THE PHILOSOPHICAL FOUNDATIONS OF CLASSICAL CHINESE MEDICINE

Philosophy, Methodology, Science

KEEKOK LEE

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Preface

汉乐府民歌

长歌行

青青园中葵，朝露待日晞。
阳春布德泽，万物生光辉。
长恐秋节至，焜黄华叶衰。
百川东到海，何时复西归？
少壮不努力，老大徒伤悲。

This is a folk song recorded during the Han Dynasty by the Bureau of Music which had already been set up during the preceding, short-lived Qin dynasty. However, under the eager patronage of Han Wudi of the Western Han period who ruled from 141-87 BCE, the Bureau became very active and vigorous in implementing its remits, one of which was the specific one of collecting and collating folk songs. This means that the song was much older than the Western Han dynasty, and probably had existed for several centuries earlier.

This song talks about the passage of time. Time once gone is gone forever, like the waters of the rivers, which flow into the sea, never to return, like the green leaves of spring turning eventually yellow in the autumn, like the dew drops on the sunflower, which dry and evaporate as the sun grows stronger with the passing of the early morning cool. If in the vim and vigour of your

youth, you fail to strive to realize your potential, to realize your various talents, then all that would be left for you in your old age is to sigh sadly with nothing to show for.

The moral is clear, but here one is not interested in this aspect, in this work, but in pointing out that the key tropes invoked in this folk song also happen to refer to the central concepts of Chinese *philosophy*/cosmology and also, therefore, of Classical Chinese *Medicine* (CCM):

1. The daily rhythm of sunrise and (implied) sunset—the sun in the morning is gentle and mild but gets hotter as the day wears on until in the late afternoon it gets weaker, eventually disappearing altogether by the very late afternoon/early evening. This is called the *zhouye jielü* 昼夜节律. This rhythm in Nature is found in ourselves as we, who are living beings, obey, also that *Law of Nature*. (Needless to say, these are not mathematized as the laws of Nature are in modern science—hence, to warn readers that they differ in this profound respect from their Western modern counterparts, this author has italicized the term when used in the Chinese context.)
2. The yearly rhythm of the four seasons: spring and autumn only are mentioned in the folk song. However, in ancient Chinese literature, spring and autumn stand for the passage of the entire year, including summer and winter. This is the *sishi jielü* 四时节律. This rhythm, too, is similarly found in ourselves and we obey that *Law of Nature*, too.
3. CCM contains a key concept called *tianren-xiangying* (天人相应) which includes the two *Laws of Nature* mentioned above.
4. Spring is the time for the first stirring of life on Earth after the die-back of winter; summer is the time for all organisms to grow and develop; autumn is the time for trees to bear fruit and for young animals born in the spring to come to maturity; winter is the time for organisms "to recollect themselves" in rest and tranquillity, even for some to go into hibernation, in preparation for the next cycle in the renewal of life in the following spring. This in CCM is referred to as: *chun sheng xia zhang qiu shou dong cang* 春生夏长秋收冬藏. *Qi* (气) in greater Nature undergoes these four phases in the process of transformation and change; these phases are found in every living organism, including ourselves.
5. The four seasons, involving the phases of change and transformation of *Qi* in the annual cycle, secure the conditions for all life, ensuring the continuity of life forms on Earth. The folk song tells us that this cycle is a gift from Nature or in ancient Chinese terms from Heaven天*tian* and Earth 地 *di*, for which we must be deeply grateful—阳春布德泽, 万

物生光辉. A key text of CCM, the *Huangdi neijing*《黄帝内经》says that *wanwu* 万物 (the myriad things) are the children of Heaven and Earth (Nature), and that Heaven and Earth look after us, as parents look after their own children.

6. The song refers directly to the Sun (*ri*日) and talks indirectly about the sky or the heavens above—the Sun in the heaven/sky above gives forth warmth and light, that is, energy which provides the conditions essential for life.
7. The song also uses the character/word 阳 *yang*, which is another term for the Sun. However, *yang* does not simply stand for Sun but also for *yang qi* 阳气, one of two types of *Qi*. The song also refers to the water (水 *shui*) in rivers (川) and the sea (海) on our planet Earth. In Chinese *philosophy*/cosmology and CCM, water and Earth belong to *yin*, and so are about *yin qi* 阴气. In other words, the song implies the concepts of *yin qi* and *yang qi* as well as *yinyang* 阴阳 which constitute the central concepts of Chinese *philosophy*/cosmology and, therefore, of CCM.
8. The themes referred to at 4, 5, 6, and 7 above may be found in a passage of the *Huangdi neijing*, Chapter 5, which reads: 阴阳者, 天地之道也, 万物之纲纪, 变化, 父母, 生杀之本始, 神明之府也，治病必求于本… (《黄帝内经. 素问. 阴阳应象大论》). This author renders it as follows: *Yinyang* constitutes the *dao* of Heaven and Earth; it embraces *wanwu* within its order and its laws; it is the source of all changes as well as the very foundation of life and growth; it is where the spirit dwells. The physician, in order to heal the sick, must always cut to the root of the illness in terms of *yinyang* and restore its balance in the individual.
9. The reference in the song to the Sun 日, 阳 and its implied reference to Earth may be understood as a reference to Astronomy (Time). A basic aspect of astronomy is the study of the movements of heavenly bodies and Earth's relationships with them. The rising and setting of the Sun on a daily basis is the relationship between Earth and Sun, as only half of Earth's surface is exposed to the Sun at any one time while the other half is in darkness. So, too, does the cycle of the four seasons reflect the relationship between Earth and Sun in the course of the year.
10. The song speaks of the numerous rivers in China, that they, in the main, flow east-west rather than north-south; their headwaters being in the west but flowing into the sea in the east (百川东到海) is a reference to Geography (Space).

11. The song reminds us that time does not wait for anyone, that there is one certainty or constancy in human existence, the law of birth, growth, maturity, decline, and finally death over which we have no choice but to respect （少壮。。。老大。。。). This is a reference to humans who must conduct their lives and their affairs within the constraints imposed by Astronomy (Time) and Geography (Space) on Earth. This implies, in turn, a reference to the three Powers (三才 *sancai*), namely, Heaven above, Earth below and Humans in between.
12. Hence, 9, 10, and 11 above sum up yet another central theme of CCM, namely, that to understand what health is, what illness is, what prevents/cures illnesses, one needs to know Astronomy (Time), Geography (Space) and human affairs. If you knew all three you would not only be wise but you would also live "long and healthily." 上知天文, 下知地理, 中知人事" (*shang zhi tianwen, xia zhi dili, zhong zhi renshi*): to grasp this is basically to grasp what CCM is all about.

This little folk song surprisingly contains key themes in Chinese *philosophy*/cosmology and also some of the essential elements of CCM. This goes to show that these themes and concepts are deeply embedded in Chinese culture and civilization dating from very ancient times and, therefore, that the concepts of CCM must be understood within the framework of Chinese *philosophy*/cosmology.

CHAPTER ONE

Introduction

The 1990s also witnessed the reentry into Chinese medicine of classical philosophy and a self-conscious "return to the sources" that is unashamedly concerned with reworking China's own tradition rather than learning from the West. Scheid, 2002: 194

Background and Nature of Book

This book is a companion volume to *The Philosophical Foundations of Modern Medicine* (Lee, 2012b), which has been written to clarify the philosophical framework within which Biomedicine is conducted and has to be understood. This book attempts an equivalent exploration of Classical Chinese *Medicine* (CCM).

These two volumes are born out of a common perspective—no scientific activity (including medicine in so far as medicine claims to be scientific) is innocent of philosophy, notwithstanding the claim of positivist philosophy that science is "scientific" only because it has gone beyond the "metaphysical mode" of explanation (Lee, 2012b). One should not be taken in by this piece of blatant positivist propaganda.[1]

While Modern Medicine/Biomedicine emerges from modern Western philosophy since the seventeenth century in Western Europe, CCM has emerged, it will be argued, from philosophical roots which could be said to be at least two and a half thousand—if not more—years old. It may be presumed as a working hypothesis that modern Western philosophy and ancient Chinese *philosophy* are radically different in character; the medicines which

ensue from their respective frameworks will also be different.[2] This volume sets out the *philosophical* foundations for CCM; another volume to follow (Lee, in progress/forthcoming) will demonstrate why CCM possesses the specific characteristics it does because of such a *philosophical* framework.[3] This division of labor is called for, as the entire enterprise would lead to such a large volume as to be non-viable. This volume has been written in such a way as to be self-contained, although now and again, wherever appropriate, it would refer to some aspects of CCM, just to remind the reader that their detailed exploration would follow in its sequel. While the latter is predicated upon the former, the former alone could be read as a *philosophical*/cosmological prelude to its sequel from the vantage points to be set out below.

Modern Western philosophy may simplistically be summarized as follows: it is empiricist both in its metaphysics and its epistemology (the metaphysical thesis that only what is ascertainable by means of the five senses and by extension the use of instrumentation is real and exists, the epistemological claim that one can only have knowledge *via* the five senses). Its model of causation is Humean and linear—the phenomenon to be explained, A, is related to one other phenomenon B, its effect, in terms of one cause and one effect, where the causal arrow moves in a straight line only from cause to effect, and cause and effect are associated with each other either as constant conjunction or in terms of probability. It also invokes thing-ontology—it is based on macroscopic/everyday-life objects which have shape, size, and form, are stable, solid, and impenetrable such as mountains, tigers, or tables. Very importantly, modern Western philosophy rests on what Lee (2012b) calls an "ontological *volte-face*"—the universe, and everything in it, including human beings are machines and the science generated from it involves Reductionism, that a whole may "non-mysteriously" be decomposed into its parts while parts can equally "non-mysteriously" be put together (synthesized) to form a whole. The whole is no different than the sum of the parts.

In contrast, the ancient Chinese *philosophy* within which CCM was/is embedded may be said to imply process-ontology—it considers events and processes to be foundational, rather than things. Furthermore, it implies complex causal relationships between events and processes which may be said to be multi-factorial and non-linear. Such a *philosophy* is *Wholist* in orientation—the universe and everything in it, including human beings, constitute *Wholes* which are different from the sum of their parts, and which in turn are related as well as inter-related with other *Wholes*. However, ancient Chinese *philosophy*/cosmology are much more nuanced than such a simplistic account in outline could convey; detailed exploration of aspects of their complexity will be found in specific chapters of this volume.

One must at once enter several caveats. First, this volume does not claim to deal with the whole of ancient Chinese *philosophy*. It has very little to say, *per se*, about the Confucian canon, important though it is normally considered to be. As its remit is very limited, the texts looked at are held to belong to that tradition called Daoism/*Daojia philosophy*/道家, as that tradition is regarded by Chinese scholars down through the ages to be foundational to the 《黄帝 内经》/ *Huangdi neijing* (from now on referred to as the *Neijing*), itself regarded as a foundational, if not, *the* foundational text of CCM. This text is considered to be a *Daojia* text. This should not, however, be interpreted to mean that the Confucian tradition has made no contributions to *Daojia philosophy* (or vice versa) as did clearly happen especially during the Han Dynasty (206 BCE—25 CE)—in appropriate places throughout the book, this influence will be pointed out.

Second, the account of the *philosophical*/cosmological underpinning of CCM offered here is intended as no more than an *interpretation*,[4] although its author hopes that such an interpretation would be a plausible and possibly even fruitful contribution to an on-going project undertaken by some Chinese physicians-cum-scholars of late, to go back to cultural/*philosophical* roots; in the words of Scheid, 2002, the project is "the reentry into Chinese medicine of classical philosophy and a self-conscious 'return to the sources.'" What then is this "classical philosophy," this "return to the sources"? This volume can be construed, then, as one such effort to clarify and explore what that *philosophy* and the sources behind it could be and are. The reader must bear in mind that this author is working against a background which is quite different from that which physicians-scholars in China are at the moment engaged with. This author neither lives in China, nor has been educated in China and is not a practitioner of Chinese *Medicine*/中医/*zhongyi* in any known form of that *medicine* set out so clearly by Scheid. The author has only two possibly relevant reasons for this undertaking: first, the interest is a deeply personal one, as the author and family were privileged in having been looked after for up to a quarter of a century by a brilliant physician, trained within a family of several generations of physicians, some of whom even served the imperial household, from time to time, during the Qing Dynasty (1644–1911 CE). Second, as a philosopher with an interest in the philosophy of biology and genetics, a preoccupation with the philosophy of science and technology not to mention environmental philosophy, it is, therefore, not surprising that of late this author has turned to the philosophy of medicine as a domain of exploration.

As a philosopher brought up in the West, within the so-called analytical tradition of Anglo-Saxon philosophy, the author brings to bear whatever skills acquired from this training upon the exploration of Chinese *philosophy*/cosmology which appears to underpin CCM. Whenever relevant, issues in

the history of science and the philosophy of science, not to mention contemporary developments at the cutting edge of modern (global) science will be cited to cast light on a matter in hand. At the same time, techniques often relied on by Chinese scholarship which concerns ancient texts, such as tracing a character/word to some of its most ancient scripts in order to get at its meaning are happily relied on. Archaeological discoveries which could shed light on ancient texts will also be brought into play. In a word, the author is happy to live with the charge that the work uses an "eclectic tool-kit" for the task in hand.

It must also be pointed out that this is *not* a sinological work as this author has no professional qualifications in the field, although given the nature of the exercise, it is bound to trespass in some ways into this domain. However, this does not mean that sinologists with an interest in CCM may find it of no relevance to their pre-occupation, in spite of its drawbacks from a strict/purist sinological perspective. The vantage point from which the interpretation of CCM is given here is that of a philosopher trained in the Western analytical school of philosophy whose intention is to make CCM intelligible (in terms of its *philosophy*/cosmology, the methodology of doing *science* which follows from such a foundation) to an English-reading world which is, by and large, unfamiliar with CCM and who may tend to judge CCM to be unscientific, pseudo-scientific, or even downright unintelligible when judged (usually) implicitly by the standards of Biomedicine (or of Newtonian sciences in general). It is an attempt to show in detail how the two medicines are different because they are each embedded within their own respective traditions of philosophy and methodology. Each subscribes to a different paradigm of "scientificity"—judged by that which underpins Biomedicine as a Newtonian science, CCM would necessarily be unscientific. However, all that this demonstrates is that one should not judge a cat show by the standards of a dog show and conclude that a cat is a sub-standard dog, or indeed, not a dog at all. Furthermore, it would show that although the dominant conception of disease in Biomedicine renders it a Newtonian science, not all of Modern Science, since the end of the nineteenth and the twentieth centuries, falls within the Newtonian framework. CCM would be much more readily understandable and understood when looked at from the vantage point of some non-Newtonian sciences such as quantum and relativity physics, not to mention developments within Modern Medicine itself, such as epidemiology (since the nineteenth century) and other areas developed much more recently such as psycho-somatic medicine and Precision/Personalized Medicine. These commonalities are not intended to mask the differences which exist all the same between Biomedicine and CCM—they are meant to argue

that each medicine should be respected in its own right, and that it would be a category mistake, simplistically, to judge the one according to the paradigm of scientificity endorsed by the other.

Neither does the volume set out to be an exercise in comparative philosophy *simpliciter*—East/ancient Chinese and West/modern, although it may be read as one. In order to carry out the project, inevitably at times the two have to be juxtaposed and the peculiar features and characteristics of the one are set out against those of the other.

Summary of Structure and Rationale of Chapters in this Volume

Chapter 2
Bibliographical Justification and Clarification of the Main Texts Selected
This is required (a) to make clear that its interpretation of CCM rests on the contention, commonly held among Chinese physicians-cum-scholars that the *Daojia*/道家 tradition had played a key, though not, perhaps, an exclusive role, in its emergence/development. In trying to construct a *philosophical* framework for CCM, it focuses on the *Laozi*《老子》, the *Zhuangzi*《庄子》, the *Huainanzi*《淮南子》; (b) very importantly on the *Yijing*《易经》which is part of the *Zhouyi*/《周易》(better known in the West as the *I Ching*) as it is foundational to Chinese culture (and hence crucially relevant to its *philosophy* and its *medicine*); (c) to sort out some key problems regarding some of these ancient texts whose provenance and origins have been subject to debate and controversy through the ages. It has to forego examining the contribution of other traditions, such as the Confucian, the Buddhist, as well as the *Daojiao*/道教 traditions, not to mention the medical traditions of many of the ethnic minority groups over the centuries and millennia—the justification for this principle of economy lies primarily in that this work is not an exercise in the history of CCM *per se* but simply a particular interpretation of the *medicine*, written from certain specific vantage points. Whenever appropriate, it will refer to and acknowledge such relevant contributions.

Chapter 3
Ontology: *Qi* and Its Role in the Lattice of Interweaving Key Concepts
This explores *Qi*/气 as the fundamental ontological category in ancient Chinese *philosophy*. Without a clear grasp of what it entails, one could not hope to understand the notions of *yin qi*/阴气, *yang qi*/阳气, as well as *Yinyang*/阴阳, which everyone agrees are indispensable to all versions of Chinese *Medicine* and therefore of CCM itself. It argues that it is vital to distinguish

between the two intimately related modes of manifestation of *Qi*—*Qi*-in-dissipating mode (气散/*qi san*) and *Qi*-in-concentrating mode (气聚/*qi ju*), a nuanced thesis which has very significant implications for the kind of science generated by such an ontological framework.

Chapter 4
Metaphysics: The *Laozi* and the Lattice of Interweaving Key Concepts
This looks at key notions of the *Laozi*: *Ziran*/自然, the Dao/道, *tiandi*/天地 (Heaven which pertains to Astronomy and Time, while Earth pertains to Geography and Space), explores their relationship with *Qi* (the fundamental ontological category) as well as other metaphysical notions such as the distinction between *you*/有 and *wu*/无.

Chapter 5
The *Zhouyi*/the *Yi*: Meanings and Significance
This shows that the *Zhouyi*, being foundational to Chinese culture, is naturally also foundational to its *philosophy* and its *science*. What began as a divinatory text had transformed itself into a set of diagnostic/analytical tools which could be relevant to *philosophical* understanding as well as possess methodological implications for doing *science*. The trigrams and its respective three *yaos*/爻, as well as the hexagrams based on the trigrams (the *Yao-gua*/爻卦 Model), amount to *Wholism*, the philosophical view that the Whole is different from/more than the sum of its parts. It appears to be consonant with what today is called systems thinking.

Chapter 6
The *Yi*: *Yin qi*, *Yang qi*, *Yinyang*, and the *Yao-gua* Model
This develops further the theme of chapter 5, showing in greater detail the relationships between (a) the three meanings of *yi*易 (as found in the *Yijing*), (b) 阴气/*yin qi* and 阳气/*yang qi* (c) between the *Yi* meanings, the two kinds of *qi* (*yin qi* and *yang qi*) on the one hand and the *Yao-gua*/爻卦 Model on the other. It then explores the implications of (a), (b), and (c) for doing *science*.

Chapter 7
Yinyang-Wuxing
This explores the notions of: (a) *Yinyang*/阴阳, (b) *Wuxing*/五行, (c) the joint notion of *Yinyang-Wuxing*, and (d) the implications of this joint metaphysical concept for doing *science*, focusing on the two main modes of interactions in *Wuxing*, the Mutually Engendering/*xiang sheng*/相/生 and the Mutually Constraining/*xiang ke*/相克Cycle and pointing to their relevance in one's understanding of how ecosystems behave and what Ecosystem Thinking amounts to.

Chapter 8
Process Philosophy/Ontology

The preceding chapters which explore the *Yi*, *Qi* in general, *yin qi* and *yang qi* in particular, *Yinyang*, *Wuxing*, *Yinyang-Wuxing*, the *Yao-gua* Model will have made it abundantly clear that this kind of *philosophical* orientation cannot be understood within what is called thing-ontology but only within process-ontology. Thing-ontology is the dominant ontology in the Western tradition and has been so for more than two thousand years from ancient Greek philosophy to now. It is the ontology which underpins Newtonian science, focusing on bodies and their motion in absolute space. The first systematic articulation of process-ontology in the West has a history of only several decades. Chinese *philosophy*, in contrast, has always implied process-ontology since the emergence of the *Yijing*, probably more than three thousand years ago. It also looks at two philosophers/scientists in the West, Leibniz and Bohr, who understood implicitly the tradition of process-ontology in ancient Chinese *philosophy* but such understanding was sidelined, misunderstood, and ignored in the West. In the same spirit, it would have occasion to refer to a more recent work by Bohm, 1980, a contribution from a theoretical physicist who, like this author, argues from the standpoint of process philosophy and Wholeness/*Wholeness*.

Chapter 9
Modes of Thinking

This chapter brings the specific characteristics of Chinese thinking in the *Yijing/Daojia* tradition to the fore under the following headings: (a) contextual, (b) dyadic, (c) giving rise to a unique approach which may be called "Contextual-dyadic," and (d) *xiang*/象 mode (endemic in the *Yao-gua* Model), which one may also argue is unique to Chinese *philosophy*. Western philosophy since Descartes has advocated dualistic thinking, unlike Chinese *philosophy* which is dyadic, especially in its Contextual-dyadic manifestation. Given this radical difference, it is not surprising that ancient Chinese *philosophy* neither developed formal logic nor used a two-valued logic (which is classical Western logic)—Chinese *philosophy* implicitly rests on what this author calls *Yinyang/Yao-gua logic* which appears to be an implicit version of many-valued logic (eight values as implied by the eight trigrams). Leibniz and some leading Jesuits who generously claimed that the ancient Chinese were the pioneers of two-valued logic were not entirely correct. While two-valued logic adheres to Aristotle's three laws of thought (the laws of identity, non-contradiction, and excluded middle), *Yinyang/Yao-gua* implicit *logic* does not; from this, one should not and cannot simply conclude that such a logic is "illogical" or that using it commits one to incoherence or unintelligibility as demonstrated by paraconsitent logic. Furthermore, "fuzzy" logic, a form

of many-valued logic, appeared in the West in the 1970s; *Yinyang/Yao-gua* implicit *logic* is shown to be an early analog of it.

Chapter 10
***Wholism* in Chinese Terms**
This explores the following: (a) *Qi Wholism: yin qi and yang qi, Yinyang*, (b) Macro-micro-cosmic *Wholism* (what sinologists call "Correlative Thinking"), (c) Timespace *Wholism*, and (d) *Ecosystem Wholism*. It also makes clear the difference between what it calls "wholism," "Wholism," and "*Wholism*"—the first is actually the Reductionist thesis in disguise which simply views the whole as an aggregate (the whole is simply the sum of its parts). The second and third are committed to holding that the Whole/*Whole* is different from/more than the sum of its parts. Wholism is increasingly today being advocated by some scientists although the overwhelming majority of them are still Reductionists (and so are wholists), whereas Chinese *philosophy* has always been *Wholist* ever since the *Yijing*. The Chinese version appears in italics to draw attention to the point that Chinese *philosophy* has its own peculiar characteristics. However, here the focus is on general *philosophical Wholism* which prepares the ground for specific forms of *Wholism* more relevant to a discussion of CCM to be explored in the sequel to this volume.

