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# **“SINCE HEAVEN HAS NOT YET DESTROYED THIS CULTURE, WHAT CAN THE MEN OF KUANG DO TO ME?”: COSMOLOGICAL CONFUCIANISM AND THE DE- VELOPMENT OF SCIENCE**

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## **ABSTRACT**

This article addresses the issue how, in traditional Chinese society in which Confucianism held a dominant position, philosophy was organized in ‘schools of thought,’ how these schools remained relatively stable ‘transmitters of wisdom,’ and how they dealt with ‘science’. More precisely, it is argued that the kind of ‘cosmological Confucianism’ that became the state orthodoxy of imperial China is a kind of correlative thinking that accepts a close relation between the natural and the political world. In a context in which ‘philosophers’ increasingly became advisors to the political elite in their performing of their duties of maintaining cosmic order, the ruling elite came to depend on the advice of these ‘philoso-

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phers,’ while ‘philosophers’ depended on the elite for their livelihood. When, analogous with the imperial administration, bureaucratization also came to characterize the philosophical ‘profession,’ philosophy became organized in ‘schools’ of thought whose aim it was to transmit knowledge based on books and accepted as truth by teacher and disciple. In this intellectual scene, it is no surprise that early scientific writings show government influence, especially in such fields of science as astronomy, as these are seen as essential for the operation of the state. This article thus claims that, in the same way as the Chinese political and social model is a model aimed at the *status quo*, also the traditional scientific model spirals around a *status quo*. In this claim may lie one element of a larger answer to Needham’s question why ‘modern sciences’ did not develop in China.

## 1 Introduction

Joseph Needham’s question why modern sciences did not develop in China and his answers to this question have been the subject of many scholarly articles and monographs. This article deliberately does not reiterate this “Needham question” as such. As the concept ‘science’ is very difficult to define, and as the Needham question as formulated above has to be fragmented into a number of sub-questions relating to the position of science in society, the impact of political philosophy on scientific institutions, etc., questions the solutions of which provide partial answers that have to be amalgamated before a conclusive answer to Needham’s question may be formulated,<sup>1</sup> this article contributes to a possible formulation of an answer to one such sub-question: Why have China’s intellectual practices remained relatively stable in the course of time? To formulate an answer to this question, this article contextualizes the formation of the ‘New Text School’ of Confucianism in the political and social environment of Han Dynasty China (206 B.C.E. - 220 C.E.) It was during the Han Dynasty that the ‘New Text School’ was elevated to orthodox status,

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<sup>1</sup> See De Saeger and Weber (forthcoming).

and that the philosophical ‘profession’ was organized – or was at least presented to be organized – in ‘schools of thought’. This article therefore addresses the question why, in the course of time, these ‘schools of thought’ remained relatively stable ‘transmitters of wisdom,’ and the question how these ‘schools’ dealt with ‘science’.

This article first describes the political and social environment in which Confucianism was formed, and became accepted as the state doctrine of imperial China. In this, the philosopher Dong Zhongshu is the main point of attention, as it is his interpretation of Confucianism that became the orthodox one. Hereafter, the attention is shifted towards a description of the position of the philosopher in China, and the organization of the philosophical profession. The final part of this article deals with the impact Confucianism and the organization of philosophy in Chinese society have had on the development of science.

## **2 The Political and Social Environment of Confucianism**

Rationality and argumentation, two elements that are of crucial importance for the development of any philosophical tradition, “arise when a thinker seriously contemplates the pervasiveness of the possibility that he may be wrong, that he needs reasons and arguments to support the validity of his views”. (Harbsmeier 1998, p. 261) The question on the rise of ‘philosophy’ thus is a contextual one: when were circumstances such that ‘philosophers’ were confronted with the possible fallibility of (their) traditional concepts, and / or with the need to convince others of the correctness of their views.<sup>2</sup>

Around the 6th. century B.C.E. – the famous ‘*Achsenzeit*’ as coined by Karl Jaspers – in the Western, Indian, and Chinese cultural contexts,

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<sup>2</sup> For a study of ‘context’: see Scharfstein 1989.

similar philosophical theories on the universe and mankind were proposed.<sup>3</sup> This period of Chinese history became known as the period of the ‘One Hundred Philosophical Schools’,<sup>4</sup> and is, on the political level, characterized by an increasing unrest, eventually leading to military conquest, at the end of which China was for the first time unified as an empire under the Qin Dynasty (221-206 B.C.E.).

