with them will afford ground for admiration.

The topmost line, divided, shows its subject enacting regulations severe and difficult. Even with firmness and correctness there will be evil. But though there will be cause for repentance, it will by and by disappear.

61 Zhong Fu (Inmost Sincerity) 中孚

☱ Zhong Fu moves even pigs and fish, and leads to good fortune. There will be advantage in crossing the great stream. There will be advantage in being firm and correct.

The first line, undivided, shows its subject resting in himself. There will be good fortune. If he sought to any other, he would not find rest.

The second line, undivided, shows its subject like the crane crying out in her hidden retirement, and her young ones responding to her. It is as if it were said, "I have a cup of good spirits," and the response were, "I will partake of it with you."

The third line, divided, shows its subject having met with his mate. Now he beats his drum, and now he leaves off. Now he weeps, and now he sings.

The fourth line, divided, shows its subject like the moon nearly full, and like a horse in a chariot whose fellow disappears. There will be no error.

The fifth line, undivided, shows its subject perfectly sincere, and linking others to him in closest union. There will be no error.

The topmost line, undivided, shows its subject in chauticleer trying to mount to heaven. Even with firm correctness there will be evil.

62 Xiao Guo (Small Excesses) 小过

☱ Xiao Guo indicates that in the circumstances which it implies there will be progress and attainment. But it will be advantageous to be firm and correct. What the name denotes may be done in small affairs, but not in great affairs. It is like the notes that come down from a bird on the wing; —to descend is better than to ascend. There will be in this way be great good fortune.

The first line, divided, suggests the idea of a bird flying, and ascending till the issue is evil.

The second line, divided, shows its subject passing by his grandfather, and meeting with his grandmother, not attempting anything against his ruler, but meeting him as his minister. There will be no error.

The third line, undivided, shows its subject taking no extraordinary precautions against danger; and some in consequence finding opportunity to assail and injure him. There will be evil.

The fourth line, undivided, shows its subject falling into no error, but meeting the exigency of his situation, without exceeding in his natural course. If he goes forward, there will be peril, and he must be cautious. There is no occasion to be using firmness perpetually.

The fifth line, divided, suggests the idea of dense clouds, but

no rain, coming from our borders in the west. It also shows the prince shooting his arrow, and taking the bird in a cave.

The sixth line, divided, shows its subject not meeting the exigency of his situation, and exceeding his proper course. It suggests the idea of a bird flying far aloft. There will be evil. The case is what is called one of calamity and self-produced injury.

63 Ji Ji (Completion) 既济

☵ Ji Ji intimates progress and success in small matters. There will be advantage in being firm and correct. There has been good fortune in the beginning; there may be disorder in the end.

The first line, undivided, shows its subject as a driver who drags back his wheel, or as a fox which has wet his tail. There will be no error.

The second line, divided, shows its subject as a wife who has lost her carriage-screen. There is no occasion to go in pursuit of it. In seven days she will find it.

The third line, undivided, suggests the case of Gao Zong who attacked the Demon region, but was three years in subduing it. Small men should not be employed in such enterprises.

The fourth line, divided, shows its subject with rags provided against any leak in his boat, and on his guard all day long.

The fifth line, undivided, shows its subject as the neighbor in the east who slaughters an ox for his sacrifice; but this is not equal to the small spring sacrifice of the neighbor in the west, whose sincerity receives the blessing.

The topmost line, divided, shows its subject with even his head immersed. The position is perilous.

64 Wei Ji (Before Completion) 未济

☲ Wei Ji intimates progress and success in the circumstances which it implies. We see a young fox that has nearly crossed the stream, when its tail gets immersed. There will be no advantage in any way.

The first line, divided, shows its subject like a fox whose tail get immersed. There will be occasion for regret.

The second line, undivided, shows its subject dragging back his carriage-wheel. With firmness and correctness there will be good fortune.

The third line, divided, shows its subject, with the state of things not yet remedied, advancing on; which will lead to evil. But there will be advantage in trying to cross the great stream.

The fourth line, undivided, shows its subject by firm correctness obtaining good fortune, so that all occasion for repentance disappears. Let him stir himself up, as if he were invading the Demon region, where for three years rewards will come to him and his troops from the great kingdom.

The fifth line, divided, shows its subject by firm correctness obtaining good fortune, and having no occasion for repentance. We see in him the brightness of a superior man, and the possession of sincerity. There will be good fortune.

The topmost line, undivided, shows its subject full of confidence and therefore feasting quietly. There will be no error. If he cherish this confidence, till he is like the fox who gets his head immersed, it will fail of what is right.

(Translated by James Legge and Niu Jiezhen)