Chapter 11
Implications of Wholism/*Wholism* for *Science*, Methodology and Ontology
This explores the implications of wholism and Wholism/*Wholism* from the standpoint of the notion of causality. The former is committed to the linear/Humean model while the latter are committed to non-linearity; in particular, the *philosophy/science* of the ancient Chinese tradition had/has always been conducted within what this author calls a *Wholist*/or "ecosystemic" framework. It looks as if that post-Newtonian sciences especially in the twenty-first century will be conducted as "ecosystem" sciences, in the larger meaning of that term. The ancient Chinese built their "ecosophy" on this wider understanding of "ecosystem" systems, which differs profoundly from the kind of science which modern Western philosophy since the seventeenth century generated, resting on the so-called fact/value distinction. The *Yao-gua* Model as a set of diagnostic/analytical tools is and can be applied in numerous if not all domains of intellectual/practical activities; it also encompasses all aspects of reality. As values are as much a part of reality as so-called facts, why should science/*science* not study such a significant dimension of reality? Science/*science*, after all, is done by human beings whose conduct in every aspect is

informed by values. From such a perspective, it is the modern Western philosophical tradition which looks odd by so strenuously banishing values from its science, and its science-making.

Conclusion

From the exploration of certain aspects of classical Chinese *philosophy* as delineated here, it appears plausible to infer that, increasingly, it would become easier for those not familiar with it to grasp that it is not so alien after all. A simple reason lies in this: especially in the twenty-first century, science is no longer simply conducted as Newtonian but also as post-Newtonian in numerous domains, which is analogous (though, obviously, not identical to) the *philosophical* framework within which Chinese *science* such as CCM has been conducted. Newtonian sciences are/were conducted within thing-ontology, relying on Humean/linear model of causality; post-Newtonian sciences operate within process-ontology and a non-linear model of causality. Systems thinking in the 1970s was one of the pioneers of generating such a paradigm shift. This book also argues that ecosystems thinking (in the larger sense of that term) is also gaining ground—many different strands and new shoots help to create a new philosophical perspective for doing science, such that the old simplistic divide between what is "scientific," "above suspicion," and what is "unscientific," "pseudo-scientific," "dodgy," or "flaky" would break down, leaving some common space within which it is meaningful to discuss the overlap between the *philosophical* framework for understanding CCM and that for understanding the post-Newtonian sciences which are rapidly gaining ground—after all, there are many different kinds of sciences, depending on their respective philosophical underpinnings. This is the most important thing to grasp should one wish to escape the confines of the limitations imposed by a simplistic approach to the history of philosophy on the one hand as well as the history and philosophy of science on the other—a simplistic approach precisely because it suffers from the self-imposed limitations of time and space.

There is yet another way of understanding the project of this volume; however, to raise it here and now might distract the reader from the prolonged exploration of Chinese *philosophy* and *science* in the ensuing chapters. Hence, it will only be raised in the concluding chapter when the self-imposed task of exploration and clarification is completed and it is clear where the arguments lie.

Before leaving this introduction, there is one more matter which requires some further explanation. This volume is consistently said to give an account

of the *philosophical* framework implicitly embedded in Classical Chinese *Medicine* (CCM) and appears to distance itself from a recently emerged version of Chinese *medicine* generally referred to as Traditional Chinese Medicine (TCM), especially in the West but also in China, today. It is not part of the remit of this work nor is this author equipped to do justice to TCM,[5] but, nevertheless, a few words of clarification are called for. The justification for confining this work to CCM relies on three main considerations, the last being the most compelling:

1. The time element: the cut-off point for CCM is very roughly post-Qing, the beginning of the Republican Period, although this guideline can only be used as a crude yardstick, as a matter of convenience only. The Republican Period can itself be divided into two sub-divisions, roughly the first half of the twentieth century and the second half of the last century to the present.
2. Increasingly systematic introduction of Modern Medicine/Biomedicine into China: The first inroad of Modern Medicine into China occurred well before the fall of the Qing Dynasty. It is obvious that this guideline does not coincide too neatly with the time guideline. The original inroad was ignored by the overwhelming majority of Chinese physicians who, on the whole, probably did not even notice its arrival given their own pre-occupations within the context of their own existence; but of the few who were aware of its existence, they were not necessarily hostile and indeed, one, Zhang Xichun/张锡纯 (1860–1933), acknowledged today to be the pioneer in integrating the two medicines (see *Luo, 2014), even made efforts with fruitful results in borrowing from it and incorporating it into the *medicine* of his own culture. However, the first five Republican decades produced a different reaction, one of mutual hostility between the two medicines, indigenous and foreign, as those with political power, in the name of modernization and progress, began a long campaign to suppress—indeed even to eliminate—the former. This strife and hostility was later replaced by peaceful co-existence after the establishment of the People's Republic of China; the government actively pursued/pursues a course of ultimately integrating the two systems. This complicated background involving the relationship between the two medicines—indigenous (therefore seen as "traditional") and modern (imported from the West)—is what makes this author in part concerned to distinguish between CCM and TCM. As the quotation from Scheid, 2002 shows there are physicians in China who are not

altogether happy with the neglect of the cultural and *philosophical* roots of Chinese *Medicine*, a neglect which is bound to occur, given that time is limited and the syllabus is divided between the two medicines in the professional training of the practitioners of Chinese *Medicine* laid on by medical schools in China today. There is a strong undercurrent which urges a return to the cultural and *philosophical* roots upon which Chinese *Medicine* (CM) rests; it is in this spirit that this author uses the term "Classical Chinese Medicine" to distinguish it from that version generally taught in medical schools in China today which in English is called "Traditional Chinese Medicine."

3. The historical dimension: the call for a return to the cultural/*philosophical* roots of CM draws attention to the fact that in its long history down the millennia until the recent emergence of Modern Medicine as a serious rival to it, physicians, especially the scholar-physicians, had been trained (or had trained themselves) not only in the foundational medical texts such as the *Neijing* but also foundational cultural/*philosophical* texts such as the *Yijing*/*Zhouyi*, the *Laozi*, and the *Zhuangzi* which are all *au fond daojia* texts (chapter 2). The exponents of this call to return to roots are convinced, like the scholar-physicians of yore, that to be an outstanding physician (as opposed to being a merely competent or mediocre one who may excel in having mastered the *medicine* but only as a set of technical skills), one must go beyond the subject as technical expertise to a profound grasp of its *philosophy*, to capture and embody its spirit, its theoretical as well as spiritual dimensions in practice—they are convinced that otherwise CM will sooner or later wither on the vine. Hence their championing of what may be called CCM in English. Two representative works of this strong undercurrent, which have appeared of late, are *Liu, 2003 and *Pan, 2013.
4. The detailed implications for CCM of this set of themes in the chapters outlined above—*Wholism* in its various forms, "ecosystem" *science*, Contextual-dyadic Mode of Thinking, non-linear, multi-factorial mode of causality, *Qi* in its two modes, *Qi*-in-concentrating and *Qi*-in-dissipating modes, thing-ontology/process-ontology, *Yinyang-Wuxing*—will be pursued in greater depth in Lee, (forthcoming).

One final "health warning": this author takes responsibility for foisting the interpretation pursued here upon the writings of scholars, dead or alive, as well as proffering an apology to the latter group in case they find that what they have written or communicated have been misunderstood.

Notes

1. Shapin, 1996: 1 seems, by implication, to challenge this view, as he claims that "There was no such thing as the Scientific Revolution." If correct, then it is neither here nor there that "the Scientific Revolution" requires a new philosophy to support it. After this most provocative beginning, he progressively attenuates it until he ends up with: "I have said that there is nothing like an 'essence' of the Scientific Revolution, and I have sought wherever possible to introduce readers to the heterogeneity, and even the contested status of natural knowledge in the seventeenth century" (161–162). Furthermore, he goes to great lengths to show how a new philosophy was constructed through the efforts of Hobbes, Descartes, among others, who rejected Aristotelianism and that scientists and philosophers alike, the pioneers of the new knowledge about the natural world, departed from the Aristotelian framework. He also writes at great length on the metaphor of nature as machine; unlike this author (Lee, 2012b), he does not see it as an ontological *volte-face*, a crucial component of the new philosophy.

From the standpoint of CCM, this project of excavating and exposing its philosophical foundation accords well with what the very distinguished physician, Zhang Xichun/张锡纯 had written in his essay "On the Relation Between Medicine and Philosophy"—see Fruehauf, 1999.

2. Any reference to "philosophy," "science," "medicine," and other key terms such as "Wholism" will, from now on, be italicized, when they are used in CCM contexts in order to mark the differences between them.

3. This forthcoming volume will contain chapters, among others, on the *Jingluo* Network/the so-called "meridians/channels" (in which *Qi*-in-dissipating-mode operates and whose blockage is the cause of illnesses and pain, according to CCM theory), CCM as Preventive Medicine (the highest expression of *medical* skill), Personhood as a primitive *philosophical* concept (in accordance with Dyadic Thinking which gives meaning to CCM's understanding of illness in terms of a psychosomatic dimension), CCM as Personalised Medicine (which renders Randomised Controlled Trials inappropriate), on *Zheng*/证 and *Fang*/方 (key concepts in CCM diagnostics and therapeutics), the Unity and Coherence of CCM (in terms of its account of the inter-related linkage between *physiology*, illness and therapy), Macro-micro-cosmic *Wholism* (referred to in sinological literature as "Correlative Thinking"), and CCM as *ecosystem science* which all serve to demonstrate the characteristics peculiar and even unique to CCM which are derivative from the *philosophical* and cosmological framework within which CCM is embedded. It will also explore the notion of Integrative Medicine to see if it has meaningful purchase at any level of integration between CCM and Biomedicine.

4. Many other (different) interpretations of ancient Chinese philosophy abound (in English)—one instance of a more recent systematic study is Ziporyn, 2012.

5. See Scheid, 2002 and Sivin, 1987. The status of TCM and its relationship with CCM will be raised in Lee, forthcoming: chapter 11.

CHAPTER TWO

Bibliographical Justification and Clarification of the Main Texts Selected

The exploration of the *philosophical* foundations of CCM, as set out in chapter 1, will consist of two volumes. This volume explores Chinese *philosophy* as found primarily in four Pre-Qin and early Han texts, namely,《周易》/ the *Zhouyi*,《老子》/道德经》 the *Laozi*/ the *Daodejing*,《庄子》/ the *Zhuangzi* and《淮南子》/ the H*uainanzi*; this exploration will show what way the concepts embodied in them are understood primarily in the *Neiijing*, a foundational text in CCM the emergence of which also fell within the same Pre-Qin and early Han period of Chinese history (roughly 1046 BCE– 25 CE).

A major methodological consideration in the historiography of dating an ancient text (such as the first three mentioned above), has to be briefly addressed, as its precise authorship and date of appearance are often unclear. One ought to distinguish between two distinct, though related, aspects of the matter: (a) the actual or part of the content of the text in terms of the notions and concepts discussed, (b) the text in its entirety as a whole mature text. The former (in parts) could predate the latter. One should distinguish between the older/oldest parts of a text (in terms of its content) from the rest of the text as well as the text itself. The issues, surrounding the dating of an ancient text, are not a straightforward matter.

The *Zhouyi*

First, one has to make very clear what names are used in talking about it or parts of it, as usage differs in both Chinese and sinological literature. According to Chinese usage:[1] it contains two parts: (a) the《易经》/*Yijing*, (b) the《

易传》/*Yizhuan*. The *Zhouyi*/《周易》 may be translated as the *Zhou Changes*; its older part (a) may be translated as the *Canon of Changes*, while its second/later part (b) may be translated as the *Yi Commentaries* or perhaps more accurately even as the *Yi Treatises*, but it is also called《十翼》/the *Ten Wings*.[2] Rather confusingly, the name of the text which the Chinese call the *Zhouyi* is rendered normally phonetically in English as the *I Ching* or, more recently, the *Yijing*, and commonly referred to as the *Book of Changes*. This author intends to follow Chinese usage and to adopt the following convention: The *Zhouyi* refers to the extant text which has come down to us and which has two parts. When this composite text is cited in this book, it will simply be referred to as the *Yi*/the *Zhouyi*; when its older part is mentioned, the term the《易经》/ the *Yijing* will be used and when the later part is invoked, it would be referred to as the *Ten Wings*.

The detailed contents are as follows:

The *Yijing* contains (a) the sixty-four hexagrams, (b) their names, (c) the *guaci*/卦辞/*Judgment/Decision of the Hexagrams*, and (d) *yaoci* 爻辞/*Judgment of the Yao*[3] (one for each of the 384 *yao*s).

The *Ten Wings* laid out in sequence are:

1. *Tuan zhuan* 彖传上	*Part I, Treatise on the Judgments of the Hexagrams*
2. *Tuan zhuan* 彖传下	*Part II, Treatise on the Judgments the Hexagrams*
3. *Xiang zhuan* 象传上	*Part I, Treatise on the Xiang*
4. *Xiang zhuan* 象传下	*Part II, Treatise on the Xiang*
5. *Xici zhuan* 系辞上	*Part I, Treatise on the Appended Terms*
6. *Xici zhuan* 系辞下	*Part II, Treatise on the Appended Terms*
7. *Wen yan* 文言 传	*Treatise on the Elaboration of the Words*
8. *Shuo gua zhuan* 说卦传	*Treatise on the Discourses on the Trigrams*
9. *Xu gua zhuan* 序卦传	*Treatise on the Sequence of the Hexagrams*
10. *Za gua zhuan* 杂卦传	*Treatise on the Non-sequence of the Hexagrams*

According to Chinese scholarship, the *Yijing*, since the beginning of the Warring States Period (475–221 BCE), had been received into the Confucian canon. But when did it itself become a mature text? There are three answers in general to this question: (a) beginning of the Western Zhou (1046–771 BCE), (b) end of the Western Zhou, and (c) beginning of the Warring States Period. One Chinese scholar, *Liu, 2008:10 argues for the second view; Smith, 2008 adopts the third.[4]

It is generally agreed that the *Yijing*'s origin is tied up with divination and its techniques (although there is a minority of scholars who disagree with this, and we shall come back to this point later). In the history of

Chinese divination, numerous methods existed, but there were two main ones, which today modern Chinese combines in one word—*zhanbu* 占卜, to refer to the practice of divination in general. Traditionally, *bu* 卜 referred to the practice, especially of the late Shang Dynasty (1600–1046 BCE), although it continued during the early part of the succeeding Zhou Dynasty (1046–771 BCE), of reading the cracks produced in burning specially prepared tortoise shells or ox shoulder blades. Often these lines literally looked like this 卜; that pattern was conveniently taken over as the character/word to stand for this particular method of divination.[5] This practice is sometimes called *guibu*/龟卜which literally means "tortoise shell divination" but which also covers the use of ox shoulder blade. The second major method was *zhan*/占, conducted within the framework of the *gua*/卦 (that is the sixty-four hexagrams of the *Yijing*), using yarrow stalks, *shi*/蓍 to set up the *gua* which was relevant to the situation in hand for which a divinatory outcome was sought. More accurately, this word was used to refer to both the yarrow stalks as well as to the method itself of using such stalks for the purpose of divination; another name for the stalk, also pronounced *shi*, but is written as 筮. The method is called *zhanshi*/占筮).[6] We know for sure just over a century now (since the discovery of the Oracle Bone Script/甲骨文 around the turn of the twentieth-century) that *guibu* existed in late Shang times but that divining by means of *shi* 蓍/筮 had also flourished during late Shang times, if not earlier—see, among other texts, *The Spring and Autumn Annals According to Lü*/《吕氏春秋·勿躬篇》 (239 BCE) and the *Book of Historical Documents*/《尚书·君奭》(compilation of speeches dating from eleventh century to fourth century BCE). We also know today that the names of all the hexagrams were already known, at the very latest, by the late Shang Dynasty.[7] The trigrams and the hexagrams were built upon such techniques and rituals. Apart from the *Zhouyi*, references to both forms of the *gua* existed elsewhere, such as in 《礼记·礼运篇》/the *Liji*, *The Book of Rites* (attributed to Confucius and written during the Spring and Autumn Period (771–475BCE), about the rites of the early Zhou Dynasty). This text recorded that Confucius visited the state of Song to study the *gua* which had existed since the late Shang Dynasty—a difference between these different versions is that in *The Zhouyi*, the 乾卦/*Qian gua* precedes the 坤卦/*Kun gua*, whereas in the late Shang system of *gua*s (the *Gui cang yi*/《归藏易》), the order was the other way round. The *Lian shan yi*/《连山易》 belonging to the Xia Dynasty (2100–1600 BCE) used *gen*/艮 as the lead trigram; however, both had been lost even by the time Confucius himself (551–479 BCE) was born. The oldest parts of the *Yijing* in the *Zhouyi* could be dated to eighth century BCE.

The *Ten Wings* may be regarded as the fruit of the attempt by Confucians to understand and assimilate the *Yijing* into their own system of thought.[8] Its emergence in the form of the *Ten Wings* is separated from that of the *Yijing* by five to six hundred years, making it in the main a work of the late Warring States Period. In the past, Chinese scholarship had not distinguished between them adequately, but for more than half a century, it has agreed that the two parts originated from different periods. Today, in general, scholars agree that the *Zhouyi* with its two parts, as a mature text, appeared to have emerged toward the middle of the Western Han Dynasty, that is, to say it has existed for just over two thousand years only.

What is the exact relationship between the two parts? There is no total consensus, as some scholars hold that their respective contents have nothing in common—the *Yijing* is entirely about divination (up to and including the Spring and Autumn Period, the dominant view regarded it as no more than a divinatory text) whereas the *Ten Wings* is about *philosophy*. Other scholars maintain that their contents overlap and are inextricably entwined because (a) the *Yijing* is itself not simply a divinatory text (contrary to what the early Chinese had believed right up to the Spring and Autumn Period), but also contains *philosophical* and cosmological ideas which the Confucians (though not necessarily Confucius himself) further developed and sophisticated; (b) yet others agreeing with some scholars (such as Xunzi荀子 (c312–230 BCE) who in his book the *Xunzi* held that those dedicated to the text would not use it for divination purposes:善为《易》者不占 (《荀子·大略》) which may be translated as: "Those who truly appreciate the *Yi* would not be using it for the purpose of divination;"[9] they argued that the *Yijing* is really cosmology/*philosophy*, covering branches of the subject such as metaphysics, epistemology, and ethics (in today's terminology). The *Ten Wings* simply carried further this secular orientation away from its original divinatory function to other interpretations and possible functions, relegating the former to the last of four categories (see below) to which a person might understand and use the text. The four categories were: those interested in language would study its terms and phrases; those interested in motion/movement, would look at it from the standpoint of change or changes; those interested in the world of instrumentation would look at *xiang*/象/pictures, while shamans would be interested in using it to divine—see Part I，Treatise on the Appended Words/《系辞上》:《易》有圣人之道四焉:以言者尚其辞, 以动者尚其变, 以制器者尚其象, 以卜筮者尚其占.

The Han philosopher Dong Zhongshu 董仲舒 (ca. 176–ca.104 BCE) was instrumental in getting the *Yi* accepted by the emperor, Han Wudi in 136 BCE, as the leading "Confucian" classic, on the grounds that Confucius

himself was said to have been a devoted student of the text; as a result of such an honored status bestowed by the emperor, it came from then on to be called the *Yijing* (*jing* refers to a classic, canonical text). In addition there was the claim (made on his behalf) that he, Confucius, was the author of part, if not of the whole of the *Ten Wings*. (Do note that the Confucian tradition most certainly did not entertain the view that Confucius's own passionate dedication to studying the text had anything remotely to do with divination; the Sage was known to be against the practice of divination on the rational grounds that divination outcomes were not reliable, and as the quotation from Part I, Treatise on the Appended Words cited above shows, to use the text as a plain divination text is, according to the Confucian tradition, the lowest of four possible uses to which the text could be put.)

This raises the matter about the difference between 经/*jing* and 传/*zhuan*. The difference lies in this—the former is canonical, the latter is a treatise written about such a canonical text,[10] elaborating, drawing out, and even extending its ideas, but never in a critical spirit according to tradition. It is rare that a *jing* and its *zhuan* are published together between two covers; the *Zhouyi* is unique in that the *Ten Wings* and the core (canonical text) are put together as a single tome. It was called the *Zhouyi*, although before early Han times, it was simply called the *Yi*, because it was the only surviving *Yi* in Chinese history—the two other works on the subject of *yi*, as already observed, having been lost even before the birth of Confucius. Why it came to be called the *Zhouyi* was, probably, based on more reasons than one. According to tradition, members of the ruling house who founded the Zhou Dynasty had something to do with it. A more theoretical reason involved the meaning of *zhou* /周—apart from being a surname—it is used to delineate a period of time during which certain movements or changes take place in Nature which eventually come round again in a cyclic manner. *Zhousui*/周岁means a year in terms of age, *zhoutian*/周天 in ancient Chinese astronomy refers to the 360 days in which Earth took to complete its cycle of movement. *Zhou er fu shi*/周而复始 refers to what may be called Cyclic Reversion, a notion which as we shall see later is absolutely fundamental to Chinese cosmology and *philosophy*. Furthermore, this text puts the *gua* for *Tian*/Heaven (乾/*Qian*) as the lead *gua*, the beginning of the cycle[11]—this *gua* represents *yang qi* at its highest point, and could imply that the Zhou Dynasty itself was about to attain its highest strength. Hence to call the text the *Zhouyi* would be very appropriate.

Tradition has it that "three sages" had a hand in creating the *Yijing*, but it cannot agree on who they were. One version said it was Fuxi/伏羲, who invented both the trigrams/八卦 and the hexagrams which are referred to

respectively also as the *jinggua*/经卦 and the *biegua*/别卦; (b) it was Shennong 神农, the Divine Husbandman, who invented the hexagrams; and (c) yet another version said that it was King Wen/周文王—a founder member of the Zhou Dynasty, who was responsible for the hexagrams as well as the explanatory text which went with each of them called *guaci*/卦辞, not to mention a statement to each of the six components in the configuration of a hexagram, called *yaoci*/爻辞; (d) another view attributed the *yaoci*, to the Duke of Zhou, a son of King Wen, a veritable culture-hero in Chinese history. Modern scholarship, however, considers Fuxi and Shennong, on the whole, to be legendary if not mythological personages, but holds that whether King Wen invented the hexagrams or not, it is plausible to postulate (even in spite of their high degree of mathematical sophistication) they could have emerged at the end of the Shang and the beginning of the Zhou Dynasty. The consensus of contemporary opinion is that the grammar of the *Zhouyi* (in its older part) was already well established by the fourth century BCE. For instance, R. Smith, 2008:30 says:

> . . . by the fourth century BCE at the latest the essential grammar of the *Zhouyi* had been well established. Its languages included wordless symbols (hexagrams, trigrams, and individual lines), as well as written texts (hexagram names, judgments, and line statements). What the next few centuries would bring was a substantial increase in the lexicon of the *Changes*, together with a number of commentaries that amplified the interpretive framework of the *Zhouyi*.[12] These additions, in turn, greatly expanded the interpretative possibilities of the document.