It is this context of social and political unrest that provided the premises for the beginnings of ‘philosophy’ in China. No matter how different in their approach to the contemporary situation the different Chinese ‘philosophies’ that developed in the 6th and early 5th centuries B.C.E. were, they also share the characteristic that they are oriented towards the past, rather than towards the future (Bauer 2006, p. 37): Chinese ‘philosophers’ aimed at reconstructing some glorified historical period, predating the political and social turmoil of their time. This determination explains why, rather than the authority of demonstration, it was sagely origin that determined a statement’s authority.<sup>5</sup> It is this orientation towards the glorified past that is one of the major differences with the philosophical tradition of ancient Greece. As a result, the art of formal proof was little developed in China, and rigid rationalism demanding formal proof in formal contexts, remained a marginal phenomenon.<sup>6</sup>

The only Chinese philosophy that did not model itself on a historical example was the Legalist philosophy of Han Feizi (? - 233 B.C.E.). For Legalists, the actual state of society proved that man’s innate nature was bad, and that only laws could organize society. It is this Legalist philosophy that was promoted as state orthodoxy in the first empire, the Qin Dynasty.

<sup>3</sup> Jaspers 1949. See also Dessein 2001, pp. 98-103, Rošker 2008, pp. 2-3. On the notion ‘similarity’: see Scharfstein 1978, p. 28 ff.

<sup>4</sup> On the Chinese concept ‘school’: see further.

<sup>5</sup> See Lloyd and Sivin 2002, p. 193.

<sup>6</sup> Harbsmeier 1998, p. 265. See also Bauer 2006, p. 17.

For the Confucianists, the fall of the Qin Dynasty after having been in rule for only 15 years, was a proof that the Legalist philosophy that denied the authority of the words and the moral example of former wise kings, was unsuited to serve as political philosophy. Hence, Confucianism came to the forefront in the Han Dynasty (206 B.C.E. - 220 C.E.), and became the official orthodoxy in 136 B.C.E.<sup>7</sup> Many hypotheses have been formulated as to why Confucianism could establish itself as such. Apart from the proven failure of the Legalist philosophy in ruling a state, one other possible reason may be that its accentuation of a government through ‘humaneness’ (*ren*) was an excellent instrument to legitimate the dynasty, as its founders were of non-noble descent. On a pair with this, the new Han imperial court appointed functionaries in state organizations, selected on the basis of their degree of education and their moral behavior. From this habit developed the Confucian examination system (established in 124 B.C.E.), and was established the ‘National University’.<sup>8</sup>

The Confucian philosopher who has been most important for crafting Confucian state orthodoxy is Dong Zhongshu (ca. 179 - ca. 104 B.C.E.).<sup>9</sup> His philosophy has become known as the Confucianism of the ‘New Text School’.<sup>10</sup> His “*Chunqiu fanlu*” (“Luxuriant Gems of the Spring and Autumn Annals”), a work consisting of eighty-two short essays on philosophical and political subjects, is conceived as a commentary on the Confucian Classic “*Chunqiu*” (“Spring and Autumn Annals”), the history of the petty state of Lu, birthplace of Confucius (551-479 B.C.E.), from

<sup>7</sup> Schwartz 1985, p. 377, calls Emperor Han Wudi the “Constantine of Confucianism,” who followed the momentous advice of Dong Zhongshu and others to establish the “five classics” of Confucianism as the foundation of all official education and to proscribe all “unorthodox” doctrines.

<sup>8</sup> See Bauer 2006, p. 118, van Ess 2003, p. 42.

<sup>9</sup> On the importance of Dong Zhongshu: see Chan 1963, p. 271, Needham 1956, pp. 281-282.

<sup>10</sup> For philological details on the ‘New Text School’: see Wilkinson 2000, p. 477.