As for Confucius's own hand with the *Ten Wings*, doubt was already cast on it by the distinguished Song scholar-official, Ouyang Xiu欧阳修 (1007–1072 CE). Today, scholars in general are of the opinion that they do not come from a single hand, but from various authors expounding Confucian values, whether these were descendants of Confucius's original disciples or not, and whether what they wrote were handed-down reports of what Confucius's disciples had recorded about the Master's comments or not. The *Ten Wings* is now regarded as a Western Han (206 BCE- 9CE) compilation.[13]

With regard to the issue whether the hexagrams were invented before the trigrams or vice versa, if tradition were adhered to, the trigrams would have preceded the hexagrams as Fuxi was the first of the three legendary sovereigns/三皇 of ancient China, said to have lived during the mid-twenty-ninth century BCE. He was succeeded by Shennong. Among many stories about Fuxi is the reproductive narrative that he and Nüwa/女娲, though siblings, nevertheless copulated and engendered offspring, of which the Chinese (and

other human beings) were all their descendants. (chapter 9 explores this myth as instantiating the Contextual-dyadic Mode of Thinking.) Taking the logic of this narrative at its face value, one could argue that he would have preceded Shennong, because, although also legendary, Shennong was credited with the invention of agriculture and established the use of herbal drugs, not to mention the hexagrams. The acknowledgement of procreation as a process would have emerged even as tribal society based on hunting and gathering emerged. Following this logic, the trigrams would have come before the hexagrams.

Regarding the claim that King Wen invented the hexagrams, if this were correct, it would distinctly imply that the trigrams preceded the hexagrams, as King Wen (no mythological character) was a founding father of the Zhou Dynasty and lived long after that period in Chinese history called the Three Sovereigns and Five Kings.

Looking at the relationship between the trigrams and hexagrams outside of the mythological or even historical context, one could argue that it would seem more logical that those ancient Chinese (whoever they might have been) would have attempted a configuration of the trigrams before they stacked them up according to some pretty sophisticated mathematical rules of permutation to create the hexagrams. Also there appears to be some internal evidence to support this derivation which can be found by analyzing a trigram. It consists of three *yaos*/爻: the bottom *yao* stands for Earth, the top *yao* for Heaven, and the middle one for Humans. The triad of Heaven, Earth and Man was called *sancai*/三才, the Three Talents/Powers forming a powerful cluster of concepts in Chinese thought. Each exercised its own domain of influence but that of Humans was inescapably affected by the other two, while it itself did not affect the other two domains (that is, until of late, global climate change being a spectacular first in the history of humankind). Together they form a *Whole*,[14] encompassing the entire universe. However, in each domain, *yin qi*/阴气and *yang qi*/阳气 existed, adding up to a total of six powers, operating in the universe. Each *yao* in the six *yao* hexagram represents one of these six "powers." As a hexagram is the result of stacking one trigram upon another, no other kind of "gram" would be meaningful, such as a "pentagram" or a "septigram." With this as a theoretical base, we can see that there are only sixty-four possible permutations/hexagrams; and given that each hexagram has six *yao*s, the total number of *yao*s is then 384. This in turn means that the *Yijing* had things to say about 384 specific conditions through 64 sets of 6 *yao*s each.[15]

Another relevant piece of evidence may be found in texts which chronicled events covering the period 722–468 BCE, such as the《左传》/

The Chronicle of Zuo (compiled not later than 389 BCE during the Warring States Period), as earlier observed, which frequently mentioned and recorded the use of the trigrams in divinatory practices. Another text, 《国语》/*The Discourses of the States* (chronicling events of the Western Zhou Dynasty until 453 BCE), is said to be somewhat later than *The Chronicle of Zuo* (and if relied on to date the *Yijing* would push the period of compilation to middle of the late Warring States Period[16]) also gave similar examples.[17] Although these two texts and the *Yijing* emerged fairly near in time, nevertheless the former bore witness to the fact that the latter raised a subject matter which had already been in the public domain. Note also that in the *Yijing*, the hexagrams are named according to those of the trigrams.

Although the Mawangdui/马王堆 silk texts (discovered since the early 1970s) do follow a different sequence in presenting the trigrams from that of the *Yijing* and show some other differences from the latter, nevertheless, scholars are agreed that (1) they are not later than the received version and (2) they, too, are compatible with the view that the hexagrams were created by stacking two trigrams, one upon the other.

In view of the evidence cited above, one could make a plausible case for holding that the trigrams had an independent existence from the hexagrams, and that they formed the basis for the creation of the latter.

Daojia Texts

So far, we have been looking at the *Yi* for three reasons:

(a) It is the earliest extant as well as the most influential and seminal text in the development of nearly all domains of Chinese intellectual life and activity.
(b) Down the millennia, many outstanding physicians had insisted on the necessity of studying the *Yi* for a proper understanding of CM. Other physicians, through the centuries, who aspired beyond mediocre competence had/have adhered to such dicta. It is also the case that even if a particular medical book did not explicitly mention the *Yi*, nevertheless, the work could not be fully understood without reference to this "divination" text and its influence upon *medicine*—one instance is the famous Han physician, Zhang Zhongjing/ 张仲景(150–219 CE) and his opus the *Shanghan zha bing lu* /《伤寒杂病论》. Naturally, all physicians must know the foundational text in CCM and this is the *Neijing*, which is said to be a Daoist text. We must, therefore, say something about Daoism before we can go on to explore the relationship between Daoism and Daoist concepts and CCM.
(c) Although the *Laozi*, the *Zhuangzi*, and the *Huainanzi* might not have explicitly mentioned the *Yi*, Chinese scholarship has held, down the ages and holds today, that these *Daojia* texts cannot be understood without an understanding of the *Yi*. The chapters which follow will try to show the basis of such a claim.

This section addresses the following issues:

1. How the term "daoism" is to be understood for the purpose of clarifying the relationship between Daoism and CCM. In this context, one must distinguish between *Daojia* and *Daojiao*.
2. Why for the limited discussion of this book, only three so-called Daoist texts (the *Laozi*, the *Zhuangzi*, and the *Huainanzi*) are chosen for exploring their relationship with the *Yi*.
3. If the distinction mentioned in 1 above is sound, then what do the texts mentioned in 2 above have in common which can be said to support the view that Daoism is *philosophy*, not a mere religion.

One must distinguish between *Daojia*/道家 and *Daojiao*/道教, which Chinese scholarship recognizes, but which is sometimes challenged by sinological literature on the subject of Daoism. "Jiao"/教 means "religion"; hence *Daojiao* clearly refers to the religion called Daoism. On the other hand, *Daojia* is commonly understood to refer to Daoism not as a religion but as cosmology/*philosophy*. The *Neijing* itself is said to be a "Daoist" text, clearly not in the sense that it enjoys canonical status in the domain of Daoist religion, but that as a foundational text in CM/CCM, it embodies certain ideas which can be said to belong to *Daojia*. The term *Daojia* was coined, it is said, by Sima Tan/司马谈 (ca. 165–110 BCE), a historian of the Western Han Dynasty, and used also by his son, Sima Qian/司马迁 (ca. 139–86 BCE), who continued the book already begun by his father, which came to be called the *Shiji*/史记/ the *Historical Records*. In general, the term 家 is translated as "School"—one talks of the *Rujia*儒家 (the Confucian School), the *Yinyangjia* 阴阳家 (the *Yinyang* School), the *Fajia* 法家 (the Legalist School). The *Rujia* focused on moral/social/political ideas; the *Fajia* on using the law as the key concept and tool in governing society; the *Yinyangjia* (unfortunately the original text(s) were lost with only some fragments extant), as far as one could determine, focused on the *Yinyang* pairing. On this analogy, whether one deems such Schools to deal with a subject matter which can be called "philosophy" is immaterial, as the issue is not one about advancing stipulative definitions in order to "win" an argument; definitional moves of such a kind constitute a mere sleight of hand. Furthermore, although their respective teachings differed fundamentally, nevertheless, they were all predicated upon ignoring the existence (or the relevance to their preoccupation) of a transcendent being (god/gods) whose commands must be obeyed. The validity of their teachings was not grounded in the supernatural; indeed, if one prefers not to use the term "philosophy" to characterize these Schools,

one could opt for an alternative term, and call their teachings naturalistic or humanistic, in contrast to a world-view which embraces the supernatural orientation. ("Humanism" as well as "Naturalism" are here used to refer to any world-view which is arrived at through the use of human reason alone, without revelation.)

The term "Daoism" in English deserves closer attention as it suggests a set of ideas which anyone who calls him/herself a "Daoist" would share in common, while, perhaps, acknowledging at the same time important differences between various versions of "Daoist" thinking and practices under the broad umbrella "name" of "Daoism." In English, it is meaningful, say, to invoke the term "Protestantism," but that term hides many differences amongst the numerous sects in that large branch of Christianity which defines itself against another big branch of the same religion called Catholicism.[18] In European languages, the suffix "ism" can conveniently be invoked to serve the purpose just outlined. But in the Chinese language and Chinese culture, such an easy maneuvre is not readily available. One can speak of "the Dao" (that is, the "Dao" which the *Laozi* talks about); one can speak of applying "the Dao" to understanding different domains of theory and praxis, such as "the dao of rulership"/君主之道/*jun zhu zhi dao* (which the *Huainanzi* was ultimately interested in), the "dao of the military" (as in Sunzi's *The Art of War*), the "dao of medicine " (医道 *yidao*).[19] In English, one can meaningfully say that the *Neijing* is a "Daoist" text; however, in Chinese, one must say that it is a "Daojia" text, to distinguish it from say *The Correct Classic*/*Zhengyijing*/《正一经》[20] which is considered to be a "Daojiao" text—one cannot simply blur the differences between these two kinds of text by calling them "Daoist" texts as in English. Sometimes, "Daojiao" texts are also referred to, for short, as "dao shu," but the context always makes it clear that these texts are "Daojiao" and not "Daojia" in character.

Daojia may or may not be a School; call it what you like, but it is not grounded in the supernatural and in a god of some description with temples, monks and rituals; in contrast *Daojiao* must be as it had/has transformed Laozi into a god, whose statue sits upon an altar in a temple, surrounded by burning joss sticks. The traditional account of *Daojiao* traced its formal foundation to the Eastern Han Dynasty, several centuries after the first appearance of the *Laozi*/the *Daodejing* to someone referred to as Zhang Daoling/张道陵 born in 34 CE. His surname was Zhang and his given name was Ling, but as he founded the Daoist religion, he became known later in history as Zhang Dao Ling. In its earliest days, this religion called itself the *Dao* of Five Bushels of Rice/五斗米道[21] or the *Dao* of the Heavenly Master/天师道, while claiming Laozi as its original teacher, and indeed, proclaiming him to be a god. Its basic texts therefore included the *Laozi* among others as these emerged

following its foundation; this religion tended to emphasise an other-worldly detachment from reality (脱离现实), achieving immortality via the search for elixirs (*lian dan xiu xian*/炼丹修仙).[22]

It is said that Sima Tan in using the term *Daojia* and in his brief account about it did not mention the name of Laozi; neither did he refer to the text called the *Laozi*; indeed he did not mention the word *dao* at all, apart from it being part of the term *Daojia*.[23] However, it is acknowledged that the two Sima (father and son) would undoubtedly have meant all the same that the *Laozi* belonged to *Daojia*, that it was in two parts, one about *dao* and the other about *de*/德 even if it is true that unlike contemporary scholars, they would have accepted the traditional account about the author who was called Laozi, or Li Dan/李聃. Whatever the agenda of Sima Tan behind his use of the term, it had come to be associated with the rational and the naturalistic which can be found in the Dao of the *Laozi*, distancing itself from the activities of certain practitioners called the *fangshi*方士[24] as well as somewhat from that perspective called *Huanglao*/ 黄老 about which the Mawangdui excavation in 1973 of an early Han tomb revealed some fragments.[25] We have already earlier observed that the rationalist/naturalistic tendency had begun as early as the Spring and Autumn Period; no doubt, Sima Tan was continuing this orientation in Chinese thought, thereby excising what might smack of the supernatural and the superstitious.

It is, therefore, fair to observe that texts such as the *Laozi* and the *Neijing* regarded as belonging to *Daojia* would be very different in character from say *The Correct Classic*. However, acknowledging their differences would not necessarily lead to a denial that *Daojiao* does share some common concepts with them. Our pre-occupation here is simply to say that one could distil from the former set of texts a cluster of cosmological/*philosophical* concepts which have made contribution to the development of the naturalistic mode of thinking down the millennia, a mode, to which the Confucian humanist tradition was hospital when it developed the *Ten Wings* of the *Zhouyi*.

This observation is very much in keeping with the assessment which Isabelle Robinet (the most respected Western scholar of "Taoism") has given of the alleged distinction. Robinet, 2008 writes:

> The main difference between *daojia* and *daojiao* is perhaps that *daojiao* primarily aims at establishing a connection with the sacred, either as a relationship with deities and spirits or as the attainment of personal transcendence. The question of immortality is related to this point. . . .
>
> The *daojia* dimension of Taoism is absent in several Taoist trends and texts, and others appropriated the *Daodejing* without much regard for its many possible meanings. The *Xiang'er* [想尔] commentary exemplified this attitude. Nevertheless, the philosophical spirit and features embraced by the term *daojia*

> are apparent throughout most of the history of Taoism, beginning with the *Taipingjing* [《太平经》] *Scripture of Great Peace*), which may be the earliest extant *daojiao* text. With YinYang and *Wuxing* [五行] cosmology, the *daojia* has given Taoism one of its most basic conceptual frameworks, without which no religion can have a structured and coherent worldview.[26]

For the very limited purpose of this discussion, only three key *Daojia* texts will be briefly examined—the *Laozi*《老子》/*Daodejing*《道德经》, the *Zhuangzi*/《庄子》, the *Huainanzi* /《淮南子》. The last is the least problematic from the biographical and bibliographical point of view, as its origin and date can be ascertained more or less precisely. It is a Western Han (206 BCE-9 CE) text, which was sponsored by the king of the state of Huainan, a grandson of the founder of the Han Dynasty, called Liu An 刘安 (179–122 BCE). It is said, some thousands of scholars gathered under his roof and patronage. Naturally, not all of them would have had a hand in writing the pieces finally assembled as the *Huainanzi*; only eight of them have been identified as the most likely contributors to the volume. Although primarily *Daojia* in orientation, it also incorporated material which covered Confucianism, Mohism, Legalism, and the Yinyang School. Its contents included politics/government, economics, military, astronomy, geography, agriculture, biology, music, not to mention even some myths and legends. For this reason, the text has been regarded by some scholars as something of a mixed bag, which in one sense, would not be surprising, as it was intended to be a compendium of knowledge based on texts down the centuries. However, in spite of such a perception, it remains a coherently presented and elegantly written *philosophical* piece of work.[27] Liu An's preoccupation was not solely an intellectual one; on the contrary, he was hoping to influence the central government, the Emperor Wu, his nephew. Unfortunately, in the end, he was charged with plotting against imperial rule, for which he duly committed suicide; his state was dismantled as a result, and Han Wudi (156–87 BCE) went on to establish Confucianism as the official ideology of the Han Dynasty.[28]

The *Zhuangzi* and the *Laozi* are said to be texts which emerged during the Warring States Period. From the biographical standpoint, the former is relatively more straight-forward, as its putative author, Zhuangzi, is acknowledged to be a historical person who lived some time during the fourth century BCE (between 350 and 300 BCE), reputed to be a *Daojia* figure. However, contemporary scholarship would at best credit him with some of the chapters in the text and also claims that five authorial voices could be detected in it.[29]

In contrast, the *Laozi* is even more problematic, as its putative author, Laozi was over the centuries and is today regarded (in some quarters) at best

as a legendary if not mythical or fictional character, in spite of Sima Qian's attestation to the contrary in his *Shiji*. However, whoever Laozi was (the very name seems to refer to a kind of general sage, rather than a specific individual, some have argued), and whether he was mixed up with an astrologer called Dan 聃, are issues which appear, in one sense, irrelevant to the existence of the text itself. Up to now, scholarship, on the whole, agrees that it is not the handiwork of one author, whoever he might have been as some of its contents referred to things which happened at the time of Confucius, others to much later matters. (However, this view, at least, among Chinese scholars may be about to change in view of the discussion to follow.) This scholarship is informed by a major discovery in an archaeological excavation which has excited scholars throughout the world. This involves excavation of one of the three early Han tombs at Mawangdui near Changsha in Hunan Province during which two complete editions of the text were uncovered in the form of two versions written on silk, one of which could be dated to not later than 206 BCE, and the other to between 206 and 196 BCE. These enable scholars to date the *Laozi* to the Warring States Period. However, twenty years later in 1993, another excavation took place which involved the *Guodian* Chu bamboo slips/郭店楚简/ the *Guodian chu jian* found in one of the Chu tombs near the village, Guodian, in Hubei Province. This tomb could be dated to the Warring States Period (between mid-fourth century and early third century BCE, or roughly to before 300 BCE). According to one interpretation, this helps to reinforce the evidence found at Mawangdui that the *Laozi* text is a Warring States piece of writing.

That the Chu tomb is dated to the middle of the Warring States Period is not in doubt,[30] but is it so clearly and unproblematically the case that the version of the text was also a Warring States composition? At least, scholarship in China today appears to have come round to the view that it is older than that. For instance, one scholar,[31] who in fact participated in the excavation twenty years ago, now holds that the Guodian version could be put roughly to the same period as Confucius himself. The evidence for such a view includes the following: (a) Difference in content between this version and the extant version(s)—while the latter contain criticisms of Confucians and their thinking, the former does not. If the teachings of the Guodian text were more or less contemporaneous with those of Confucius himself, then this would explain why such a text would not have anything to say about the matter, as the teachings of Confucius did not attain any significance until well after his death. (b) An earlier date for the Guodian version could cast light on some puzzling features about the purported author, his name, as well as when such a person lived. Confucius himself was said to

have sought out someone called Li Dan 李 聃 to learn from him, whom we take to be the person whom history has called Laozi—at least according to this account, such a person did exist and was alive when Confucius himself was living; and as Confucius did try to learn from him, one could infer that he had something of importance to teach others, namely, those teachings which posterity called the *Laozi*. Yet tradition has it that a person called Laozi left the service of the Zhou court to pursue his own life of dedicated reclusion, passing through a pass called Hangu/函 谷 during the Warring States Period. The officer in charge of the pass pressed him to write down his thoughts before he passed through the pass to the new life ahead of him. This person was the official Dan (太史儋 *taishi* Dan)—note that this person was also called Dan but the characters for the two similar sounding names are quite different. Now if one were to postulate that *taishi* Dan already was aware of the work of Li Dan (李聃), then he could simply add more to the extant text, incorporating some criticisms of the teachings of Confucius into the text which he then supposedly left behind for the official at the pass. The person whom Confucius sought to learn from and the *taishi* Dan were separated by approximately two hundred years. However, by the time Sima Qian wrote his history, the Guodian text of the *Laozi* had probably already been lost, people had by then got the two Dans confused—as a result, Sima Qian faced with such a tangle of confusion which he was not in a position to disentangle, simply said that the author of the *Laozi* could have lived up to be to two hundred years old or more modestly to about a hundred and fifty years old. Two important Chinese scholars/*philosophers* of the last century Feng Youlan 冯友兰 and Hu Shi 胡适 disagreed on the date of the *Laozi*, with Feng claiming it to be a Warring State work and Hu that it was earlier. It looks as if Chinese scholarship today seems to side with Hu rather than Feng. Maybe, the said Laozi or Li Dan was not after all legendary, that the Guodian text could, single-handedly even be his handiwork. This would, no doubt, not be the last word on the subject of his identity and the question of authorship of the Guodian text as well as the text called the *Laozi* commonly dated to the Warring States Period. We never can rule out whether a new archaeological find may not be on the horizon which can either reinforce this interpretation or undermine it completely—we can but wait and see.

Why have these three texts been selected for special attention? This is because, as mentioned earlier *en passant*, they are perceived by Chinese scholars down the ages to have contributed toward a powerful tradition of Chinese thinking beginning with the *Yijing*, enriching a perspective which is said to be peculiarly Chinese for understanding/apprehending the world both *philosophically* and *scientifically*. They see the *Laozi* to be a continuation/extension

of the cosmological/*philosophical* content and methodology embedded in the divination text. This may be spelt out a bit more by noting that the *Laozi* itself had influenced those Confucian scholars who had a hand in writing the *Ten Wings* of the *Yi*; as far as Han scholarship in *Yi* studies was concerned, it had, in a sense, rendered the *Laozi* and the *Yijing* to be compatible and integrated *Daojia* thinking with the latter—they reckoned that the Dao was at one with the principles underlying the *Yijing and the Zhouyi*.[32]

The *Zhuangzi* is considered to be the second foundational text of *Daojia* and at least parts, if not all of it, are said to accord with the *Laozi* in its understanding of the Dao. As Robinet has pointed out, these two texts concur in giving a new meaning to the term "dao" as Ultimate Truth—nothing preceded it and it was the source of everything, and was therefore primal in this sense. It cannot be named as naming it would only result in limiting it. As regards its implied *epistemology*, the Dao advocates that the knower must attempt to get rid from him/herself all obstacles that stand in the way of grasping the Dao, such as one's prejudices, emotions, desires, ambitions, and pre-occupations which could distort one's apprehension of the reality that the Dao embodies. That is why stillness and tranquillity as the appropriate states of mind were so much emphasised.

At the same time, the *Zhuangzi* and the *Huainanzi* spell out a theme endemic in both the *Yijing* and the *Yi* and the *Laozi* but which was not explicitly raised in them, namely, the notion of *Qi*/气 which is best left untranslated for the moment, until we discuss it in chapter 3.

Similarly, it is appropriate here only to raise, but leave for later exploration (chapter 4), another key concept which informs these selected texts, that of *Ziran*/自然 which occurs so prominently and explicitly in the *Laozi*, though only implicitly in the *Yijing*. Again there is no point in translating it right now as a few words cannot do it justice.

The cluster of concepts identified above—the *Yi*/易 (its fundamental meaning in terms of change), the Dao, *Ziran*, *Qi*, *Yinyang* (which the *Laozi* only mentioned once), as well as that of *shi*/时and *fang*/方which mercifully could be translated as "time" and "space" without running the danger of being too misleading—are all to be found in these texts, either explicitly or implied. Furthermore, they are central to a proper understanding of what kind of *science* and what kind of *medicine* CCM really is.

Selected Texts and Their Intimate Link with CCM

The preceding two sections have gone through some of the more important reasons for focusing on the texts as foundational to an exploration of Chinese cosmology/*philosophy*. Admittedly, the ultimate justification for concentrating

on them is their link with the *Neijing* and other key medical texts as they are, in the main, all *Daojia* texts. However, so far we have omitted to mention the single most relevant reason for opting to focus on three of these four texts, namely, the *Yi*, the *Laozi*, and the *Zhuangzi* as key to understanding the roots and profundity of CM (what today may be called CCM) as understood through the ages.

Let us take a look at the *Yi* and its influence on CCM thinking, other than the *Neijing*, beginning with the Han Dynasty. Zhang Zhongjing's *Shanghan zabing lun* toward the end of the Han Dynasty, considered by scholars to be a key innovative work in the history of CCM, cannot be understood without a reference to the six *yao*s of the *gua* as hexagram, upon which he modeled his diagnosis of illness via the three *yang jing*/阳经 and three *yin jin*/ 阴经 (六经辨证/*liu jing bianzheng*). Coming to the Jin 晋Dynasty (265–420 CE), one could mention Huangfu Mi/皇甫谧 (215–282 CE) who not only was a noted literary talent but also an eminent physician (putting acupuncture on the map) and whose volume《帝王世纪》/*Diwang shiji* is said to be rooted in the *Yi*. Coming to the Tang Dynasty (618–907 CE), one cannot overlook the comments of 孙思邈 Sun Simiao (581–682? CE), acknowledged to be "the king of pharmacology"/药王. In the first chapter of his first great opus *Essential Prescriptions Worth a Thousand Pieces of Gold for Meeting All Emergencies*/《备急千金要方》/*Beiji qianjin yaofang*, entitled "论大医习业"/"Discourse on the education of a superior physician," he mentioned the *Yi*, among others, as an essential text for intensive study, should one aspire to transcend mediocrity: ". . . 并须精熟, 如此乃得大 医."

During the Song Dynasty (960–1279 CE), the appearance of the familiar *Yinyang* icon of the "black" and "white" fishes (the *Liangyitaijitu*/ 两仪太极图) is sufficient evidence to testify to the persistent influence of the *Yi* in all domains of knowledge including *medicine*.

For the Ming Dynasty (1368–1644 CE), one may invoke two of its famous physicians. The first is 孙一奎/ Sun Yikui (1522–1619) who wrote: " . . . 深于《易》者, 必善于医; 精于医者, 必由通于《易》. 术业有专攻, 而理无二致也," rendered by this author as:

> If one has a deep understanding of the *Yi*, then one necessarily is good at being a physician; but if one were to possess exceptional command of medicine, then that knowledge and expertise must have come from a thorough understanding of the *Yi*. Although one cannot reach commanding heights in all domains, yet within any one domain of which one is in command, theory and practice must rest on the same underlying principle.

This passage is found in a chapter significantly entitled "不知易者不足以言太医论"/*Discourse on how it is impossible to be a superior physician without knowledge of the Yi*, in his work called《医旨绪余》/*Yi zhi xu yu*.

The second is Zhang Jingyue/张景岳(1563–1640). In *Lei jing fu yi*/《类经附翼》is a chapter entitled "Principle concerning medicine and the *Yi*"/ *Yi yi yi*/《 医易义》/, in which he wrote: 天人 一理者, 一此阴阳也; 医易同源者, 同此变化也.岂非医易相通, 理无二致?可以医不知《易》呼? This author renders it as:

> *Tian* (in this context including Earth) and Humans live under a single principle, that is the law of *Yinyang* in Nature. Hence medicine and the concept of *yi* both draw from the same source and as a result, they involve the same patterns of change. Does this not then mean that (the theory and practice) of medicine and *yi* are inextricably linked, that the same principle underlie them both, that one cannot be a physician without knowing the *Yi*?

Also in the Ming Dynasty, Li Shizhen/李时珍 (1518–1593), produced a monumental work on Chinese *materia medica*, called *Ben cao gangmu*/《本草纲目》. This work cannot be understood without bearing in mind the framework within which it was constructed, components of which include the *Yi* and *Yi* related concepts such as Macro-micro-cosmic *Wholism* (*Tianren-heyi*/ *Tianren-xiangying* commonly translated as "correlative thinking" in sinological literature), *Yinyang-Wuxing*/阴阳五行.[33]

From the Qing Dynasty, one may cite an eminent physician, Huang Yuanyu/黄元御 (1705–1758). In chapter 1 of one of his numerous books《四圣心源》/*Si sheng xinyuan*, he wrote: 善言天者, 必有验 于人, 然则善言人者, 必有验 于天矣。天人一也, 未识 天道, 焉知人理 which this author renders as:

> On the one hand, those knowledgeable about astronomy (matters pertaining to the heavens) would also have experience of human affairs while, on the other, those knowledgeable about human affairs would also know at first hand astronomy. As the macrocosm (Heaven and Earth) and the microcosm (Humans) form a *Whole*, if one were ignorant about the *dao* of Heaven (and Earth), how could one be knowledgeable about the principles which govern human conduct.

Indeed, the quotation from Huang Yuanyu implies that the three texts, the *Yi*, the *Laozi*, and the *Zhuangzi* were in the mind of the author (and of fellow Chinese through the ages, as he was no pioneer in this matter), seamlessly linked them together, as can be seen in the writings of Sun Simiao of the Tang Dynasty. In the text from which we have earlier quoted, namely, "Discourse on

the education of a superior physician," he wrote: 不读《庄》《老》, 不能任真体运, 则吉凶拘忌, 触涂而生, which this author renders as:

> If one does not know (thoroughly) the *Zhuangzi* and the *Laozi*, one would not really grasp the Dao or understand the *Laws of Nature* governing the processes of change and transformation embodied in *Wanwu*/万物. As a result, one would not readily appreciate the constraints imposed by what is permissible (and therefore propitious) and what is not permissible (and therefore unpropitious); such ignorance leads one to run everywhere into obstacles and problems.

In CM through the ages, should a physician aspire to be less than mediocre or merely competent, his education must include the three foundational texts, perceived to be *Daojia* texts, namely, the *Yi*, the *Laozi*, and the *Zhuangzi*. This book simply follows this ancient tradition.[34]

Conclusion

The first section of the chapter has argued for the following claims:

1. One must be very careful in the way in which one refers to the text commonly called the *Zhouyi*/*I Ching* making it clear which part of this composite text is being talked about and under what name. This author has opted for the Chinese (rather than the sinological) convention of referring to the composite text as the *Yi*/*Zhouyi*, the older part as the *Yijing*, and the later part, the *Yizhuan*, as the *Ten Wings*.
2. Even if the entirety of the *Yijing* cannot be dated to the beginning of the Zhou Dynasty, it remains correct to observe that Confucius (551–479 BCE) and no doubt other people, too, already were studying it. Hence, it would be reasonable to conclude that its existence would have pre-dated the birth of Confucius, even if cautious scholarship might not wish to endorse that King Wen and his son at the beginning of the Zhou Dynasty had a hand in contributing to it.
3. It is undoubtedly correct to say that the *Yijing* is a divinatory text, that the *Ten Wings* though not intended to aid divination, could be said to be inextricably bound up with it, and that for nearly two millennia, the *Zhouyi* as a whole would have been used in the activity of divination.
4. However, in spite of this undeniable function as a divinatory text, it remains correct to observe and to argue that the process of secularization in Chinese culture had begun as early as the Spring and Autumn Period, when scholars began to see the *Yijing* as something more than a divinatory text. What more it purveyed would be examined in the chapters that follow.

The second and third sections have argued for the following claims:

5. *Daojia* should be distinguished from *Daojiao*; that this distinction is sound in spite of the practice in sinological literature to use the umbrella term "Daoism/Taoism" to cover both the cosmological/*philosophical* and the religious components.
6. The key ideas which inform CCM in its foundational text, the *Neijing*, come primarily from *Daojia* and not *Daojiao*.
7. Four texts have been singled out for discussion—namely, the *Yi*, the *Laozi*, the *Zhuangzi*, and the *Huainanzi*—because it will be argued in the remainder of the volume that they share a cluster of key concepts, some of which are dealt with explicitly and others are implied, but without which the so-called *Daojia* mode of thinking, in general, and the CCM mode of thinking, in particular, cannot be understood.
8. Historically, this linkage has been explicitly made, at the latest, since the beginning of the Han Dynasty. For instance, the *Huainanzi* made it clear that these texts, among several more (some of which though named had now been lost since Han times and others, though relied upon had not been named) had played a role in articulating the themes and their understanding within its own presentation and structure. The *Huainanzi* used what it called the "roots" and "branch" system in classifying its chapters, the first eight coming under the "roots" heading, as they dealt with the Dao, and the remaining falling under the latter category as it dealt with the application of the Dao in particular domains and contexts. However, as far as the authors of the *Huainanzi* were concerned, the *Laozi* was so well-known that they had not bothered to mention it explicitly in chapter 1 which was no more and no less than their setting out an account of the Dao. The *Zhuangzi* was mentioned in chapters 2 and 7 ("roots" heading), whereas the *Yi* was mentioned as falling within the latter category of chapters.[35]

The third section makes the following important point:

9. The single most relevant reason for opting to concentrate on three of those four texts lies in the undeniable fact that the tradition of CM/CCM itself has singled them out for special mention, as texts which could not be ignored should one wish to understand the *medicine* and to rise above mediocrity as a practitioner of that *medicine*.

Notes

1. See *Liu, 2008: 9; *Mou, 1988: 6. Sinological writing appears, on the whole, to follow a different convention—see Smith, 2008: 37, 30; Wang, 2012. Smith says that the received text of the *Yijing*, which gained imperial approval in 134 BCE, consisted of two parts, the much older core part and the later material called the *Ten Wings*; he implies that he is calling the older core part the *Zhouyi*. With this convention, Wang 2012: 63 appears to follow Smith (although neither in the text nor the bibliography of her book, is Smith, 2008 mentioned); she writes:

As is customary, we can call the core part of the text the *Yi* or *Zhouyi* ("the *Yi* of the Zhou Dynasty"), the commentaries on it the *Yizhuan* ("*Yi* Commentaries") and the two together the *Yijing* (the *Classic of Yi* or the *Book of Changes*).

However, Shaughnessy,1999: 292 has written that texts attributed to Zhou Gong and his father King Wen who lived at the beginning of the Zhou Dynasty "include the *Zhouyi* 周易 (Zhou changes; the earliest stratum of the work better known in the West as the *Yi jing*易经, Classic of changes). . . ." It seems that up to a point Shaughnessy agrees with the Chinese convention that the older part is called the《易经》/*Yijing*. However, at the same time, according to the Chinese convention, as the *Zhouyi* 周易 contains the《易经》/*Yijing* as well as《易传》/the *Ten Wings*, King Wen and his son Zhou Gong could not have been responsible for the *Ten Wings*, as these two personages lived well before the *Ten Wings* were written. It makes sense to say that they could have been responsible only for the《易经》/*Yijing*. Furthermore, what the West calls the "the *Yi jing*易经, Classic of Changes" or what is commonly in English called the "*I Ching*" contains both the earliest stratum as well as the *Ten Wings*. Wu, 2003: xxi simply says that the "*Yi Jing* is composed of the *Jing* proper and ten literary works that elaborate and expand on it." For all these reasons, this author prefers to follow quite straightforwardly the Chinese convention.

2. There is this view held by some Chinese that the *Yizhuan* is rather like adding wings to a tiger (如虎添翼). This is probably the source of the term *Ten Wings*.

3. This book prefers not to translate the term *yao*爻 as "line" and to leave it untranslated, as "line" is not unproblematic. All that the reader needs to bear in mind is that a *yao* can be of two kinds, a *yin yao* (- -) or a *yang yao* (—); that a trigram has three of them in any combination of the *yin* and the *yang yao* and that a hexagram has six of them.

4. R. Smith, 2008: 30 says that "by the fourth century BCE at the latest the essential grammar of the *Zhouyi* had been well established." (Bear in mind that by the *Zhouyi*, he is referring to what this book calls the *Yijing*.) By including the operative phrase, "at the latest," Smith's view may be said to be not incompatible with that of Liu, 2008.

5. For a short and accessible read on the subject, see Lee, 2008 on the nature of the Oracle Bone Script; *Wu, D., 2006: 8; *Zhao, 2006: 38–39; *Chen, Z., 2006: 274, 447.

6. In other words, the *Yijing* only used the method of *shi* 蓍/筮, not the method of *bu* 卜. See Wang, 2012: 29 for a rather curious account of the matter which is totally at odds with this one. See also Rutt, 1999.

7. For detailed textual evidence, see *Liu, 2008: 27–29, 432.

8. See Shaughnessy, 1998 for his account of detecting three authorial hands in drawing up the Treatise on the Appended Words and for a quick reference to the debate among scholars as to whether they are Daoist or Confucianist.

9. See chapter 4, note 1, for another example of Xunzi's efforts to establish the secularization process already begun in earlier times.

10. To understand why a canonical text is called *jing*/经, *dian*/典, or *jingdian*/经典, see Lee, 2008: 162–164, 140–141.

11. See *Liu, 2008: 13–14.

12. In this author's terminology, this *Zhouyi* is the *Yijing*.

13. The literature regarding the dating of the two parts is very large; but to name just two instances setting out in detail some of the evidence, in English, see Smith, 2008 and *Mou, 1998.

14. "*Whole*" is italicized in conformity with authorial decision as announced in chapter 1; see chapter 10 for exploration of "whole", "Whole" and "*Whole*".

15. Wu, 2003: 77–78.

16. Pines, 2002: 41.

17. See * Liu, 2008: 28–30, for consideration of examples from these two texts; Rutt, 1999.

18. All forms of Protestantism, in spite of the profound differences between them, reject the Church of Rome and the Pope as God's true representative on earth—for them, divine communication and instruction are *via* the Bible.

19. Chapter 4 makes a distinction between "the Dao" as a metaphysical concept on the one hand and specific, particular *dao*s, such as *yidao*/the *dao* of *medicine*, which are empirically grounded, but within the *philosophical framework* of the *Dao*.

20. This is a text which emerged during that period in Chinese history known as the Nanbei Period 南北朝 (420–589 CE) among the followers of the Celestial Masters Dao. Although long lost, it survived in fragments scattered in other texts of the Celestial Masters Dao.

21. Before admission, the would-be adherent must offer that amount of rice to the organization.

22. For an account of the ancestral roots of *Daojiao*, the similarities and differences between *Daojiao* and *Daojia*, see *Daojia and Daojiao*, 2013 (for two different accounts, of which the first is from the Chinese perspective and the second is sinological).

23. See K. Smith, 2003 for Sima Tan's motive in creating the term "Daojia" in order to identify its referent in terms of a set of ideas which were intended to appeal to the Han Emperor Wu, with Sima Tan himself as the paradigmatic "Daojia".

24. It is not easy to give a simple translation of this term, as scholars appear to disagree widely amongst themselves. The *fangshi* were said to be practitioners of certain special arts (flourishing roughly from the third century BCE to the fifth

century CE), which depending on the context, could mean alchemical, astrological, or even magical skills. The term referred to a wide range of people from alchemists to mountebanks. Sometimes, the term is translated as "masters of formulae" or "masters of methods." See Wang, 2012:34–35; Graham, 1986: 13.

25. For a discussion on all these related matters, see K. Smith, 2003. [Note that the *Huanglao* strand also contributed to the scholarship of *Yi* studies, but toward the end of the Eastern Han Dynasty, it was appropriated by *Daojiao*—see *Zhu, 2005: Vol.1, 218.] Another sinologist has observed that four main streams may be distinguished which fed into Daoism in general: philosophy, hygiene, alchemy and Penglai mythology and that the *fangshi* were associated with the last two mentioned. Welch, 1957: 89–90 writes:

> It was probably between 350 and 250 B.C. that the names of Lao Tzu became associated with what we shall call "philosophical Taoism"; their books testified in turn to the existence of a "hygiene school," which cultivated longevity through breathing exercises and gymnastics; early in the same period the theory of the Five Elements was propounded by Tsou Yen, whose followers are thought to have started research on the elixir of life; and lastly, along the northeastern coasts of China, ships began to sail out in search of the Isles of the Blest, hoping to return with the mushroom the "prevented death.

Welch, 1957: 96–97 is also of the opinion that it was the *fangshi* who developed alchemy: "although Tsou Yen gradually acquired alchemistical stature, he himself knew nothing of the art." It was probably developed by those of his followers who became interested in physical experimentation with the Five Elements. However, for an account of the Huang-Lao version, see Eno, 2010.

26. The Chinese characters inserted within square brackets in the quotation are found not necessarily where they are located in the quotation. The text mentioned *Xiang'er* is actually a commentary on the *Laozi*, probably written around 200 CE by the grandson of the founder of *Daojiao*, called Zhang Lu/ 张鲁. Unfortunately, it was lost a few centuries after its first appearance, until in the early twentieth century a fragment of a Six Dynasties copy of the text was found in the Dunhuang Manuscript Cave and now lives in the British Library. Its content is said to be close to that of the *Taipingjing*. In Chinese, the commentary is:《老子想尔注 》/*Laozi xiang'er zhu*.

27. A translation in English which does justice to these qualities has recently been published, translated and edited by Major et al., 2010.

28. For a detailed analysis of the relationship behind the politics and the cosmological/*philosophical* world-view in the text, see Wang, 2000; for a quick account, see also Wang, 2013.

29. Roth, 2014. Hoffert, 2006 argues that there is more continuity and coherence in the text than is normally credited it by scholars like A.C. Graham when relating it to the theme of the Dao; although only the so-called Inner seven chapters might be said to be the writing of the historical Zhuang Zhou/庄 周 himself, and the rest were the contributions of later Han Daoists whom Graham calls the "Syncretists," pulling ideas from numerous different sources which could be said often to deviate from the

Master's teachings. Hoffert cites a passage from the section called the *Qiwulun*《齐物论》to support his thesis. The passage reads:

> The Great Way is not named; Great Disputations are not spoken; Great Humanity is not humane; Great Modesty is not humble; Great Courage is not aggressive. When the Way is made clear, it is not the Way. When disputations are put into words, they do not suffice. When humanity is a constant principle, it does not succeed. When modesty is transparent, it cannot be trusted. When courage is aggressive, it does not inspire awe. These five are round but tend toward the square. Therefore, understanding that rests in what it does not understand is the highest. Who can understand disputations that are not spoken, the Way that is not a way? If one has the ability to understand this, it is called the Reservoir of Heaven. Pour into it and it won't fill up, dip from it and it won't run dry, yet no one knows the source from which it comes.
>
> This is called the Concealed Light.

See his analysis of the passage above in Hoffert, 2006: 164.

30. Chinese scholars have now come to the conclusion that, in all likelihood, the tomb belonged to the poet/scholar/official Qu Yuan/屈原 (343–278 BCE) of the State of Chu (one of the states during the Warring States Period), and indeed was/is regarded as one of China's greatest poets and patriots—consult **Tansuo faxian* 探索发现, CCTV broadcast on 11 and 12/03/2014 at 12 noon (London time).
31. Guo Qi/ 郭祁—see reference in preceding note.
32. See *Zhu, 2005: Vol.1, 276 for a list of Han scholars who endorsed this view.
33. In the rest of this book, all the concepts mentioned in this section, would be discussed and explored in full.
34. For a detailed account of this tradition, see *Pan, 2013: Vol.1, 9–16.
35. See Major et al., 2013.

CHAPTER THREE

Ontology

Qi *and Its Role in the Lattice of Inter-weaving Key Concepts*

Chapter 2 links four texts together—the *Yi/Zhouyi*, the *Laozi*, the *Zhuangzi*, and the *Huainanzi*; this, then, permits highlighting a cluster of key concepts which are crucial in providing the general *philosophical* and methodological underpinning for CCM. Some of the concepts so far identified are: *yi*/易, *Ziran*/自然, *Dao*/道, *Qi*/气, *Yinyang*/阴阳, *shi*/时, and *fang* /方.

The single most important methodological consideration guiding the writing of this work, as mentioned in chapter 1, is the thesis that no science (and hence no medicine, in so far as it claims to be scientific) could be articulated, theorized, or practiced without a specific philosophy to underpin it. Quickly to remind readers, the subject of philosophy (following the usual practice in modern Western philosophy) is considered to have four main branches, namely, metaphysics, epistemology, logic, and values. Let us start with metaphysics.

Ontology

This chapter looks at a particular variant of metaphysics called ontology. Very briefly, ontology attempts to answer the question: what are the most basic item(s) of furniture/kinds of being in the universe which can account for the numerous things we observe to exist in the world? With its five senses, humankind has come to know that different kinds of trees and plants as well as animals exist, that heavenly bodies such as Earth, Sun, Moon, and Stars exist, that rainbows, thunder, and lightning exist, and so on. Philosophers attempt to account for all these phenomena, speculating whether a single ontological

category is sufficient, namely, the category of Matter. If the answer to that question is "Yes," then one calls such an ontology, Materialism. However, if the answer is "No," then what additional ontological category would be required? In the history of modern Western philosophy, the enquiry took this particular turn: we, human beings, have noticed that we exist somewhat differently from other living beings, such as tigers or apes. While these as well as we, undoubtedly, are material/physical beings, the fundamental difference between us makes it appear necessary to go beyond the ontological category of Matter in order to account for the type of unique consciousness which we possess. This consciousness enables us to discover that Earth goes round the Sun and not the other way round (since the Copernicus Revolution), axiomatize Euclidean geometry, speculate that there may be a transcendent being called God, who created us and the universe, and construct abstractions and speculations of which apes and tigers are incapable. One leading philosopher of the Age of Modernity (René Descartes, 1596–1650) said that apart from Matter, Soul/Mind must exist and that a human being is a combination of two very different kinds of substances Mind/Soul, Body (Matter). This is the famous doctrine of Cartesian dualism. (Chapter 9 explores whether Chinese *philosophy* is also dualist in nature).

Is Chinese *ontology* a form of Materialism, *simpliciter*? Or is it a form of Cartesian dualism? Or is it neither, but instead something much more complex and subtle? We need to begin to address this important issue here, focusing on *Qi*.

What Is *Qi*?