722-481 B.C.E.<sup>11</sup> For Dong Zhongshu, this Confucian historical classic is not a mere account of events in the human world, but also refers to the realm of nature.<sup>12</sup> In his “*Chunqiu fanlu*,” he therefore draws analogies between heaven – the collective of deceased ancestors, earth, and man.<sup>13</sup> In doing so, Confucian concepts are combined with ideas adopted from the Yin-yang School, from the School of the Five Phases (*wu xing*) – including their cyclical concept of history, and a variety of numerical theories were included. In this way, a holistic world view was moulded. In Dong Zhongshu’s philosophy, the universe is an organic whole, an ‘organism’ in which every part is interrelated with every other part. Social order has to ensure that the relations between all constituent parts are kept in harmony. In conformity with early Confucian concepts, the words of the early sages are seen as normative, and it are these words on which social order has to be modeled. To speak with Wing-tsit Chan 1963, p. 271:

The universe is treated as an organic whole. In his belief, not only are things related generally, but they are so in exact detail; and not only do things change, but they activate each other. The theory that things of the same kind energize one another presupposes an organic structure and a pre-established harmony. The correspondence of man and Nature is now reduced to numbers. Nature can always influence man through portents because the same material forces of yin and yang govern both of them.

Because heaven, earth, and man all form an organic whole, it is the task of the ruler, *wang*, to preserve the harmony in this organism. He does so by behaving benevolently, *i.e.* by ruling in a humane (*ren*) way. Therefore, Dong Zhongshu states (*Ershi'er zi* 1988, 794b):

<sup>11</sup> On the importance of commentaries in school formation: see further.

<sup>12</sup> On the Chinese concept of ‘nature’ (*ziran*): see later in this article.

<sup>13</sup> See Bauer 2006, p. 122.

When the ancients invented writing, they drew three [horizontal] lines which they connected through the center [by a vertical stroke], and then called this ‘*wang*’ (ruler / king). These three lines represent heaven, earth, and man, while the connecting of them through the center represents the way (*dao*) of [the ruler]. Who, if not a ‘*wang*,’ could take the central position between heaven, earth, and man, so as to connect and council them? Therefore, a ‘*wang*’ models himself on heaven. He takes its seasons as his model, and gives them completeness. He models himself on its commands and circulates them among all men. He models himself on its numerical [categories] and uses them when initiating affairs. He models himself on its *dao* and thereby brings his administration into operation. He models himself on its will and, with it, attaches himself to humaneness (*ren*).

As the ruler models himself on heaven to serve the people, this explains why (*Ershi'er zi* 1988, 794c):

The ruler’s likes and dislikes, joy and anger, are equivalent to heaven’s spring, summer, autumn, and winter. Heaven accomplishes its work through the changes of warmth, coolness, cold, and heat. When heaven brings forth these four [seasons] at the proper time, the year is fine; when untimely, it is bad. When the ruler of men brings forth his four [qualities] as to righteousness, the world is well ordered; when unrighteous, it falls into disorder. Therefore, a well-ordered world is the same as a good year, and a world in disorder is the same as a bad year. In this may be seen how the principle of man models itself on the *dao* of heaven.

These numerical categories are further developed in the following (*Ershi'er zi* 1988, 793c):

Heaven has ‘five phases’ (*wu xing*): the first is wood, the second is fire, the third is earth, the forth is metal, the fifth is water. Wood is the starting point of the cycle of the five phases, water the final point, and earth the center of the five phases. [...] Wood occupies the East, where it rules over the forces of spring; fire occupies the South, where it rules over the forces of summer; metal occupies the West, where it rules over the forces of au-

tumn; water occupies the North, where it rules over the forces of winter. Therefore, wood rules over the production of life and metal rules over its destruction; fire rules over heat and water over coolness. [...] Earth occupies the center and is called ‘heavenly fertilizer’.

and (*Ershi'er zi* 1988, 808b-c):

Heaven, earth, *yin* and *yang*, and wood, fire, earth, metal and water are nine; together with man, they are ten. [...] In the universe, there are the essences *yin* and *yang*. Human beings are constantly drowned in them.

Put differently, it is because the ruler knows heaven that he can act as representative of heaven on earth, thus maintaining good order in the cosmos. This includes the social structure of society, as is evident from the biography of Dong Zhongshu, included in the “*Qian Han shu*” (“History of the Former Han”) (1986, Vol.1, 600b):

The mandate of heaven (*tianming*) is a decree (*ming*). This decree cannot operate except through the sage (*shengren*). The ‘basic stuff’ in its raw state is ‘nature’ (*xing*). This nature will not attain accomplishment when not changed through instruction. Man’s desires are ‘feelings’ (*qing*). When feelings are not regulated by [human] institutions, they will not be appropriated. Therefore, a ruler (*wang*) is respectful in undertaking the mandate of heaven above, thus operating in conformity with the decree; and is busy with changing through clear instruction below, so that the people accomplish their nature. He adjusts his laws and rules according to what is appropriate, and he differentiates the hierarchy of upper and lower [social classes], so as to appropriate their desires. By practicing these three things, the great fundamental basis [of society] is initiated.

In Dong Zhongshu’s holistic worldview, political institutions have to correspond to the numerical categories of the universe (*Ershi'er zi* 1988, 784b-c):

When appointing his officials, the king (*wang*) nominates three higher ministers, nine lower ministers, twenty-seven great-officers, and eighty-one officials of first class: a total of one hundred and twenty persons with which the hierarchy of ministers is completed.<sup>14</sup> I have heard that the model that the wise kings hereby use, is the process of heaven. [...] That three men form the first selection [of officials], is based on the fact that three months form one season. That four such selections are made, is based on the fact that four seasons complete a year. The three highest ministers are the men by whom the king supports himself. Heaven completes itself by three (i.e. heaven, earth, and man), and the king supports himself by three. When this complete number is established and the process of selection is multiplied four times, there can be no error. The significance of arranging heaven's numerical categories for participation in [human] affairs, is that the government should be conducted with careful attention to the *dao*. [...] Does not the fact that there is one *yang* (for spring), but three spring [months covered by it], derive from the appropriateness of three? Heaven then multiplies this by four (the number of the seasons), the number [of months] being identical [for each season]. Heaven has its four seasons and the seasons have their three months. [...] In the fact that three ministers constitute one selected group, and that the process of selecting is limited to four, lies the complete expression of the characteristics of man.

Heavenly signs will announce disharmony in the cosmos (*Ershi'er zi* 1988, 788b):

Generally put, when things in heaven and on earth have abnormal changes, this is called ‘strange occurrences’ (*yi*); when changes are small, this is called ‘calamity’ (*zai*). ‘Calamity’ always comes first, and is followed by ‘strange occurrences’.

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<sup>14</sup> Notice that this system is mentioned as the system of the Zhou Dynasty (11th century - 256 B.C.E.) in the Han Dynasty work *Liji*, the “Book of Rites”. See Couvreur 1913, p. 271. The state organization of the early Zhou Dynasty was the model for the Confucianists.

Agreeing with Joseph Needham, Benjamin Schwartz has labelled this ‘cosmological Confucianism’ a kind of ‘phenomenalist philosophy,’ whereby ‘phenomenalism’ is understood as “essentially a belief that ‘governmental and social irregularites’ can lead to vast dislocations in nature”. (Schwartz 1985, p. 364) In the correlative thinking that characterizes Dong Zhongshu’s ‘cosmological Confucianism,’ the saying by Confucius that “Since heaven has not yet destroyed this culture, what can the men of Kuang do to me?” (*Analects IX*, 5) has to be understood as follows: As heaven is the ruler’s ultimate model and judge, it is heaven that bestows the ‘mandate of heaven’ (*tianming*) upon the ruler. When a ruler rules according to the *dao* of heaven, i.e. in a humane (*ren*) way, social disorder will be avoided. In the ideal Confucianist state, social hierarchy will be stable, to the extent that also the men of Kuang will act according to the proper rules of conduct. When the ruler does not rule in a humane way, this will, e.g., lead to it that the men of Kuang no longer act according to their proper lot. In such cases, it is heaven that will interfere and that has the ability to withdraw the ‘mandate of heaven’.