As the key notions mentioned so far form a lattice of inter-weaving concepts, it would not matter too much which of them is selected to kick-start the discussion on the theme of Chinese metaphysics/*ontology*. Upon reflection it is obvious to start with the notion of *Qi*, and in the process of unravelling its philosophical complexity and subtlety, its significance would become clear. Furthermore, the *Daojia* tradition recognized it to play a foundational role in Chinese *philosophy*/cosmology, as it the most basic ontological category in which everything in the universe could be accounted for.

In grappling with a character/word[1] which appears in ancient Chinese texts, it is normal to deconstruct it by looking up older scripts or dictionaries to determine its original meaning.[2] What does the character *qi* look like in the various ancient scripts? See figure below.

A is the Oracle Bone Script/甲骨文; B are three versions in the Bronze Script/金文; and C are the Lesser Seal Script/小篆. The word remains quite unchanged in the scripts which succeeded/succeed, such as the Clerical

Figure 3.1. Character *qi* in various scripts

Script/隶书, the Standard Script/*kaishu*/楷书 looking just like C (in *fanti*/ 繁体, it is氣, *jianti*/简体, it is气).[3] As version A could be easily mistaken for another word 三/*san* meaning "three" (the difference lies in that the three strokes of the former are not of identical length unlike those of the latter), the Bronze Script had introduced some changes. A and B1 are considered to be attempts to depict floating clouds. As such, the original meaning of *Qi* lies in *yunqi*云气, specifically about cloud conditions. B2 and C1 show these conditions even more graphically, that these clouds are fine floating clouds. The Han lexicographer of *Shuowen jiezi*/《说文解字》, Xu Shen/许慎 (c58-c147 CE), who was relying on C1, also explained the word in terms of *yunqi*. Derivative meanings include: the atmosphere in general 空气/*kongqi*; the weather in terms of being cold, hot, rainy, dry, sunny, dull, and so on as in *qihou*/气候, *qixiang*/ 气象 (meteorology); the breath of some living animals when these organisms breathe in and out *qixi*/气息; the mental state of a person as in the expression *chui tong sang qi*/垂头丧气 meaning "dispirited"; *qidu*/气度, *qizhi*/气质, the bearing/character of someone, whether the figure in question is charismatic, authoritative.

Under another entry for the word based on the radical米, B3 which looked no different in reality from the Clerical Script C2, Xu Shen gave another meaning altogether different from that noted earlier. He quoted a passage from a particular text:[4] 齊人來氣諸侯. This can be loosely translated as: "The State of Qi sent to the military of other (feudal) states forage for their animals and food for their soldiers." Xu Shen said that the word itself is composed of two parts: one part comes from the word for "rice" 米, the other comes from 气 which gives it the sound. In other words, it is a *xingsheng zi*/形声字/semantic-phonetic compound. One scholar in particular has commented that Xu Shen appeared to have modified a much older word (to refer to this kind of gift between feudal states), namely, 餼/*xi*—he simply dropped the left-hand component, retaining the right only. In other words餼/氣 referred to food stuff (for humans and animals) given as gifts between states. Whatever the convoluted history about the orthographic development of *qi*,

it appeared that sometime after Xu Shen, the practice grew up of writing *qi* no longer as 气 (C1) but as氣 (C2) , until the 1950s when the *jianti* reform took place, reverting to C1.[5]

As early as the Oracle Bone Script, during the late Shang Dynasty, A showed that the word was used to refer to something people could observe in the sky above them. Fine floating clouds appeared to have both shape and size, yet they did not seem to the ancient Chinese to be solid and impenetrable. Although there were, then, no airplanes to fly through clouds, they would have seen on occasions some powerful birds flying into or above them and then through them re-appearing yet again below them. It was obvious that they changed shape and location very quickly. We shall return to these characteristics in a moment.

The meaning of *qi* which Chinese *philosophy* is interested in as an *ontological* category had long left the Shang use of the term *behind*, although so far as one knows, Chinese history had not mentioned any specific date about the transition. Suffice it just simply to remark that by the time the *Yijing* was constructed, the word *qi* could no longer mean what the Shang people had taken it to mean (that is, no more than fine floating clouds in the sky), as the text, even as a straight-forward divinatory one, was based on *yin qi* 阴气 and *yang qi* 阳气 as captured by the image of the *gua* 卦 whether as trigrams or hexagrams. The *yin yao* 阴爻(broken line) and the *yang yao* 阳爻 (unbroken line) bore cosmological meaning if not full *philosophical* import in the early days of the *Yijing*. By the time of the *Laozi*, the *Zhuangzi*, the *Ten Wings*, and the *Huainanzi*, the term had become a fully-fledged *ontological* category. Some scholars maintain that the earliest expression of *Qi* as being metaphysical in character can be found in the *Zhuangzi*,[6] but admittedly in a chapter which is not part of the Inner seven chapters, called《知北游》*Knowledge Roaming North*, but which, nevertheless, accords with the understanding of the Dao, as found in the *Laozi* and other *Daojia* texts.[7] The relevant passage reads: 生也死之徒, 死也生之始, 孰知其纪! 人之生, 气之聚也。聚则为生, 散则为死。若死生为徒, 吾又何患! 故万物一也。。。。故曰: '通天下一气耳, rendered by this author as follows:

> Life is but the companion of death, just as death is the beginning of life, life and death being complementary processes. Who knows the detailed entirety of the process? Life of the human being is but the concentration of *Qi*. *Qi* concentrates, thus life occurs; *Qi* dissipates，death occurs. As life and death are necessary companions, I do not regard death as a disaster. … Thus *Wanwu* (the myriad things) are part of the One, *Qi*. Hence goes the saying: 'Permeating All-under-heaven is *Qi*.

This passage either makes clear or implies several important points:

1. *Qi* is omnipresent in the universe, and is the *ontological* category accounting for *Wanwu*.
2. As such, it cannot therefore be translated by "breath," "air," "gas," nor even straight-forwardly by "energy," which it often is; nor can it be translated by "matter."
3. The notion of *Qi* points to a puzzling feature that it is perhaps both "energy" and "matter" simultaneously.[8]

These points can be related back to the meaning of the word *qi* in the Oracle Bone script, standing for fine, floating clouds. We have imagined what the ancient Chinese would have observed, that clouds had shape and size, yet these characteristics changed quickly from moment to moment (thereby changing location in the process). Yet although they had shape and size (let us call this the A set of properties), clouds were not like other objects which also possessed shape and size, such as mountains, trees, animals—the latter, the ancient observers knew had other properties not possessed by clouds, such as their solidity, impenetrability, and their (relative) stability (let us call this the B set of properties). To say that an object possesses solidity is to say that the stuff it is made of is densely packed, unlike the air in the atmosphere which is not. Dr. Samuel Johnson (1709–84 CE), the famous eighteenth century lexicographer of the English language, famously demonstrated that physical objects such as rocks were real and existed by kicking them in an attempt to refute the skeptic who claimed that they did not exist in the world out there, and were, therefore, not real. Dr Johnson implied that it was their solidity which would make the skeptics regret for having kicked them, as their feet and toes would be agonizingly painful when stubbed. Impenetrability goes with solidity—something impenetrable means that one cannot walk through it, such as a hill, a wooden door. Stability goes with solidity, impenetrability—a hill, a mature tree, a large rock are all stable (or to be more precise, relatively speaking, appear very stable when compared with finely floating clouds). Such objects have weights which can be measured.

When we normally talk about physical objects (mountains, animals), we are talking about those things in the universe which possess both the A and B sets of properties. As such they are said to embody *matter*, and the ontology they presuppose is called *Materialism*. (In modern Western philosophy, the ontological rival to Materialism is *Idealism*—that is to say, that matter is not the ultimate constituent furniture in the universe but are ideas or can be reduced to ideas or mental conceptions entertained by human consciousness such that

the ultimate furniture in the universe is no more and no less than ideas.) The ancient Chinese found juxtaposing mountains or tigers with clouds philosophically inspiring and significant, as clouds appeared to them to possess the A but not the B set which could have prompted them to speculate what clouds could instantiate—an interesting category of being appeared to have emerged, which satisfied only the A but not also the B set. In this imagined re-construction of what the ancient Chinese had observed and reflected upon, we have found that they would have wittingly or unwittingly transformed themselves into cosmologists and *philosophers* as they posed to themselves the question: what is the ultimate constituent of the universe? Their attempt to answer such a question would have led them eventually to formulate the following set of related theses:

1. The ultimate *ontological* category might not be Matter *simpliciter*, but something more complex, less simple-minded than Matter in a straight-forward sense, which they called *Qi*. *Qi* is both Matter and its polar opposite, not-Matter. (This is not to say that the ancient Chinese actually entertained a term which can be translated as "ontology;" it is to say that they had the concept, rather than the word for it.)
2. This in turn would have led them to postulate that this *Qi* was capable of two modes of existence or being, as the passage from the *Zhuangzi* cited above, indicated. These two modes of being may be called: (a) *Qi*-in-concentrating-mode (*qi ju*/气聚); (b) *Qi*-in-dissipating-mode (*qi san*/气散).[9]
3. The *Qi*-in-dissipating-mode preceded the *Qi*-in-concentrating mode. In the origin and evolution of the universe, the former existed before the latter. *Yuanqi*/元气/Original *qi*[10] was *Qi*-in-dissipating-mode; it was followed later by the appearance of *Qi*-in-concentrating mode—the one follows upon the other in a seemingly endless cycle of succession.
4. Of the two modes of being, the *Qi*-in-dissipating mode, in contrast to its polar counterpart (*Qi*-in-concentrating-mode) may be said to be the default mode of being, not only because of its existence as *Yuanqi*/Original *qi* but also because, as we shall see, the *qi* "released" through decay or death of the physical object which embodied *Qi*-in-concentrating mode is returned to *Qi*-in-dissipating mode. This would accord well with two (of the three) meanings of the term "易" embedded in the *Yi*, namely, 变易/*bianyi* ("to change"/"change") and 不易/变*buyi* ("not to change"/"no change"). However, this should not be interpreted to mean that the *Qi* in *Qi*-in-dissipating-mode is not itself subject to change (everything in the universe changes including *qi* when expressed as *yin qi* (*qi* of *yin*) or *yang qi* (*qi* of *yang*) which will be explored later), but that in this context of application and under-

standing, as just set out, *Qi*-in-concentrating-mode may be said to be subject to change, whereas *Qi*-in-dissipating-mode is not subject to change, and so is said to remain constant. (Later in the chapter, we shall explore this point further.)

5. *Qi* in its *Qi*-in-concentrating mode as physical things are said to possess "stuff" and "form"—a rendering in English of 有质有形/*you zhi you xing*. That which has both *zhi* and *xing* is Matter. *Xing* can then be said to refer to the A set of properties listed above, that the entity has size, shape and occupies space (location), while *zhi* could be said to refer to the B set of properties, that the entity is solid, impenetrable, stable, has weight, and mass (in today's understanding of physics which will be looked at later in the chapter). That is why too, in ancient Chinese *philosophy* (or at least the *Daojia* tradition of the pre-Qin and early Han times), Matter and material entities belonged to the domain called 形而下/*xingerxia*—this expression appeared for the first time in the *Ten Wings* and may literally be translated as "that which exists at the level of shape and size." In contrast, *Qi* in its *Qi*-in-dissipating-mode was implied to belong to the domain of 形而上/*xingershang* which may literally be translated as "that which exists at the level above/beyond things with shape and size."[11]
6. These two modes of being are inter-related, inter-transformable. As already indicated, "inter-transformable" means that *Qi*-in-dissipating mode can become *Qi*-in-concentrating mode, and after a period of time, *Qi*-in-concentrating mode returns as *Qi*-in-dissipating mode, thereby setting up a cycle of sustainable exchange between the two modes. The causal arrow moves in both directions as follows:

↔

The passage from the *Zhuangzi* cited above used the life and death of an organism to illustrate the process. The beginning of life is but *Qi*-in-dissipating mode transforming itself into *Qi*-in-concentrating mode while death is but *Qi*-in-concentrating mode transforming itself back into *Qi*-in-dissipating mode—these phases of change mark the birth and death of an organism. But the cycle starts afresh again, with *Qi*-in-dissipating mode transforming itself into *Qi*-in-concentrating mode, in another organism—such a cycle carries on sustainably during the entire evolution of life on Earth (in our Solar system). It is important to note that this unchanging mutual transformation of the two modes of *Qi* occurs not only in the biotic but also abiotic domain—for instance, planets such as Earth did not originally exist as Matter/*Qi*-in-concentrating mode, but as *Qi*-in-dissipating mode.

It should, therefore, be pointed out that the term *Wanwu* can have two meanings—a narrower meaning which refers to organisms but also a broader meaning, referring to entities in both the biotic and the abiotic domains. It is natural to talk about birth and death in the former, less so in the latter. However, the abiotic also has its analogues of birth and death—one can speak of the origin/coming into being of a mountain (orology) and eventually of its decay until the mountain no longer exists and all that is left are some stumps. The Himalayas are so high for the simple reason that in geological terms they are considered to be very young mountains. But eventually they, too, would wear down primarily through weathering, but conceivably even by movements from the center of Earth, changing the crust formation on its surface. Mountains, as high and as big as the Himalayas or the Alps, would eventually be transformed from their *Qi*-in-concentrating mode to become *Qi*-in-dissipating mode. The abiotic as much as the biotic are part of *Wanwu*, of *xingerxia*, and therefore are subject to the same processes of change as the biotic according to the ancient Chinese.

In addition to the above, the *Huainanzi* elaborates further on the notion of *Qi*,[12] presenting an account of the evolution of the cosmos. A relevant passage from the third chapter called "Celestial Patterns"/《淮南子· 天文训》reads:[13]

> 坠未形，冯冯翼翼，洞洞灟灟，故曰太昭。When Heaven and Earth were yet unformed, all was
>
> ascending and flying, diving and delving. Thus it was called the Grand Inception.
>
> (Major et al., 2010: 114)
>
> 道始生虚廓, 虚廓生宇宙, 宇宙生气。The Nebulous Void is the state of the Dao, the Nebulous Void engendered the cosmos, the cosmos in turn engendered *Qi* (or the original *Qi*). (Rendered by this author.)
>
> 气有涯垠，清阳者薄靡而为天，重浊者凝滞而为地。清妙之合专易，重浊之凝竭难，故天先成而地後定。
>
> A boundary [divided] the original *qi*.
>
> That which was pure and bright spread out to form Heaven;
> that which was heavy and turbid congealed to form Earth.
> It is easy for that which is pure and subtle to converge
> but difficult for the heavy and turbid to congeal.
>
> Therefore
>
> Heaven was completed first:
> Earth was fixed afterward. (Major et al., 2010: 114)
>
> 天地之袭精为阴阳—this phrase is left out of the Major translation but is rendered by this author thus: *Yinyang* came about through the essences of Heaven and Earth pairing with each other.

阴阳之专精为四时，四时之散精为万物。积阳之热气生火，火气之精者为日；积阴之寒气为水，水气之精者为月；日月之淫为精者为星辰，天受日月星辰，地受水潦尘埃。

The conjoined essences of yin and yang caused the four seasons.

The scattered essences of the four seasons created the myriad things.

The hot *qi* of accumulated yang produced fire; the essence of fiery *qi* became

the sun.

The cold *qi* of accumulated yin produced water; the essence of watery *qi* became

the moon.

The overflowing *qi* of the essences of the sun and the moon made the stars and planets.

> To Heaven belong the sun, moon, stars, and planets;
> to Earth belong waters and floods, dust and soil. (Major et al., 2010: 114–115)

The above passage makes clear the following points:

1. The biotic and abiotic, heavenly as well as celestial bodies were all made of *Qi*.
2. Before *Wanwu* (implying the broader meaning) appeared, there was *Qi*.
3. But before *Qi* was produced by *Yuzhou*/宇宙 (the cosmos/universe), the Dao (presented by Major et al.) as the Nebulous Void engendered *Yuzhou*. The line of causal production appears to be like this: the Nebulous Void/the Dao → *Yuzhou* →*Qi* (as *Yuanqi*).
4. The lighter and brighter *Qi* led to the formation of Heaven while the heavier and more turbid *qi* Earth.
5. The lighter and brighter was also called *yang* qi, the heavier and more turbid was called *yin qi*.
6. The mutual reactions and relations between *yin qi* and *yang qi* led to the four seasons which in turn made the emergence and the existence of the myriad things (*Wanwu* implying primarily here the narrower meaning) possible.

We can gloss 3 above as follows: the *Huainanzi* in this passage introduced the notion of the Nebulous Void which the *Zhuangzi* (or the *Laozi*) did not, as well as that of *Yuzhou*, filling in a gap or two left by the passage quoted earlier from the *Zhuangzi*; it also provides the link between the two *Daojia* foundational texts on the one hand and itself as a later *Daojia* text, by explicitly mentioning the Dao in the passage cited above.

First take the following passage from the same chapter (*Knowledge Roaming North*) of the *Zhuangzi* earlier cited: 东郭子问于庄子曰: “所谓道，恶乎在?” 庄子曰: “无所不在。” 东郭子曰: “期而后可。”庄子曰: “在蝼蚁。”曰: “何其

下邪?" 曰: "在稊稗。" 曰: "何其愈下邪?" 曰: "在瓦甓。"曰: "何其愈甚邪?" 曰: "在屎溺。" This passage is a purported conversation between Zhuangzi and an interrogator called Dong Guozi, and may be rendered (by this author) as follows: "Dong: The so-called Dao, where can it be found? Zhuangzi: It is everywhere. Dong: Would you mind being more specific as that would make things clearer? Zhuangzi: It can be found in ants. Dong: Why is it found in such lowly matter? Zhuangzi: It can be found in this kind of grass (called *bai*) which invades cultivated fields, therefore is regarded as a weed, a pest. Dong: Why, the Dao seems to sink that "low"? Zhuangzi: It exists in earthenware tiles. Dong: Can it be found in anything even "lower" than that? Zhuangzi: Yes, in faeces and urine. To this last retort, Dong fell silent."

If the meaning of the *Zhuangzi*'s response were read in the light of one of the famous passages from the *Laozi*, then the meaning of the *Zhuangzi*'s passage cited above would become clear. That passage from Chapter 42 of the *Laozi* reads: 道生一, 一生二, 二生三, 三生万物《道德经 · 四十二章》. This may be rendered (by this author) as: "The Dao engenders one, one engenders two, two engenders three, three engenders *Wanwu*." Chinese scholars have down the ages interpreted "one" mentioned in the passage either as *Yuanqi*/元气 or equated it with *Taiji*/太极 of the *Yi*, a concept which will be examined chapters 6 and 7. But whether "one" referred to *Yuanqi* or *Taiji* would not interfere with the meaning of "two" as it is understood to refer to the two types of *qi*, *yin qi*, and *yang qi*.

The *Laozi*, unlike the *Zhuangzi* and the *Huainanzi*, explicitly introduced a pair of polarities called *wu* and *you*/无有, commonly translated in sinological discourse as "non-being"[14] and "being." The Dao belongs to the former category while *qi* belongs to the latter—that being comes from "non-being." In other words, the *Laozi*'s account of cosmology could be spelt out as follows (with the arrow → standing for the notion of engendering):

Dao ("Non-being") → One (Being/*Qi*) → Two (*yin qi* & *yang qi*) →
Three (co-operation, mutual response and interaction of *Yinyang*) →
Wanwu
The *Huainanzi*'s account could be spelt out as follows:
The Nebulous Void/the Dao → the Cosmos → *Qi* →
Yinyang (Heaven and Earth) →
the Four Seasons (incorporating the Five Transformative Phases/*Wuxing*/ 五行) →
Wanwu

The *Huainanzi*, as the latest historically of these three texts, gives the fullest account (by Han times the concept of *Yinyang* had been conjoined with

that of *Wuxing*, a development to be looked at in chapter 7). However, in spite of some differences between them, all the passages cited from the different texts above agreed that *Qi* is the foundation of *Wanwu* both in the wider sense of the biotic and abiotic as well as the narrower sense of the biotic.

The three texts agree that *Qi* can be distinguished in terms of two kinds, *yin* and *yang qi* and that the basis of *Wanwu* is the result of their inter-twining. The *Zhuangzi* goes further than the other two texts by introducing the distinction between two modes of *Qi* operation which are inter-transformable which then leaves us with the puzzling issue of how best to characterize *Qi* as an ontological category. *Qi*-in-concentrating mode would not be mysterious to those familiar with Western ontology, as it clearly denotes Matter, and as such instantiates Materialism. However, *Qi* as *Yuanqi* as well as *Qi*-in-dissipating mode does not fall into this ontological category. The closest notion Western science and philosophy have is that of "energy," a concept, happily and readily understood today because of certain developments in the history of Western science, namely, the science of thermodynamics and Einstein's theory of special and general relativity as well as of quantum physics.[15]

Sadi Carnot (1796–1832), the famous French engineer, was the first to stumble upon what has come to be called the science of thermodynamics.[16] The English had invented the steam engine which went on to fuel the second industrial revolution in general and the railway in particular. Carnot felt that France was being left behind in this race; being patriotic, he decided to study the steam engine in order to increase its efficiency, and thereby to overtake her Anglo-Saxon rival. The English inventors were workmen, some even illiterate such as Robert Stephenson; Carnot thought he could design better steam engines as an engineer with a training in science. He discovered that the efficiency of the engine (admittedly an idealized one) depended only on the difference in temperature between its hottest and its coldest parts which drove the mechanism. Although at first ignored, his finding was later incorporated into thermodynamic theory as developed by the German, Rudolph Clausius in 1850 and the Scots-Irish, William Thomson (later Lord Kelvin) in 1851.

This science is primarily concerned with the conversion of energy between its various forms as well as with the ability of energy to do work for us. Sometimes, it is said to have three laws and sometimes four.[17] But from our limited purpose here, the only relevant one we need to examine in detail is the first law which is called the law of conservation of matter and energy; *this means that matter and energy cannot be destroyed, only transformed, that energy and matter can be converted from one form to another* (for instance, light could be turned into heat and vice versa, solid could become liquid, then gas, and

back again), but with the total amount remaining constant. All that we need to concentrate on is that part which this author has underlined.

Our discussion so far of *Qi* shows that it is in agreement with the underlined portion of the First Law of Thermodynamics. *Qi*-in-concentrating mode is Matter and *Qi*-in-dissipating mode would then be energy; the latter is transformable into the former, the former is transformable into the latter. So it is not implausible to claim that *Qi* and its two modes of operation constitute the ancient Chinese version of this law of thermodynamics. But it differs from this law not merely because it is embedded in a different kind of historical, political, and social context but also in a very fundamental aspect. Hence, let us mark this difference by italicizing the Chinese law thus: *the law of thermodynamics* while it appears simply as the First Law of Thermodynamics (in the context of Modern Science since the mid-nineteenth century).