### **3 Philosophy as a ‘Study of the Way of the Cosmos’ – The Philosopher as a Microcosmic Advisor for Maintaining Macrocosmic Order**

In its attempt to understand where man fits in the universe, Chinese philosophy is not essentially different from early Greek philosophy. What is different, though, are the moral values with which this quest is laden.<sup>15</sup> In ancient China, a cyclical concept of history was combined with a consistent confidence in the eternal validity of the words of the wise men of antiquity. This resulted in it that Chinese philosophy was not oriented

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<sup>15</sup> See on this: Lloyd and Sivin 2002, p. 2.

towards the future. Rather, its main aim became explaining why the cosmos and man within this cosmos function as they do.<sup>16</sup> In this context, Chinese philosophy developed into a profession of advising the ruler how to act according to the *dao* of heaven so as to keep good order in the cosmos.

The social networks in which philosophers function within the Chinese Confucian society are the natural outcome of the Confucian cosmological model. Chad Hansen (1985) describes Chinese society as characterized by a part-whole structure, i.e., a structure in which each part is, by definition, part of something else. That ‘something else’ may, in its turn, be part of something still bigger. More concretely, the ‘parts’ are the individuals, and the ‘whole’ is a certain social relationship this particular individual has with a greater construct, be it the family in narrow sense, the family in larger sense, or society as a whole. From a philosophical point of view, we can extend this scheme to the cosmos at large, i.e., society as a whole is part of the Confucian cosmological construct. Moreover, in a part-whole structure, each primary part can simultaneously be part of different constructs. The relation of the part to the whole is therefore not a single line of relationship, but a whole bundle of lines, in which each line represents a specific social relationship. With each of these lines, a separate Confucian behavioral code is connected.<sup>17</sup> One of the outcomes of this process of living, as it were, in a web is that the web becomes part of the person. The self is embedded in relationships, inextricable from it, and is not thought of as independent of such attachments.

<sup>16</sup> Bauer 2006, p. 37, phrases this thus: “Die chinesische Philosophie gab sich, so möchte man sagen, von vornherein nicht nur als erwachsen, sondern gleich auch als alt zu erkennen”. Weber (1951, 152-4) labels Confucianist rationalism “Rationalismus der Weltanpassung”.

<sup>17</sup> Cheng 1997, p. 37: “Il en résulte une vision du monde, non pas comme un ensemble d’entités discrètes et indépendantes dont chacune constitue en elle-même une essence, mais comme un réseau continu de relations entre le tout et les parties, sans que l’un transcende les autres.”

(Redding 1993, p. 62) Put differently, a person's identity is nothing else than the combined result of his social relations.

Fei Xiaotong calls this type of social model a “differential mode of association” (*chaxugeju*). To illustrate this kind of relationship, he uses the metaphor of the concentric circles that appear when throwing a rock into the water. (Fei 1992, pp. 62-63) Each individual is at the center of the circles produced by his or her own social influence. Everyone's circles are interrelated, and one touches different circles at different times and places. In such a model, each interference of one's own circles with those of another individual represents a different kind of relationship. To each interference, a specific moral behavior is attached. This corresponds with Dong Zhongshu's concept of the universe as an organic whole in which every part is interrelated with every other part, and in which social order has to ensure that the relations between all constituent parts are kept in harmony.<sup>18</sup> Therefore, the Chinese pattern of social organization embraces no ethical concepts that transcend specific types of human relationships (*guanxi*).<sup>19</sup> Each relation of an individual with another individual or

<sup>18</sup> The Mohist view, centered on the concept of '*jian'ai*' (universal love) does not fundamentally differ from this view of an individual's position in society. Mohist philosophy has been defined as an a-moral Confucianism. Also Daoist philosophy shows to be indebted to this part-whole concept. The *Daodejing*, e.g., explains that '*dao*' gives rise to one, one to two, two to three, and three to the ten thousand things. In reverse order, this means that the ten thousand things, the parts, are part of the three, the two, the one, and, eventually, the ultimate whole that is '*dao*'. When the Daoist philosopher Zhuangzi urges us to return to the 'natural state,' he does not intend that we should focus on human individual subjectivity. Rather, the urge to return to the 'natural state' reflects the awareness that the individual is only part of the 'whole,' and is inspired by the fact that human beings, in their behavior, are shaped by the social environment in which they behave. See Hansen 1985, p. 52.

<sup>19</sup> See Fei 1992, p. 74.

group is determined by the rules of conduct that are proper to this specific ‘*guanxi*’.<sup>20</sup>

Kwong-loi Shun differentiates four layers for an individual’s relation with society: (1) he knows social distinction, (2) he has to observe traditional norms that govern people’s behavior by virtue of social position (it is through participating in this social order and letting oneself be shaped by it that one becomes fully human), (3) his human relations are directed toward other human beings who are equally formed by the same social order, and (4) his cultivated character will have a transformative effect on other human beings. One’s own self-cultivation thus will have a transformative effect on other things, and such effect is itself a measure of one’s progress in self-cultivation. Society thus both is the inspiration and the aim of an individual’s existence.<sup>21</sup> As a consequence, the value of an individual is measured by his value for society, and the way to go beyond oneself and reach out to the world is “to extend oneself circle by circle”. (Fei 1992, p. 67)

It is in this type of social context that we have to situate the rise of Chinese ‘schools’ of philosophy, with ‘philosophers’ increasingly becoming advisors to the political elite in their performing of their duties of maintaining cosmic order. Obviously, for the ruler and the ruling elite, this part-whole relationship is extended to its utmost as the ruler is the ultimate intermediary between heaven, earth, and man. Within a value pattern stressing harmony and consensus, the key words in Chinese philosophy being order, pattern, and organism,<sup>22</sup> it comes as no surprise that what the ruling elite wanted from their ‘philosophers’ was advise and guidance for order and control. They wanted rational solutions for prac-

<sup>20</sup> Bell 2006, p. 267: “An individual can belong to several affective networks simultaneously, and boundaries between groups are flexible and changing depending on circumstances.”

<sup>21</sup> Shun 2004, pp. 191-193. See also Schwartz 1985, p. 113.

<sup>22</sup> See Needham 1956, p. 281. See also Lloyd and Sivin 2002, p. 68.

tical problems, and a philosophical justification, found in the wise examples of antiquity, for their policies.<sup>23</sup> For the ‘philosopher,’ it is the degree of his moral self-education that allows him to function as such, a profession that allows him – through the ruler – to influence the lives of others. For the ruler himself, it is from the effective guidance of his philosopher-advisor that he gains prestige as ruler and legitimation for his rule, i.e., through the beneficial outcome of his rule, as advised upon by the philosopher-advisor. Apart from this philosophical-political relationship, in which the ruling elite depended on the advise of ‘philosophers’ for their political prestige and survival, the ‘philosophers’ depended on the continued support of the elite for their livelihood. Ruler and philosopher thus were mutually dependent in their profession of keeping society harmonious. The value of the social network of the philosopher thus became similar to the one of the ruler himself, and equally vulnerable. This fundamentally differs from the state of affairs in early Greece, where open debate was the norm.<sup>24</sup>

In fact, the Han Dynasty only institutionalized the system of ‘patronage’ as it had developed in the period leading to the first unification of the empire under the Qin Dynasty.<sup>25</sup> A major difference, though, is that in the unified Han empire only one political philosophy was raised to official status, while, in the preceding period, many rival ‘schools’ flourished. From this period dates the so-called Jixia (lit. near the Ji [Gate of the Capital of the Qi state]) Academy, founded by Duke Huan, ruler of the feudal state Qi, in about 360 B.C.E.<sup>26</sup> We should, however, not think of this Academy as a modern institute for learning.<sup>27</sup> Duke Huan invited a

<sup>23</sup> See Lloyd and Sivin 2002, p. 30.

<sup>24</sup> See Lloyd and Sivin 2002, p. 29, pp. 40-41, p. 190, p. 213.