In the context of Western philosophy and modern Western science, Matter is the fundamental ontological category—chapter 8 argues that thing-ontology is the dominant ontological framework in the Western philosophical tradition, whereas process-ontology was endemic in Chinese *philosophy* and the *science* such an *ontological* framework generated from time immemorial. Science in the Western tradition sees energy as something imported from outside the domain of material reality in order to transform it; it is also the case that Matter is transformed by energy to become merely another form of Matter (when wood is burned, it is reduced by the energy of the fire to become ashes, and in turn to become part of soil), while admitting that in the process, energy is released and no longer available for work (the Second Law of Thermodynamics is about the production of this loss of energy for work, existing as "entropy" instead). In contrast, what this author has called the *Chinese law of thermodynamics* was articulated not in the context of technology, of the efficiency of machines which do work on behalf of humankind, but in the context of attempting to understand the processes at work in the natural phenomena which we humans observed and studied. The ancient Chinese, as a result of this kind of orientation, came to appreciate that Matter and so-called energy could not be distinct and separated out from each other, that there was a complex underlying linkage between them. This led them to postulate a dyadic relationship (to be distinguished from a dualist one, a distinction which will be examined and explored in chapter 9) between the two modes of being which *Qi* could take. Such a conception of *Qi* as the basic *ontological* category also implied that *Qi* as *Yuanqi*, of which *Qi*-in-dissipating mode was a part, preceded Matter/*Qi*-in-concentrating mode. Furthermore, the relationship between the two modes of *Qi* is also a dynamic as well as internal one. (These relationships would be spelt out in chapters 6 and 7.)

These points are expressed in Chinese as follows:

(a) 形中有气/*xing zhong you qi*—in form/shape there is *Qi*;
(b) 气中有形/*qi zhong you xing*—in *Qi* there is form/shape;
(c) 气化 形 /*qi hua xing*—*Qi* transforming form;
(d) 形化气/*xing hua qi*—form transforming *Qi*;
(e) 形化形 /*xing hua xing*—form transforming form;
(f) 气化气/*qi hua qi*—*Qi* transforming *Qi*.

An instance of:

(c): *Qi* transforming form: clouds transform as snow
(d): form transforming *Qi*: water from the ocean transforms to become clouds (with help of sunlight)
(e): form transforming form: ice (solid) becoming water (liquid)
(f): *Qi* transforming *Qi*: the *Qi* of water (水气) which constitutes clouds transforms as rainbow

(c) to (f) above are possible expressions of the dynamic relationships between *Qi* in its *Qi*-dissipating mode and *xing* which is *Qi*-in-concentrating mode. These dynamic relationships could occur because of the internal relationship between *Qi* (in its *Qi*-dissipating mode) and *xing* (*Qi*-in-concentrating mode) which is characterized in (a) and (b) above. This is to say that while *xing* embodies *Qi*, *Qi* also embodies *xing*; that *Qi* and *xing* are not mutually exclusive as *ontological* categories. Another way of putting the same point, but this time in Aristotelian terms, is to say that *xing* (Matter) contains *Qi* as well as that it has the potential of transforming itself to become pure *Qi* (*Qi*-in-dissipating mode)—after all, Matter/form is really no more and no less than *Qi*-in-concentrating mode. Similarly *Qi*-in-dissipating mode has the potential to become Matter/form which after all is really *Qi*-in-concentrating mode.

Yet another way of helping those outside the Chinese *philosophical/scientific* mode of thought is to look at Einstein's famous equation, $E = mc^2$ where E=energy, m=mass, c^2=the square of the speed of light. That equation captured Einstein's discovery of the deep connection between energy and mass.[18] However, Einstein's theory had to await confirmation via experiments which was not obtained until 1933 when Irène and Frédéric Joliot-Curie captured in photography the process of energy converting into mass—the photo may be found at the website of the Center for History of physics, American Institute of Physics.[19]

While this was happening in Paris, two scientists in Cambridge University in another experiment demonstrated the reverse process, that of mass converting

into pure energy. John Cockcroft and E. T. S. Walton, upon breaking apart an atom, found that its fragments, added together, had slightly less mass than the original atom which had flown apart with great energy. Finally in 2005, the year of the centenary of Einstein's discovery, a team of scientists measured the energy of the gamma-rays emitted by radioactive atoms and found that this energy was equivalent to the change in mass of these atoms before and after the emission of the gamma-rays—the equivalence was to within 4 hundred-thousandths of one percent.[20] This equivalence between mass and energy makes it possible to say that mass is a form of energy; *the law of thermodynamics* could then be said to be in accordance with this conclusion in post-Newtonian physics as enunciated by Einstein in his special theory of relativity in 1905.

Conclusion

In the light of these three important developments in post-Newtonian physics—thermodynamics in the mid-nineteenth century and relativity as well as quantum in the early twentieth century—what the ancient Chinese held about the nature of *Qi* becomes much less mystifying, not at all mystical, and more accessible to the modern mind brought up, by and large, on the Newtonian world-view which nevertheless has got to cope with post-Newtonian physics in particular and post-Newtonian science in general.

This chapter has argued that the ancient Chinese considered *Qi* to be the basic *ontological* category. Barring the option of resisting translating it, how best then should one render *Qi* into English in such a way as to approximate to its reference and use in the original texts? If translate one must, we propose the cumbersome but more accurate term "energy-cum-matter" to do justice to its two modes of being, *Qi*-in-dissipating mode as well as *Qi*-in-concentrating mode. Another way, but even more infelicitous is to coin this barbarism "Em-ism" ("E" for "energy," "m" for "mass" and "ism," the suffix which turns an expression which stands for something concrete, physical, and specific into an abstract concept); this Em-ism does not refer to matter nor to non-matter *simpliciter*, but to a concept which transcends both. Philosophers of science trained in the Western tradition have not, as far as this author can ascertain, thought of formulating a term to capture the ontological distinctiveness of Einstein's physics (linking mass and energy); the ancient Chinese, so to speak, had simply grounded their *physics* on their *ontological* category of *Qi*.[21]

The term "Em-ism" has been coined and put forward not as an instance of what some scholars have called "retrospective privileging;" that is to say, this author is not claiming that the ancient Chinese have scored a brownie point over Einstein regarding the formula "$E = mc^2$," that they had discovered the

physics behind that equation some three thousand years before Western scientists. All that this author wishes to do is to draw attention to the following:

1. Cox and Forshaw, 2010: 135 says that in the tradition of Western science "(b)efore Einstein, no one had dreamed that mass could be destroyed and converted into energy because mass and energy seemed to be entirely disconnected entities. After Einstein, everyone had to accept that they are different manifestations of the same type of thing."
2. Before $E = mc^2$, no one had thought mass is a form of latent energy.[22]
3. Put very simplistically, the formula works because the speed of light which is finite is held to be constant (186,000 mi/sec such that someone traveling at the speed of light, would go around the equator approximately 7.5 times in one second), that nothing travels, so to speak, faster than the speed of light.
4. The ancient Chinese had nothing to say about the speed of light in their account of *Qi*; nor did they distinguish carefully between weight and mass; nor did their account permit calculation of a precise nature in the conversion of mass into energy. These are just some outstanding differences between their *Qi ontology* and modern physics.
5. The ancient Chinese, within their own *ontological* account of *Qi*, had themselves made the distinction between *Qi*-in-concentrating mode and *Qi*-in-dissipating mode, and that there was mutual transformation and inter-change between them.
6. As the ancient Chinese did not subscribe to dualistic ontology (see chapter 9 for a discussion of the differences between Western dualism and Chinese dyadism), mass/matter was not separated out from energy (which was the case up to Einstein in the West tradition of philosophy and science); rather *Qi* simply existed and operated as *Qi*-in-concentrating mode as well as *Qi*-in-dissipating mode. These two modes may usefully in the context of appreciating the differences as well as the similarities between different philosophical frameworks generating different forms of science, be regarded, at best, as bearing an analogous resemblance to mass and energy.
7. The ancient Chinese simply adhered to what this author calls *Em-ism*, a term coined as a short and quick snappy label to characterize their *philosophy* and their *science*. Those who do not like it are not obliged to use it as it is not exactly elegant; they could simply spell out the two modes of existence and operation of *Qi*.
8. However, one could perhaps plausibly argue that the ancient Chinese as well as Einstein and scientists after him in the tradition of contemporary

physics are respectively grappling to account for a problem confronting them. That problem, Cox and Forshaw, 2010: 146 put as follows:

> The process of converting mass into energy and energy into mass is . . . absolutely fundamental to the workings of nature; it is an everyday occurrence. For anything to happen at all in the universe, energy and mass must be continually sloshing back and forth. How on earth did anyone manage to explain anything involving energy before we knew this seemingly most basic of facts about the workings of nature?

The ancient Chinese did cope in their own way, not in terms of "mass" and "energy" and the speed of light being constant,[23] but simply in terms of their distinction between *Qi*-in-dissipating mode and *Qi*-in-concentrating mode and the continual "sloshing back and forth" between them.

Carroll, 2016 is a book that is remarkably *Daojia* in spirit; he calls the account of cosmology and physics presented in it "poetic naturalism," an infinitely more elegant and eloquent term than this author's poor offering of "Em-ism."

The interpretation given here is not the only interpretation possible; nor is the meaning of *qi* attempted the only possible one in the totality of Chinese *philosophy* of *Qi*. There are other contexts of its use in theory and practice which the above interpretation does not reflect so well. But in a later chapter, where we shall be exploring the notion of the Dao, we shall raise the matter again.

Notes

1. For an account why a Chinese character may be read as a word or only as a "syllable" in a word, see Lee, 2008.

2. On all the points to follow, see *Wu, Y., 2006: 30; see also **Qi*, 2013.

3. For an account of the complicated relation between *jianti* and *fanti*, the so-called "traditional script" today still used in Taiwan, the way in which Chinese characters/words are constructed on a modular basis, as well as of the principles of classification used in understanding how they are constructed and in turn deconstructed, see Lee, 2008: Part II.

4. The text is the《春秋传》, the *Commentary on the Spring and Autumn Annals*, a text of the Warring States Period, dated not later than 389 BCE, covering that period of Chinese history between 722–408 BCE.

5. For a very different alternative account of this matter, see Wang, 2012: 59. This author would, of course, agree with Wang, 2012 to the very limited extent that

the character can, indeed, be found in the Oracle Bone Script. As for the respective merits of these two accounts, readers should decide for themselves.

6. See Zhang, 1982 in the translation by Ryden, 2002: 49.

7. See Hoffert, 2006.

8. To add to the complexity, there is the trinity of 精 气 神 (*jing*, *qi* and *shen*); the first is (essential) matter which is visible and palpable (in the context of referring to the sperms of the male); the second, in one of its forms at least, as we shall see, is not material (as it is without form or shape and other characteristics possessed by matter) and can in certain contexts be said to refer to energy. The third refers to the spirit, especially when it occurs with *jing* as a two-character word, 精神 and one could use it in much the same way as in the English expression, "her spirit is low."

9. This is the nearest which this author can get to the meaning of the quotation from the *Zhuangzi* earlier cited.

10. There is another meaning which is not relevant to raise here.

11. However, we shall see later that this latter expression is also used to translate the term "metaphysics" into Chinese; its use as such will be then be critically assessed.

12. The Han Dynasty thinkers appeared very keen on the notion of *qi*—the Emperor Xuan 宣汉帝 convened or caused to be convened a seminar on the subject in 51 BCE—see *Zhu, 2005: Vol. 1,130.

13. Very unfortunately, this author felt it is not appropriate to use in its entirety the overall excellent translation provided by Major et al.; in two places, substitute translations have been provided instead.

14. This author prefers the terms (in particular *wu*) to remain untranslated; however, a more accurate translation for *wu* is perhaps something inelegant such as "the domain of great openness" which points to *wu* being that which contains possibilities for being. For now, the term "non-being" will be used within quotation marks.

15. For a very accessible account of the link between thermodynamics, relativity (special and general) as well as quantum physics, both at the experimental and theoretical levels, see Cox and Forshaw, 2010.

16. For a quick account, see *Sadi Carnot*, 2013.

17. For an accessible, brief account see *Three laws of thermodynamics*, 2013; Atkins, 2010.

18. Mass should not be confused with weight. Weight is the measure of the force of gravity acting on a body, and so can vary, as the force of gravity varies from location to location. Mass is the quantity of matter in a body regardless of its volume or of any force or forces acting on the body. In normal circumstances, the mass of a body can be regarded as constant—see *Mass*, 2013.

19. See *Photograph capturing the process of converting mass into energy*, 2013.

20. See *Speed of Light May Not Be Constant*, 2013; Cox and Forshaw, 2010.

21. It would be a bad *philosophical* mistake to consider *Qi* as either plain matter (Materialism) or plain energy. For the former viewpoint, see Byden, 2002: xv.

22. In June 2014, *Nature Photonics* published new research by some physicists at the Imperial College London which shows it is possible to convert light directly into

matter using today's technology (such as high-powered lasers and other equipment); this attempt demonstrates (in principle) what was proven in theory by Gregory Breit and John Wheeler in 1934. See Pike, Mackenroth, Hill and Rose, 2014.

23. Since 2013, some work by researchers show results which appear to challenge Einstein's claim—see *Speed of light may not be constant*, 2013.

CHAPTER FOUR

Metaphysics

The Laozi *and the Lattice of Inter-weaving Key Concepts*

Chapter Three explores the notion of *Qi* as the *ontological* category in ancient Chinese *philosophy* which served to underpin its *science*. This chapter explores other metaphysical concepts, bringing out also the complexities behind the attempt to translate the term "metaphysics" in Western philosophy as the equivalent of the Chinese *xingershang*/ 形而上 ("that which is above form").

Ziran

We begin by looking at another famous passage from the *Laozi* (chapter 25): 人法地，地法天，天法道，道法自然《道德经·二十五章》) which may be translated as: Humankind follows Earth, Earth follows Heaven, Heaven follows Dao, and Dao follows *Ziran*.

It is obvious that the quotation mentions five terms each standing for its own respective concept. For the purpose of the discussion here, let us leave out the term *ren* referring to humankind. For the moment, all that one needs to grasp is that this extended chain of reasoning implies that humans follow first Heaven and Earth, then the Dao and ultimately *Ziran*.

Ziran is the key term in this line of thinking. What exactly is it? It is often translated as "Nature"? Literally, the term does not mean "nature;" it only does so in an implied manner. The two-character word *Ziran* has been literally translated as "self" (the first character) and "what is so" (the second character). Ryden in Zhang, 1982:162 translates it as "what is so of itself," or for short "spontaneous." This author is of the opinion that there is a word

which exists in certain European languages derived from the Greek language, which could translate with fair adequacy the Chinese term, and that term is *autopoeisis*. The word itself comes from the Greek *autos* for "self" and *poiein* for "to produce" or "to bring forth" and thus means "self-bringing-forth" or "self-engendering." In the history of Western philosophy, it can be very aptly used in Aristotle's philosophy of biology, to characterize that property peculiar to a living entity, existing as an organizational unity and maintaining its own identity through self-generation, self-renewal, self-regeneration—in Aristotle's view, such beings possessed their own *telos*. In this sense, then, organisms are self-organizing beings. From this, it follows that there is a close enough fit between the two terms *Ziran* and *autopoiesis*.

Having made such an equivalence, one must straightway point out that the reference of the two terms is not identical in the two contexts of use, that of *Ziran* in ancient Chinese *philosophy* and *autopoiesis* when applied to Aristotle's philosophy of biology. Chapter 3 shows that the *ontological* category of *Qi* obtained in both the biotic and abiotic domains, and not merely in the former, as *Wanwu* could have a narrow as well as a broad reference and meaning. In other words, for the ancient Chinese, one could say that *autopoeisis* occurred in both the biotic and abiotic domains; these two domains and the interaction between them would for the ancient Chinese constitute the universe, *Yuzhou*. This meant that the universe exemplified *autopoesis*.

Let us make explicit what is implicit in this account of Chinese cosmology:

1. *Qi* as *Yuanqi*/Original *qi* was engendered by the Nebulous Void (following Major et al.) or the Dao which in turn engendered *Yuzhou* and then *Wanwu*.
2. As humankind is a very specific kind of *Wanwu*, the coming into existence, therefore, of *Wanwu* itself (both biotic and abiotic) had predated the appearance of the human species on Earth. *Yuanqi*, *Yuzhou*, *Wanwu* came into existence totally independent of humankind and would continue to exist independent of humankind. We could conduct a thought experiment and imagine the extinction of the human species to see what consequences would follow—we would find that all the other species (*Wanwu* in the narrow sense) as well as the abiotic domain (the Milky Way, the planets in our solar system, and even outer space—*Wanwu* in the broader sense) would persist and endure.
3. *Yuanqi*, *Yuzhou*, *Wanwu* are *autopoietic* for two reasons, implied ancient Chinese *philosophy*:
   (a) As demonstrated above, they were not the product of human activity;
   (b) Nor were they the product of a transcendent being called God—the texts and others referred to in this book were secular in orienta-

tion. Chapter 5 will show that this process of secularisation had begun as early as, if not earlier than Confucius, that the *Xunzi*, a fourth to third century BCE text, continued in this vein, categorically denying the necessity for invoking the divine/the numinous either for the creation and/or the maintenance of *Yuzhou* and its workings—everything could be explained in non-supernatural, naturalistic terms.[1] Unlike the *Laozi*, the *Xunzi* did not use the term *Ziran*. Although the *Zhuangzi* did not explicitly deal with this issue, yet its contents and its orientation indicated that it would be in the *Laozi* tradition of *Ziran*. The same holds true in the case of the *Huainanzi*. However by the first century CE, after Confucianism had been established by the Han Dynasty as its official ideology for about a hundred and fifty years, *philosophy* had degenerated into superstition, with Confucius and Laozi having been elevated to become gods and be worshipped, with statues of them, in temples (after the establishment of *Daojiao*). To some minds, the rational, naturalistic account of the world and the place of humans in it had to be re-asserted; this challenge was then taken up by a *Daojia* thinker called Wang Chong 王充 (27?—100? CE) in his collected essays entitled *Lunheng* 《论衡》.[2]

4. The term "nature" in the English language is used paradigmatically to refer to what in Chinese is called *Wanwu*, although it can also be used to refer to what in Chinese is called *Yuzhou*. So broadly interpreted, "nature" refers to *Wanwu*-within-*Yuzhou*. Following Lee, 1999: 82–84, this sense of nature may be called Nature_{c} ("c" hints at the cosmological) and is in keeping with the points made at 2 and 3 above. Following Lee (ibid), the sense of nature as exemplified in *Wanwu* may be called Nature_{nk} ("nk" stands for "natural kinds" both biotic and abiotic—plants and animals, diamonds and aluminium). Chapter 9 will explore these various senses in greater detail.
5. From the above, one see how natural it is to translate *Ziran* as "Nature." For the purpose of ease, simplicity and elegance of translation, the term "Nature" appears fine, yet from the ontological standpoint, it is profoundly unsatisfactory for the following reasons. "Nature," whether spelt with an upper or lower case "n" is a noun. As such, it is used to refer to a physical thing or physical things. Chapter 3 claims that paradigmatically, a physical thing/entity possesses two sets of properties—the A set pertaining to shape, size, and the B set pertaining to solidity, impenetrability, (relative) stability, weight. They are what the ancient Chinese *philosophers* considered to belong to the domain of *xingerxia*, to the domain of what has both substance/stuff (*you zhi*/有质) and form (*you xing*/ 有形), namely, to the domain of matter. In other words, by

translating *Ziran* as "Nature," one would be inserting the former into a framework in which it is not *ontologically* at home. Chapter 3 has also shown that *Wanwu* come from *Qi*; *Qi* is Em-ism, both energy and matter (according to the interpretation which this book espouses), whose dyadic forms of being must then itself be part of *Ziran*. Furthermore, *Ziran* is not so much about thing/things called Nature, but processes the ancient Chinese had detected to be at work which ultimately led to the emergence of *Yuzhou* and *Wanwu*, to their maintenance and sustenance (all of which are neither divinely nor humanly driven). These processes are primarily those of mutual interaction, combining harmoniously two types of *qi*, sometimes called *tian qi* (*qi* of Heaven) and *di qi* (*qi* of Earth) or *yang qi* and *yin qi*. Chapter 8 will demonstrate that Chinese *philosophy* involves what may be called process-ontology whereas Western philosophy advocated and still by and large advocates substance-/thing-ontology. That is why it is important to point out that the translation of *Ziran* into a noun/thing could be misleading. However, it remains correct to observe that Nature paradigmatically manifests *Ziran* processes at work.

6. For these reasons, it is best to translate *Ziran* as *autopoiesis*, "self-engendering processes" or "self-bringing-forth processes." It would also be acceptable to translate it as "spontaneous processes," though, perhaps, less so as "what is spontaneous" or "what is so of itself," for the reasons just made above. Although the term *autopoiesis* may be suitable and desirable, it would only work if readers are prepared to stick firmly to the original and literal meaning of this term, and to rid their minds of secondary cultural/philosophical baggage which the term has unfortunately acquired in certain quarters. For instance, two philosophers of biology, Maturana and Varela, 1980 have used the term "autopoietic" to characterize organisms as "autopoietic machines" which seems to amount to a contradiction in terms. If organisms are indeed self-organizing beings and they embody and manifest the processes of autopoiesis *par excellence*, processes which have nothing to do with human intentionality and activity/interference, then surely, it would appear strange for Maturana and Varela to call organisms "autopoietic machines." Machines, *ex hypothesi*, are artifacts deliberately made by humans, thereby embodying human intentionality and human ingenuity. What could be their motive for doing so? In the opinion of Lee, 1999: 140–148, it is to turn organisms which are paradigmatically naturally-occurring beings or "self-engendering living dynamic systems" via biotechnological techniques into human-made artefacts, to transform organisms which are autopoietic beings into technological entities controlled, manipulated by humankind to fulfill

human desires and purposes—in other words, it is to substitute extrinsic teleology (a trajectory and an orientation which is imposed from outside the organism by humans) for intrinsic teleology (a trajectory and an orientation which is endemic to or inherent in the organism *qua* organism).[3] Lee, 2012b, has also argued that what made the Scientific Revolution beginning in the seventeenth century in Western Europe possible was a philosophical revolution which, if not preceding was simultaneous with its emergence, and which underpinned it; this philosophical revolution is the ontological *volte face* of regarding organisms as machines. The single all-important methodological axiom which informs the thinking and writing of this project and its 2012b companion volume on Biomedicine is that science is never innocent of philosophy—a new philosophy had to be put in place to underpin the new science/medicine.