<sup>25</sup> See Lloyd and Sivin 2002, p. 27.

<sup>26</sup> Lee 2000, pp. 44-46.

<sup>27</sup> Lloyd en Sivin 2002, pp. 30-35, remark that modern historians of philosophy have wishfully invented a Jixia Academy that would resemble a meeting place

variety of scholars – Confucian and Daoist alike – to his court to give advice on political matters. The Academy therefore must have adopted a syncretistic approach. This model was continued during the Han Dynasty in the sense that it became institutionalized and bureaucraticized. In this process, the development of philosophy in different directions that had existed thanks to the many feudal states, each with their own rulers and the need for individual advisors, stopped, as Confucianism was shaped into the only possible line of thought. The eclectic climate of the Jixia Academy is hereby not without importance, however, for the formation of the ‘New Text School’ of Confucianism, combining Confucian concepts with ideas of such other schools as the Five Phases, Yin-yang, and numerical categories.

The bureaucratization of scholarship in the Han Dynasty further shaped the organization of the philosophical profession in ‘schools’ (*jia*) of thought. What belongs to a peculiar ‘school of thought’ is essentially based on the method knowledge was transmitted. On this, the 3rd century B.C.E. “*Lüshi chunqiu*” (“Spring and Autumn of the Lü Clan”) informs us as follows (*Ershi'er zi* 1988, 640a):

In studying, one has to progress, so that there is no blindness in the mind.  
Recite [the texts] carefully. [...] Observe whether [the teacher] is happy,  
and [if so] ask him the meaning of the texts. Make your ears and eyes ob-  
edient, and do not contradict his intention. Retreat from him, and think  
about what he has said.

Two important elements can be seen in this passage: (1) transmitting knowledge was based on books, and (2) was aimed at accepting the

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for intellectuals, comparable to a contemporary research center. However, so they claim, the only evidence to perceive of the Jixia Academy as such a centre, is the title ‘Senior Grand Master,’ a honorary title with no institutional status attached to it. For the interpretation of the Jixia Academy as a centre of learning: see Makeham 1994. See also Sivin 1995, Chapter 4.

teacher's interpretation by the disciple. This is, of course, in line with the authority attributed to the words of the wise sages of antiquity.<sup>28</sup> This importance of memorization was further stressed after, in the Qin Dynasty, books had been burnt on demand of the emperor. Memorization was seen as the only way to preserve books. In this context, the concept of a book as a work written by one author is a late development. In China up to the first century C.E., books were texts that were accepted by and commented upon by a peculiar 'school' in accordance with their proper interpretations of the words of old sages.<sup>29</sup> Membership of a 'school' was the prerequisite to gain knowledge and understanding of this interpretation.

Chinese philosophy thus is not characterized as a "search for truth," (Bauer 2006, p. 17) as the truth of the words of antiquity stands beyond doubt. Rather, Chinese philosophy is aimed at dealing with the world, conceived as a holistic whole, by advising to bring a specific and transmitted interpretation of these words into practice.<sup>30</sup> This also explains why the Chinese traditionally did not have a word that corresponds to our

<sup>28</sup> See Lloyd and Sivin 2002, p. 46.

<sup>29</sup> See also Lloyd and Sivin 2002, p. 73. Cheng 1997, p. 318, note 4: Concernant la notion d'écoles dans la Chine ancienne, Nathan Sivin (cf. *Philosophy East and West*, 42, 1, 1992, 27) remarque que, contrairement à la conception grecque de l'école formée d'orateurs et de polémistes sur la place publique, elle correspond bien plus à des classifications bibliographiques qu'à des groupements de personnes. En Chine, les écoles se distinguaient entre elles en ce qu'elles préservavaient et transmettaient des corpus différents de textes écrits, dans une lignée de transmission qui ressemblait fort à une filiation (d'où le mot *jia* qui désigne le clan)".