Heaven and Earth

The quotation from the *Laozi* (chapter 25) cited at the beginning illustrates a persistent theme which runs through Chinese culture and its classical texts, namely, the three concepts and the relationship between them: 天/*tian*/Heaven, 地/*Di*/Earth, and 人/*Ren*/Humankind, called, as already mentioned 三才/*sancai*, the Three Talents or the Three Powers. In the *Xunzi*, we find that Xunzi 荀子 (ca 312–230 BCE) had written these phrases: 上失天时, 下失地利, 中失人和 *shang shi tianshi*, *xia shi deli*, *zhong shi renhe* (《荀子·富国》). This set of phrases was meant to point to the most important piece of wisdom in life and can be rendered generally in terms of two versions. The quotation above casts it in a negative form: all affairs would turn out disastrous should one ignore or violate the patterns or regularities of Heaven (Time), the advantageous locations afforded by geography on Earth below (Space) and/or deviate from harmonious conduct between fellow humans (the domain of human affairs). Cast in a positive form, it could read: all affairs would turn out fine provided one does not ignore or violate the patterns or regularities of Heaven above, the advantageous geographical locations/positions on Earth below and/or deviate from harmonious conduct between fellow humans. A more common or popular version runs as follows: 上知天文,下知地理, 中知人事 *shang zhi tianwen*, *xia zhi dili*, *zhong zhi renshi*. This can be rendered as: Know astronomy (Time), know geography (Space) and know human affairs (human domain). The passages may loosely be summed up (by this author) as follows:

> All human knowledge is encompassed within astronomy and geography. To know what there is to be known about what happens in Heaven above and what happens on Earth below is to know everything, and in particular, the relationship

between astronomical phenomena, on the one hand, and terrestrial phenomena, on the other. Also equally important, if one also knows the nature of humans and their place within this web of relationships between Heaven and Earth, then one would not simply be a walking encyclopedia but wise.

This, in a nutshell, is Chinese cosmology and Chinese *philosophy*.

Let us then first look at Heaven. What do the ancient Chinese know about astronomy? According to tradition, China's first astronomer was called 阏伯E Bo, who lived about four thousand years ago. Many legends surround his life; one said he was born from an egg of a bird, the bird swooping down to the river in which his mother was bathing, impregnating her with its egg. He helped the great Yu (in the Xia Dynasty) to control the floods of the Yellow River. He established his observatory in Henan Province, and was responsible for the lunar calendar to help determine the times for planting and harvesting as well as the twenty-four divisions of the year, called 二十四节气/*ershisi jie· qi*.[4] Upon his death, people honored him as a god. Today his temple (E Bo Tai/ 阏伯台or Huo Shen Miao/ 火神庙) in Henan Province is dated from the Yuan Dynasty (1279–1368 CE). Legend had it that he was buried in the site of the temple. Archaeologists recently have excavated it but they found no burial; however, they did find a lot of pot shards belonging to the Spring and Autumn Period (of the Zhou Dynasty), which shows that the cult of honouring him had already begun then, if not earlier. He was guided by his study of the passage in the sky of the star, Antares (which the ancient Chinese called 大火 星*dahuoxing*) in the Scorpio Constellation (心宿 /*xīn xiǔ*), to help him draw up the lunar calendar and determine its main features.[5]

Archaeological research in China in the last six decades or so has made great strides forward in ancient Chinese astronomy. In 1958, a Neolithic burial site belonging to the late Neolithic Longshan Culture (龙/龍山文化, ca. 2300–1900 BCE) was first excavated at Taosi in Shanxi Province (山西陶寺). After several decades of study, Chinese archaeologists announced in 2005 that they have identified a structure on the site which points to it being a solar observatory; of late, one of China's leading astronomers has even claimed that it could be the earliest observatory in Chinese history. In 1987, another Neolithic burial with astronomical information dated even earlier, was excavated in 1987 at Xishuipo, Puyang, in Henan Province/河南濮阳西水坡, belonging to the Yangshao Culture/仰韶文化 (ca. 5000–2800 BCE). One of the graves has preserved intact details in the burial arrangement which have cosmological and astronomical significance. The body, probably that of a tribal chief or even shaman/astronomer, was laid out in such a way

that the southern face above the head was round while the northern face at the foot of the body was square. This is entirely in conformity with Chinese cosmology which held that Heaven was round and Earth square, (although this expression, as we shall see, later in chapter 7, is not to be taken literally). Flanking the body to the East is the outline in white mussel shells of the dragon, and to the West that of the tiger. These referred to constellations in the Chinese sky. The *Beidouxing*/ Northern Ladle ("Plough")/Great Bear/Big Dipper was represented, pointing toward the head of the dragon. After carbon 14 as well as tree ring dating, the consensus is that the tomb arrangement appears to be a representation of the Chinese sky at the time of the burial, nearly 6,500 years ago. (But if this claim is upheld, then it would even predate the usual date given for the beginning of the Yangshao Culture.) All this suggests that the Yangshao people were knowledgeable about astronomy, at least, to the extent that they were attempting to orientate the tomb in accordance with the movement of the Great Bear.[6]

The Chinese were noted for having kept excellently accurate records of astronomical phenomena such as solar eclipses, comets, supernovae, over four thousand years, some dating from as early as the Shang Dynasty.[7] But they are not generally credited with having made "theoretical" contributions to the subject of astronomy itself. The Copernican Revolution is often cited as the beginning of modern astronomy as a proper science. It is true that the ancient Chinese did not articulate heliocentrism, but there are passages which exist in some texts which imply that they have an implicit grasp, almost, of that thesis. Take the passage in the《尚书》/*Shang Shu*, *Classic*/*Book of Documents*, considered probably to be China's earliest traditional literature, with material dating from the Western Zhou Dynasty,[8] which reads: 地有四游, 冬至地上行北而西三万里, 夏至地下行南而东三万里, 春秋二分是其中矣。地恒动而人不知, 譬如闭舟而行不觉舟之运也。《尚书纬.考灵曜》 This author's rendering reads:

> Earth makes four journeys. By the winter solstice, it would have moved in a north-westerly direction for thirty thousand *li*; by the summer solstice, it would have moved in a south-easterly direction for thirty thousand *li*. For the two equinoxes, spring and autumn, it would have moved half the distance between the two solstices. The Earth moved, yet we on it did not feel it to move—it was like being shut in the middle of a boat, in an enclosed viewless space when we, too, would not feel the boat move.

It clearly stated that Earth moved, and implied a fairly good grasp of the relation between Earth and Sun, although it did not say that it moved around the Sun, while the Sun stood still.

A passage which displays some theoretical insights regarding planetary motion can be found in the *Neijing* (a foundational text in Chinese *medicine*, as we know). The first reads: 九星悬郎, 七曜周旋。《素问: 天元纪大论. This author's rendering reads: "The nine stars illuminate the skies and the seven heavenly bodies revolve in space (that is, interstellar space)." The second is about Earth's position in astronomical space: 帝曰: 地之为下否乎? 岐伯曰: 地为人之下, 太虚之中者也。帝曰: 冯凭乎? 岐伯曰: 大气举之也。《素问: 五运行大论》This author's rendering reads: "Yellow Emperor: Earth is below (Heaven), is it not? Qibo: Humans are upon Earth, and Earth is in (interstellar) space. Yellow Emperor: Is Earth supported by something? Qibo: It is supported by (Nature's) *qi* (in space in the sky)."

For the ancient Chinese, the passage of time was marked primarily by the motion of the Sun as observed from its daily rising and its setting (*zhouye jielü*/昼夜节律), as well as by the passage of the four seasons (*sishi jielü*/四时节律). Let us first talk a little about how time was measured in ancient China which was predicated upon the (apparent) motion of the Sun. However, as usual, it would be fitting to follow a general point in Chinese scholarship, namely, to look at the terms used to express concepts from the history of their philological beginnings in order to extract meanings and implications from them. To recap briefly, to date, in the history of Chinese writing,[9] the earliest systematic, mature form is what is called the Oracle Bone Script dating from the late Shang dynasty, for which there is plentiful archaeological evidence. There are numerous scripts later than that which we shall also have occasion to look at. Another source consulted ancient dictionaries, especially that by the Han philologist Xu Shen which was completed in 100 CE—this work is still considered today to be authoritative in spite of the fact that it is known to contain errors. In the light of these general remarks, let us turn to see how in the various scripts,[10] the character for time (*shi*) was written—see figure 4.1 below.

A is the Oracle Bone Script; its bottom component is the character for "sun" (see Figure 4.5); the top component is the word for 之 which means "moving about." The word then really referred to the sun's passage across the sky. This portrayed the daily rhythm of day and night (*zhouye jielü)*. In B (Lesser Seal Script) and C (Clerical Script), there had been a change in the construction of the word, showing an enrichment of meaning. In B, the graph for "sun" had moved to the left (now functioning as the radical for the word); the right component itself had two parts to it—the top being the word for 之, and the bottom showed the word for "hand." However, in this version, the new meaning is not too clear although in C, matters have clarified. The richer meaning embedded in the construction in this version may

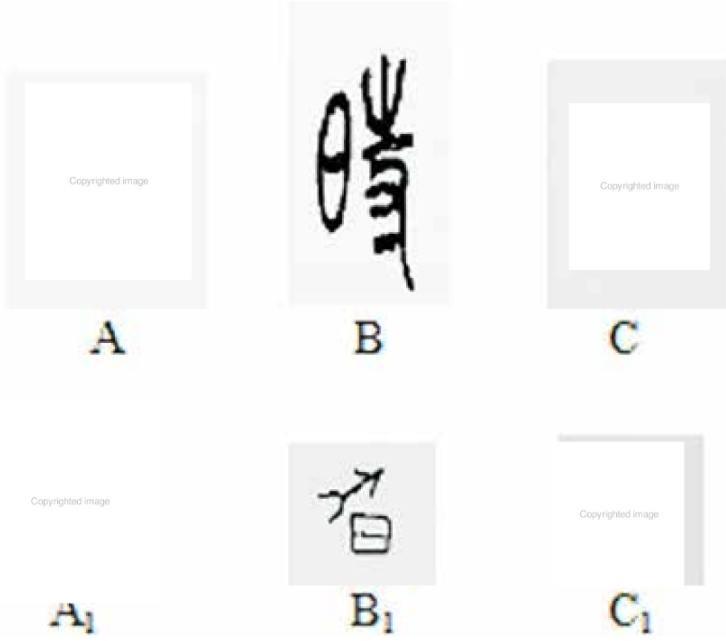

Figure 4.1. Character "shi" in various scripts

be interpreted in two ways.[11] The first simply said that the radical for "sun" 日on the left obviously showed that the word was connected with the Sun and its activity; the second component on the right 寺 *sì* contributed the sound. The word refers basically then to ceremonies to mark the seasons—at each season, the king/emperor had to perform certain rituals to welcome the Spring, to thank Heaven for the harvest in the Autumn and so on.

However, there is another interpretation, a more interesting and complicated analysis. One finds that the right component had two parts—the top component on the right was for Earth or the ground 土 *tu*; the bottom component on the right for a unit of measurement, the Chinese inch which was 寸/*cun*. What they are telling us is that time was measured (on Earth) in terms of the motion of the Sun (or in today's correct astronomical language, the apparent motion of the Sun) in the course of the day as well as in the course of a year across the heavens. In other words, this new construction introduced two innovations: the word for Earth or ground as well as that for a unit of measurement. These in turn brought out two further points: first that the notion of time, since the Oracle Bone Script version, had come to be understood not simply as an astronomical matter (about the movement of the Sun) but also an astronomical matter which involved Earth. That is to say, it

is both an astronomical (Time) as well as a terrestrial matter (Space), as the Sun's (apparent) movements were related to Earth and could be ascertained on Earth, that what was important to grasp was the relationship between Heaven and Earth.[12] Second, the new construction embodied a technique for measuring the (apparent) motion of the Sun. The *Zhou bi suan jing*/*The Arithmetical Classic of the Zhou Gnomon and the Circular Paths of the Heavens* mentioned, among other things, such a technique.

What then was this technique and what sort of instrument did the ancient Chinese use to measure the passage of time? The instrument was the gnomon,[13] called 碑*bei* or 表*biao*. In its simplest form, it was nothing but a long pole whose length varied from ten Chinese feet in the early period, to eight over a very long period of more than a thousand years, before reverting to ten in the Qing Dynasty with the arrival of Jesuit astronomers at the Qing court. This was firmly planted in the ground. In setting up the gnomon, care must be taken to ensure that the pole was absolutely straight and that the ground was absolutely level. To get the latter right, even before Han times, the astronomers looked at the level of water in a bowl. Before the Tang Dynasty, they used to tie eight cords from the top of the pole forming four angles and stretching to four points on the ground, so that they faced one another exactly. In the course of the day, from sunrise to sunset, as the sun shone on the pole, the ancient Chinese astronomers would notice that the pole cast a shadow on the ground. In figure 4.1, A_1 is the Oracle Bone Script, which shows a hand holding what looks like a long pole. The other two, B_1 and C_1, show the sun and a person's shadow at different angles in the course of the day. The shadow got shorter and shorter as the sun rose higher and higher in the heavens until at noon or round about noon, the shadow was at its shortest; but after the sun had reached the zenith at noon, the shadow would correspondingly get longer and longer as the afternoon wore on. At sunrise and at sunset, one would mark the shadows cast by the pole. If one were to join up the two markings, one would get the east-west direction. Scholars have pointed out that the *Book of Odes*/*Poerty*《诗经》*Shijing*, of the early Western Zhou Dynasty, already mentioned how to determine the east-west direction. If one were to draw the shortest line from the base of the pole to the east-west line, this would point to the north (in the northern hemisphere).

By measuring the length of the sun's shadow each day, in the course of the year, the ancient Chinese astronomers would also have noticed that the shadows measured differently, and were thus able to determine the solstices which by Shang times were called *zhì*/至. This shows that as early as the Shang Dynasty, the ancient Chinese knew about the summer and winter solstices (夏至/*xiazhi* and冬至/*dongzhi*). The ancient Chinese also worked out

the spring equinox, 春分/*chnnfen* (around 1100 BCE) and the autumn equinox, 秋分*qiufen* (*fen* means, in this context, that day and night are equally divided). For instance, in *The Spring and Autumn Annals and the Tradition of the Zuo Commentary*《春秋左传》(*Chunqiu zuo zhuan*, a chronicle of events in the state of Lu, during the Spring and Autumn Period), there is a passage, which referred not only to the solstices, but also to the equinoxes: 凡分至启闭必书云物《左传僖公五年》.[14]

To observe the shadow of the pole and to measure it, the Chinese used a measuring tablet called the 土圭*tugui*. This device was as ancient as the gnomon as it was also mentioned in the *Zhou li*《周礼》*The Rites of Zhou*, probably dated to the third century BCE, and the *Kaogongji* 《考工记》*The Manual of Crafts*, which was the first important official book detailing the arts and crafts industries, such as leatherwork, metalwork, dyes, carpentry, pottery, and scraping in ancient China, dated to the latter part of the Spring and Autumn Period. In reality, the ancient astronomers only measured the shadow for the summer solstice as it would be somewhat inconvenient to measure the much longer shadow in the winter. They simply calculated the date of the winter solstice rather than use observational data to determine it. The Chinese believed that the shadow of a gnomon of eight Chinese feet at the summer solstice would diminish by a (Chinese) inch for every thousand Chinese miles as one moved southward, and that it increased by an inch for every thousand miles as one moved toward the north.[15]

There is an expression which implicitly refers to the two solstices: 立竿见影 *lì gan jian ying*. At the summer solstice, the sun is at its zenith over (what today we call) the Tropic of Cancer, and that is why the northern hemisphere enjoys its longest hours of sunlight. The reverse obtains at the winter solstice when the sun is at its zenith over the Tropic of Capricorn, and that is why the northern hemisphere is exposed to the shortest hours of sunlight or daylight. At the summer solstice, at noon, the pole cast no shadows at the Tropic of Cancer, but at the winter solstice, the pole would cast the longest shadow in the northern hemisphere. This method of measuring the apparent motion of the Sun served as a metaphor which amounted to saying that a certain action taken or policy implemented was immediately effective.

We next need to say something briefly about some words which are so ancient that it looks as if they had existed even before the emergence of the Oracle Bone Script, although it is true that they only existed as severely limited fragments today. For instance, one such word is 日 *ri*, which means "sun." This word is highly significant in any attempt to understand Chinese cosmology and *philosophy* because it would not be too far from the truth to say that the Chinese mode of thought was/is deeply informed by the Sun

and its effects on our planet, Earth. The earliest forms of the word are found in a Neolithic culture—one of many in pre-historical China—called the Dawenkou Culture/大汶口文化 (4500–2500 BCE), named after the place in which many artifacts have been found, in today's Shandong Province. In the 1960s, a farmer, turning over the soil in the Juxian County[16] found some pottery with some "drawings" on them. A well-known palaeographer then thought that these were not mere drawings but were inscriptions. However, this view was not taken up seriously until the discovery in the 1980s of some thirty tombs belonging to the late Dawenkou Culture, and some wine vessels were excavated with twenty similar stylised "pictures" or "drawings." By 2000, scholars were able to announce that they had identified fourteen of them as proper writing and deciphered them as seven characters for *fan*/凡/"ordinary," *nan*/ 南/"south," *xiang*/ 享/"enjoy." Three other characters deciphered are related to "sun":

A is the simplest, with a round sun floating on what might be a cloud. B shows the sun having risen over the top of a mountain—there is indeed a mountain due east of Juxian County and the graph could be the word for 旦/*dan*/"dawn"—this would reflect what the Neolithic people saw, the sun rising above the mountain in question, when they looked East. C seems to show the sun's rays spreading out in all directions.

A B C

Figure 4.2. Pictograms related to "sun" in Dawenkou Culture

Archaeologists and palaeographers have also found that these characters share similarities and meanings with the forms in the Oracle Bone Script and other scripts and that the latter had evolved from the former;[17] so we need to look at those (the character *ri*), too.

Figure 4.3. Character "ri" in various scripts

A is Oracle Bone Script. Why does it differ from the earlier Dawenkou representation of the Sun by being either hexagonal or pentagonal, and not round? This is not because the ancient Chinese had suddenly misperceived the Sun to be six- or five-sided. Rather it is because the script had to be carved on hard material, either ox shoulder blade or tortoise shell; as such, the scribe found doing a circle almost impossible to achieve. In the Bronze Script (used in bronze vessels)—see B—where the scribe wrote on a soft mould of earth/clay (like the Dawenkou potters) before the vessel could be cast in bronze, the character was round/roundish. C is Lesser Seal Script which followed another set of rules for writing characters, rendering them more stretched length-wise as well as more square-ish at the same time. This process of altering the shape of the written character was carried out even further by later scripts until we get to D, looking distinctly rectangular, a shape the word has retained up to today. Another point worth making is that a dot appeared in the middle in A and B (which later appeared as a line in C and D)—this concerned the way in which the ancient Chinese came to observe the sun. Apart from looking at it in the sky (before the sun got too bright for gazing at directly by noon), another common way of observing it was via its reflection in water which showed it to be round with a dark spot in the middle of the circle. B is a perfect pictograph of it.[18]

Another heavenly body which pre-occupied the ancient Chinese greatly is the Moon. In the various scripts, the character (*yue*) is shown in figure 4.4.

A is in the Oracle Bone Script, which represented the moon as a crescent, not a full moon. This was for two reasons: (a) the crescent moon occurred twice in a month whereas the full moon only once; (b) more importantly, if the full moon were to be used to represent the moon, then

Figure 4.4. Character "yue" in various scripts

it was very easy to get it confused with the script for "sun." B is the Bronze script; by then people had added a dot to the middle of the crescent moon to represent what they could see on the surface of the Moon when conditions were ripe. C is the Lesser Seal Script, D the Clerical Script, while E is the Standard Script which simply shows the developmental stages in accordance with the general rules in the evolution of the Chinese scripts.[19] A and B reflected how carefully and accurately the Chinese people in earlier times observed the Moon.

We have already earlier referred to the astronomical achievements of the Yangshao Culture regarding what in the West is called the Great Bear, but which in *Daojia* literature is called *tiangang*/天罡.

In today's astronomical maps, this configuration (strictly speaking an asterism) is called *Ursa Major*/the Great Bear.

The seven stars are listed in the map above; their Chinese names are: *Tianshu*/天枢, *Tianxuan*/天旋, *Tianji*/天玑, *Tianquan*/天权, *Yuheng*/玉衡, *Kaiyang*/开阳, *Yaokuang*/摇光.[20] Like many other civilisations, the ancient Chinese used the Polestar (*bei ji xing*) as their point of reference; if one were to draw an imaginary line in the map above from Merak to Dubhe

Figure 4.5. Daoist tiangang formation

Figure 4.6. Ursa Major/Great Bear

and then out of "the cup," and continuing five times the distance between Merak and Dubhe, one should arrive at the Polestar/Polaris. The ancient Chinese observed that relative to the Polestar, the *beidouxing* moved in a certain way around it during the course of the year. In a text which can be dated probably to the Warring States Period called the *Heguanzi*/《鶡冠子》/*Pheasant Cape Master*,[21] a passage reads: 斗柄东指, 天下皆春, 斗柄南指, 天下皆夏, 斗柄西指, 天下皆秋, 斗柄北指, 天下皆冬. "If it (that is, the handle of the Seven Dippers) points east; in the world it will be spring, if it points north, in the world it will be summer; if it points to west, in the world it will be fall; if it points to north, in the world it will be winter (Wang, 2012: 26)."

This passage may conveniently be used to introduce the important theme in Chinese thought that astronomical and terrestrial phenomena were inextricably linked, that Heaven and Earth cannot be understood except in this light—one, therefore, has to know not only astronomy but also geography. Heaven was about astronomy (Time) and Earth about geography (Space), Time and Space being interlinked. However, what was of crucial significance was the relationship between them, namely, that the seasons on Earth (which were of such importance to the survival of Life on Earth) were related to events which happened in Heaven. (Chapter 10 discusses Timespace *Wholism*.)

Geographical locations on Earth are broadly determined by the four compass points, what in the West are conventionally sequenced as North/South/East/West, but which the Chinese sequence as East/South/West/North. What do the words for the four directions look like in the various scripts in the history of Chinese writing?[22]

East/*dong*/东 is, of course, where the Sun rises; it is a place one associates with daylight and sunlight; sunlight makes things grow.[23] The word looks

Figure 4.7. Characters denoting the four main compass points in various scripts

like this: A_1, the Oracle Bone Script and B_1, the Bronze Script, were fairly similar; they seemed to show an enlarged bulbous stem with leaves at the top and roots down below. By C_1, the Lesser Seal Script and D_1, the Clerical Script, it is easy to see that the word had two components: one for "sun" 日*ri* and the other for "wood" (derivatively "tree")/木/*mu*, the one being superimposed on the other. The word created was then called a meaning compound/会意字/ *huiyi zi*. It suggests the sun coming through the trees in a forest and is compatible with the notion that plants grow where and when the Sun rises.

West/*xi*/西 is where the Sun sets; and when the Sun sets, the birds return to their nests, their resting place for the night. In A_2 and B_2 (Oracle Bone and Bronze Scripts), the word looks like a bird's nest. To appreciate the

image in A_2, you have to turn the page counterclockwise so that it is horizontal. C_2, the Lesser Seal Script, had an additional bit to the nest to show more explicitly that it was a bird's nest, the extra bit "hovering" over the nest represented the bird. By D_2, the Clerical Script, the word had become abstract and stylised, looking like today's writing of it.

The character for *nan*/South/南 in various scripts are shown in A_3 (Oracle Bone), B_3 (Bronze), C_3 (Lesser Seal), and D_3 (Clerical).These had given rise to different interpretations, but the one which is pertinent to our concern here had two components. The first component was the word for "door" and inside that was the word 幸/*xing*, meaning "good fortune." In the history of Chinese architecture from time immemorial, the door faced South, in order to get the sun. To live facing South—enjoying the warmth of the sun, where things grow—is to enjoy good fortunes, which explains the construction of the character for "south."

The character for "north"—北/*bei*—follows the logic of the explanation for "south." The sunny position is the south-facing one with the north side being sunless, cold, and dark. Hence, when one sits, one faces south, with one's back to the north. The character for "north" embodies this fact, as can be seen in its various forms below (E_4 is simply the Standard Script which is still used today, since the early Han Dynasty, while A_4, B_4, C_4, and D_4 are the Oracle Bone, Bronze, Lesser Seal, and Clerical Scripts. The original meaning of 北*bei* was "to run counter" (showing two people going in opposite directions) and was related to the word 背/*bei*, meaning "back," whose top component, as you can see, is北/*bei*. In the context of the general environment as well as of architecture, north was the direction, as already commented on, to which people turned their back, as that was the side from which the bitterly cold winds come sweeping from the Mongolian steppes.

Two words which have even greater cosmological significance than those we have so far looked at are 天 *tian* (Heaven) and 地*di* (Earth).

Tian[24] looks like this (see first line of figure 4.8): A1/A2 are two different forms of the Oracle Bone Script, while B is the Lesser Seal and C, the Clerical Script. In A1, a square sits on top of the character for "large," 大/*da*. The square represented the head of a person. Hence, the original basic meaning of 天 *tian* was "the top of the head." In B, there is a change—the head is replaced by a line over the character 大. As a result, Xu Shen (who worked with the Lesser Seal Script of his time) wrote that *tian* not only stood as the polar contrast of Earth but also derivatively as that for which nothing could be higher, the highest. In Chinese cosmological understanding, *tian* is supreme, and humans, no matter how grand or important they

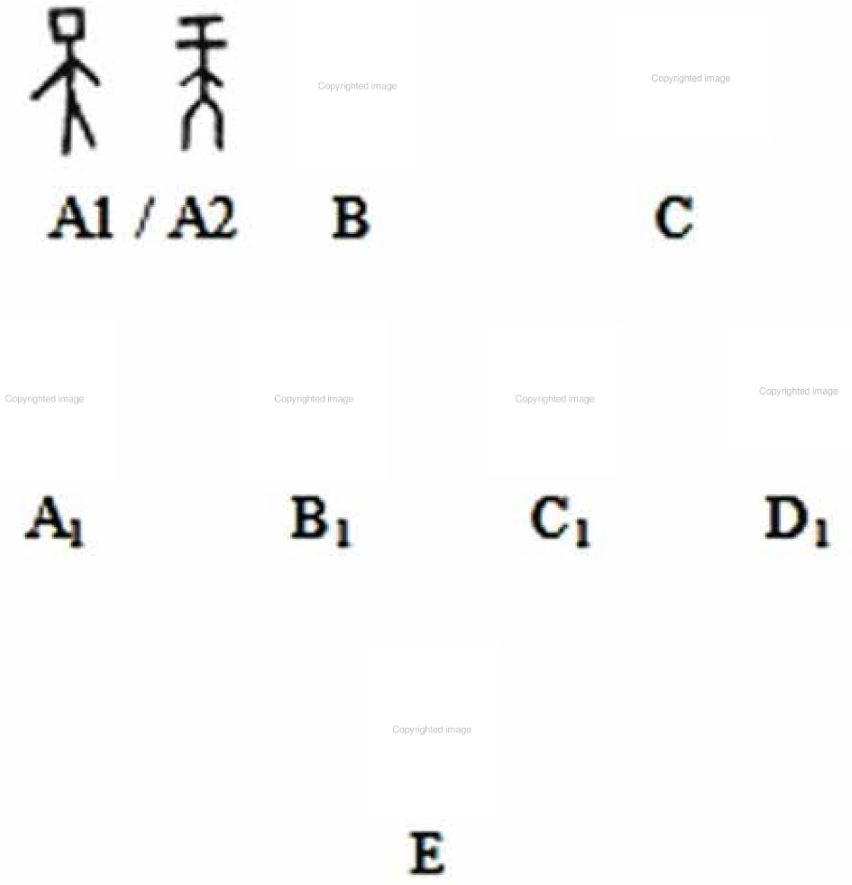

Figure 4.8. Characters "tian," "tu" and "di" in various scripts

fancy themselves to be, are subject to the constraints of *tian*. *Tian* watches over us, and humans turn to it for protection. When they suffer injustices for which they get no redress from emperors/officials/enemies/uncivilized neighbors, they hope that *tian* might dispense justice on their behalf. Not even the most mighty emperor would dare to put himself above *tian*; he humbly called himself "Son of Heaven" 天子/*tianzi* and he ruled only by the grace of the Mandate of Heaven 天命/*tianming*, a political concept of legitimation invented by the Zhou Dynasty. Chinese culture, ever since the demise of the Shang Dynasty, has turned its back, by and large, on the notion of a transcendent being, called God; instead it has opted for *tian* to ground not merely its cosmology but also its morality. *Tian*, together with *di*/Earth, constitute the concept of *Ziran* (or in an implied manner Nature), a concept which has

profoundly informed and shaped Chinese *philosophy*, Chinese *science*, indeed, every aspect of Chinese life over the millennia.

A cognate term of *di* is 土/*tu* (see second line of figure 4.8) which means soil/earth; in modern Chinese, the two words are put together to form one word *tudi* to refer not only to cultivated land but also to territory. In figure 4.8 A_1-D_1 show the various scripts for *tu*. Basically, A_1 and B_1 (Oracle Bone and Bronze Scripts) seem to show a mound of earth—the bottom horizontal line represents the ground on which the mound stands. In C_1, the Lesser Seal Script, the mound has disappeared. In its place is another horizontal line which represents the topsoil while the bottom horizontal line, the soil below ground; the vertical line represents a plant sticking out of the soil. Not all scholars agree with this interpretation, but it seems a plausible one.[25] Naturally, good wholesome soil is absolutely essential for cultivation. We must, therefore, respect the soil. D_1 is the Clerical Script.

Let us now look at the main character for Earth, 地/*di*[26] in the Lesser Seal Script (E in figure 4.8). The word has two components: the *tu* radical is on the left and the second on the right refers to the female genitals and its parts. This then shows very clearly that the ancient Chinese considered the soil/earth as the source of all life. We know that plants are basic to terrestrial food chains: plants, herbivores, then carnivores. There can be no carnivores if there were no herbivores and there cannot be herbivores without plants. In that crucial sense, *di* makes Life possible; it is therefore, Life's womb, just as in the case of mammals, without females there can be no reproduction and no birth. Earth is then Mother Earth (many other cultures share this view from time immemorial). So it is all very fitting that Mother Earth should be respected. We, humans, are Earth- and earth-rooted beings; as such, we cannot, for a moment, whether we are carnivores, vegans or omnivores keep ourselves alive without Earth. We live on Earth. Apart from food, we also make use of its other resources, wood, fuel, water. Where do we get them? From the ground. Wood comes from trees, and trees grow in the soil. Fire comes from burning wood while peat, coal, ultimately, come from trees and plants which once grew in the soil. We are beings beholden to Earth in all ways. Significantly, too, we cannot live without water; but the relationship between water on the one hand and vegetation and soil is a complex and intimate one—without water/水/*shui*, nothing would grow, nothing would thrive, but without soil for plants to grow on, water would also diminish or even disappear altogether. In sum, to understand 水土/*shuitu*, is to understand Life. It is also to understand the place of humans in that ecological web of life.

We know, too, that even if Earth is fertile, its fertility would remain a potentiality unless the Sun gives Earth heat as well as light. The ancient Chinese

might not have a science called photosynthesis but all the same, they showed an excellent grasp of what that science today tells us. That is why in Chinese cosmology, *Tian* and *Di* are such supremely important concepts. It is no exaggeration to say that all aspects of Chinese culture (including Chinese *philosophy* and Chinese *science*) rest on our understanding of the ways of *Tian* and *Di*, the complex relationships between them, and our own place in it. That is why it seems fitting to call Chinese cosmology and Chinese *philosophy* an "ecosophy" and the science implied by such a framework "ecosystem science"—but more of that, as the book unfolds, especially in chapters 10 and 11.

Why is it so important to know about *Ziran* processes at work and the regularities which we humans could detect and discover in the natural phenomena around us and to act in accordance with them? One answer usually given is that Chinese culture and civilization were based on agriculture; the harvest depended on knowing as much as one could about weather conditions and anticipating the changes to them as the year or the seasons unfolded. This explanation is undoubtedly correct, but only up to a point. From archaeological evidence, as already pointed out, the Neolithic peoples occupying part of what today we call China were not primarily/wholly agriculture-based, but depended on hunting, gathering, yet they knew their astronomy. One could also explain their interest in astronomy as basically tied up with their interest in astrology—this, too, would be correct. Another attempt to explain such a pre-occupation is to say that the successful conduct of military affairs presupposed availability of such knowledge. That, too, would be correct, by Shang times, if not during the Neolithic period of Chinese history. However, no matter how intimate the link between astrology and astronomy, between astrology/astronomy and the military, between astrology/astronomy and hunting/gathering or sedentary agriculture, one should still be able to distinguish the motive for wanting to have such knowledge from the knowledge itself; furthermore, it remains plausible for one to argue that the astronomical observations and understanding of these ancient peoples could be evaluated in their own rights as their attempt to do *science*.

Let us engage in another thought experiment: suppose we simply stumbled upon the Neolithic burials but had no knowledge whatsoever about any cultural beliefs about such peoples, the existence of shamans in their lives, that the shamans were held by them to mediate between humans and the gods above and so on. It is not impossible nor implausible to imagine a dedicated team of astronomers today who is also informed by the history of astronomy in their own and other cultures to work out eventually what the astronomical framework within which those Neolithic peoples had set out the burial of their dead. In other words, it is possible to "excavate" the astronomy behind

the astrology. As a matter of fact, as the process of secularization kicked in in ancient China, thinkers of one description or other (whether they called themselves *Daojia* or *Rujia*) began to detach to a greater or lesser extent the astronomy from the astrology. This, however, should not be interpreted as the denial, nevertheless, of a persistent link between astronomy and astrology. When the *Laozi* declared that humankind must follow Heaven's *dao*, Earth's *dao*, the Dao and *Ziran*, what it appeared to tell us to comply with, and not violate, was not some shamanic astrological findings and instructions, but simply the patterns and the regularities which could be detected and discovered in *Ziran* processes. Hence above all, the wisdom of following the Dao/*Ziran* was not simply relevant to limited, specific pre-occupations and interests such as ensuring the success of hunting, fighting battles, harvesting, divining, astrological/shamanic mediating/communicating with the god or gods above, but that following the Dao/*Ziran* was the only method available to a people/civilization which had departed from the ready path of Revelation. To this topic, this book will return in due course.

Some further concluding remarks about the limited discussion above of the concepts of *Tian* and *Di* must be made in order to prevent misunderstanding about this particular interpretation of them:

1. As we have already commented upon, it focuses on them from the angle entirely of astronomy and geography and the relationship between the two. As such, it is not meant to deny that in ancient Chinese thought, as just now emphasized but bears repeating, astrology and astronomy were intimately linked. This aspect of the subject is acknowledged in chapter 5 in which the *Yijing* is presented as *au fond* a divinatory text. Nevertheless, the point to grasp is that it is not merely and only such a text, as the divination itself rested on an understanding of the processes at work in the cosmos, in what in the *Laozi* is called *Ziran* which stood for the patterns and the regularities in which the heavenly bodies moved or appeared to move, the effects of such movements on Earth, their implication for Life on Earth and so on. Today's astronomy might not be over impressed by astronomy done with the naked eye but all the same, this lack of high tech did not prevent even the Neolithic peoples from making accurate observations and inferences from them. Similarly, we moderns might not be overimpressed by the low tech methods used by early ancestors to make observations and inferences based on them about the north, the south, the east, and the west in terms of the passage of night and day, of the four seasons in a year. However primitive the technology involved, it remains true

that the ancient Chinese observers did do their astronomy and their geography (that is their *science*) to further their divination activity but that this *science* had gone hand in hand with their *philosophy* of *Ziran*, as articulated by the author(s), for example, of the *Laozi*, but which were already present in an implicit form in the *Yijing*, the divinatory text itself.

2. Furthermore, as we shall go on to show in the chapters to follow, how the *philosophy* which can be excavated from the divination text itself has methodological implications for doing Chinese *science* (and therefore also Chinese *Medicine*)—indeed, it has yielded a very powerful set of analytical tools not only for doing *science* in the Baconian understanding of the term "science" but also in the broader understanding of the term as "wissenschaft." As such it has yielded *sciences* in numerous and very different domains, such as rulership, military affairs, conflict resolution, and management, just to mention a few.
3. We also must bear in mind that the *Ten Wings* of the *Yi* have made additional meanings to the terms *Tian* and *Di*, naming them respectively *Qian*/乾 and *Kun*/坤, each with its own distinctive properties, understanding of which entered into numerous domains including *medicine*, rulership, military affairs, gender relationships, as well as divination.
4. In general, one would like the reader to bear in mind that this discussion here is but a very partial and limited understanding of the concepts of *Tian* and Di in the entirety of Chinese thought on the subject of their relationship as well as between them and humankind. However, a possible and plausible justification of this partial account rests on drawing attention to the fact that the *Yijing* is not a simple divinatory text per se, but that the divination could be said to rest on something which had to do with an understanding of astronomy (*Tian*) and geography (*Di*) as well as a grasp of *Ziran* processes (not withstanding that the concept *Ziran* is not found in the *Yijing* itself nor for that matter in the *Yi*) embedded in the unfolding of the phenomena which the ancient Chinese people observed around them.

Dao

We have so far given an interpretation of *Ziran*, *Tian*, and *Di*. From the *Laozi* quotation cited at the beginning of the chapter, the Dao is said to follow *Ziran*. Why is there a need to interpolate another term between *Tian* and *Di* on the one hand and *Ziran* on the other? If it is intended to do real work, what could it mean and imply?

Once again, we begin by looking into its deconstruction, calling up the word in the various ancient scripts—see figure 4.9. Scholars have noticed that so far their study of the Oracle Bone Script has not enabled them to decipher the word for *dao*—it is, therefore, "not proven" whether the word existed in the Oracle Bone Script.[27]

The earliest versions so far located were in the Bronze Script, one of which is shown as A; B is the Lesser Seal Script, and C, the Clerical Script. Note that the Bronze Script version is distinctly different from B and C but which, from our point of view, is more interesting. This is because it exhibits two components which show more clearly the meaning of *dao*, usually translated as "way." One component has something to do with the word *xing* written today as 行. So we need to elucidate this component/word first. A_1 is the Oracle Bone Script; B_1, the Bronze Script; C_1, the Lesser Seal Script; and D_1, the Clerical Script. (Note how today's script for the word [行] is not really different from D_1.) A_1 and B_1 show very clearly that what is represented is a major crossroad, with through roads from East to West

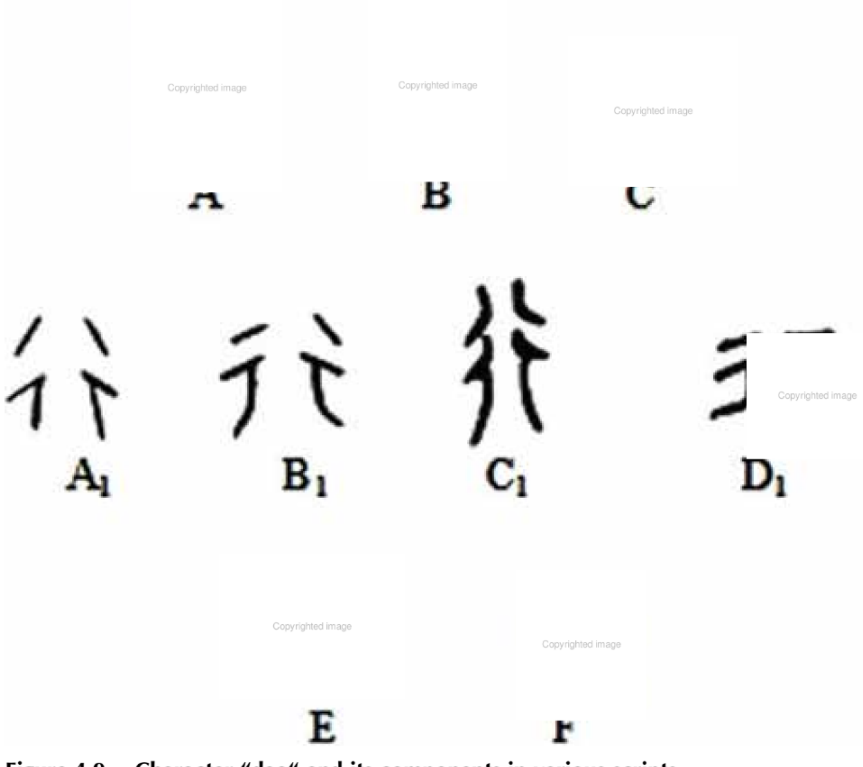

Figure 4.9. Character "dao" and its components in various scripts

and from South to North; hence its original meaning is "road" (as a noun). When humans walk, they walk along a road; hence, a derivative meaning is "to walk" (as a verb), which is the meaning given by Xu Shen in his dictionary, though acknowledged by him to be a derivative meaning of the word. Do bear in mind that Xu Shen was working with the Lesser Seal Script, C_1 above, and he did not know that the Oracle Bone Script had existed much earlier. But since the discovery of that more ancient script at the turn of the twentieth century, scholars could see more clearly the original meaning of the word.[28]

The word for *dao* involves two words in its construction, that for *xing* (commented on above) and that for *shou* 首 meaning "head," both coming from the Bronze Script.[29] We can see this is so by examining closely A and B above for *dao*. We see a head as shown under E in figure 4.9[30] inserted between the two arms of *xing*. Invoking the head is simply a well-known exercise in synecdoche, a figure of speech, in which a part is used to stand for the whole; the head stands for the whole human being along the road. (In turn, *shou* is also used to refer to a leader.)

Another interpretation to which Version A of *dao*, in particular, may be prone is as follows: *dao* actually represents the process of birth in mammals: it shows the emergence of the head of the baby through the birth canal. This in turn is used to stand for the capability of Heaven and Earth to support and sustain the continuity of life on Earth. Such a way of looking at *dao* would then be in keeping with the *Laozi*'s concept of the Dao, which is said to engender all life forms, to be the basis of Life. A passage in chapter 6 of the *Laozi* appears to hint at this interpretation: 谷神不死, 是谓玄牝。玄牝之门, 是谓天地根。绵绵若存, 用 之 不勤。One translation reads:

> The valley spirit never dies;
> It is the woman, primal mother.
> Her gateway is the root of heaven and earth.
> It is like a well barely seen.
> Use it; it will never fail. (Feng and English, 1989)

The reference to the valley and its spirit, to root, as well as to the womb as the portal of the female, regarded as mysterious, profound, dark, or secret are analogies of Heaven and Earth as the source of *Wanwu*.

The Bronze Script for *dao* introduces a component right at the bottom of the word which is the word for "foot," 止 *zhi* shown under F in figure 4.9. This appears to justify also looking at *dao* in terms of the motion of walking along the road, and hence of following it. By version B (Lesser Seal Script),

this understanding had been transformed somewhat, as B combines the component on the right 首with its left component looking like this, *chuo* 辶 which means "walking, then halting." By version C (Clerical Script), the left hand component has evolved to look like this: 辶.These developments, too, would be in keeping with the *Laozi* and the general Chinese *philosophical* outlook which advocate that humankind must walk along the true path, although each school of *philosophy* advocates its own conception of what the correct"dao" is.

The above shows that *dao*, apart from straightforwardly being a road, path, or way, also signifies that humans in life must traverse such a road/roads, whether interpreted literally, figuratively, or *philosophically*. This very brief summary of the rather complicated philological understanding of *dao* would, as we shall see later, stand us in good stead in grasping the importance of two other terms related to *dao* in CCM, its *philosophy*, its *science* and its methodology—通/*tong*, meaning "to move through with no obstacle standing in the way" and 透/*tou*, meaning "clear and transparent." Note that these three words 道，通，透 share the same radical辶; this radical indicates movement/motion, implying a dynamic (not static) state—this shows that Chinese cosmology/*philosophy* is primarily interested in the dynamic, not so much the static mode of operation or existence, a fundamental theme which would be explored in great detail in the course of this book (chapters 5, 6, 7 in particular).

It may be appropriate at this point to distinguish between two uses of the word "dao," namely, a specific or particular *dao*, on the one hand, and the general/*philosophical dao* on the other. We propose to call the latter "the Dao" and the former "dao" preceded by the specific domain to which that use is applied. We can elicit such a distinction from the quotation cited at the beginning of this chapter which says that *Tian* and *Di* follow the Dao. This implies that the Dao in this context is the general/*philosophical* version whereas the *dao* of Heaven (天道 *tiandao*) and the *dao* of Earth (地道*didao*) are used more specifically and each respectively is restricted to that domain alone, whereas the Dao would include here both the *dao* of Heaven, the *dao* of Earth, the *dao* of Humankind (人道/*rendao*). All these specific *dao*s would entail following/complying with the Dao and would together form part of the Dao, though not the whole of it.

This reading would be compatible with the other important quotation from chapter 42 of the *Laozi*: The Dao engenders one, one engenders two, two engenders three, three engenders *Wanwu*. In chapter 3, we have shown that "one" could be said to refer to *Yuanqi*/元气 which in turn engendered *yin qi* and *yang qi* ("two"), whose co-operation, mutual response and interaction as *Yinyang* ("three") ultimately engendered *Wanwu*. There, we have also