<sup>30</sup> Cheng 1997, p. 34: "Plutôt qu'un "savoir quoi" (c'est-à-dire une connaissance propositionnelle qui aurait pour contenu idéal la vérité), la connaissance – conçue comme ce qui, sans en être encore, tend vers l'action – est avant tout un "savoir comment": comment faire des distinctions afin de diriger sa vie et aménager l'espace social et cosmique à bon escient. Il ne s'agit donc pas d'une connaissance qui appréhende intellectuellement le sens d'une proposition, mais qui intègre le donné d'une chose ou d'une situation".

word ‘philosophy’. ‘*Zhexue*,’ the contemporary Chinese word for ‘philosophy’ is a loan from the Japanese ‘*tetsugaku*,’ a translation of ‘*philosophia*’. It literally means: ‘the study (*xue*) of knowing intuitively (*zhe*)’.<sup>31</sup> This is reminiscent of the following passage of the eclectic *Huainanzi*, a work of the 2nd century B.C.E. (*Ershi'er zi* 1988, 1285a):

What the intellect knows is petty, but it is depending on what is not known that illumination is [achieved].<sup>32</sup>

The old Chinese word used to refer to the activity of explaining the order of the cosmos, i.e., of ‘philosophy’ in the sense described above, is simply ‘*xue*,’ commonly translated as ‘study’. For the Chinese philosopher, ‘study’ is as much a moral as an intellectual activity.<sup>33</sup> As the opening lines of the Confucian Analects, “*Lunyu*” read (Legge 1971, pp. 137):

The Master said, ‘Is it not pleasant to learn with a constant perseverance and application?’

Further in the Analects, we read (book 1, chapter 1, vii; Legge 1971, pp. 140-141):

Zixia said, “If a man withdraws his mind from the love of beauty, and applies it as sincerely to the love of the virtuous; if, in serving his parents, he can exert his utmost strength; if, in serving his prince, he can devote his life; if, in his intercourse with his friends, his words are sincere: – although men say that he has not learned, I will certainly say that he has”.

This ‘study’ is also explained in the chapter “*Daxue*” of the Han Dynasty work “*Liji*” (Legge 1971, pp. 356-359):

<sup>31</sup> See also Bauer 2006, p. 18. See also Lloyd and Sivin 2002, p. 5.

<sup>32</sup> See also Lloyd and Sivin 2002, p. 192 and Sivin 1995, Chapter 5.

<sup>33</sup> See on this Lloyd and Sivin 2002, p. 5.

The *dao* of the ‘great learning’ (*daxue*)<sup>34</sup> is making the light of virtue shine, is being as close to the people as one is to one’s own family, is only abiding in the highest good. When one knows where to abide, one can establish oneself; when one is established, one can be quiet. Quietude leads to peace; peace leads to deliberation; deliberation allows one to reach [the goal]. Every thing has its beginning and its end; every occasion has a beginning and an end. The one who knows what comes first and what comes last is close to ‘*dao*’. In antiquity it was so that to let the light of virtue shine throughout the whole cosmos, one started to order one’s own territory. In order to regulate one’s own territory, one started to regulate one’s own house. In order to regulate one’s own house, one started to perfect oneself. In order to perfection oneself, one started with making one’s heart upright. In order to make one’s heart upright, one started with making one’s intention authentic. In order to make one’s intention authentic, one started with developing one’s knowledge. Developing one’s knowledge was done by investigating things. It is through the investigation of things that knowledge reaches its greatest scope. Once knowledge is expanded, the heart becomes upright. It is through making one’s heart upright that one perfects oneself. It is through perfecting oneself that one regulates one’s house. It is through regulating one’s house that one rules one’s territory. When the territory is ruled, all under heaven is in peace. The essential for both the son of heaven and the ordinary man is therefore to perfection oneself. It is impossible that one neglects the essential and hopes to realize what is auxiliary.

It is also in this line of thinking that we should interpret the famous Confucian saying that, “With forty, I had no more doubt.” (Analects, II, 4). Doubt in the Confucian sense is not some methodological doubt, or doubt concerning a step in self-cultivation. Rather, doubt should be understood as emotional confusion, i.e., confusion regarding the ‘*dao*,’ i.e. confusion regarding the categorization of the world and one’s appropriate behavior

<sup>34</sup> Notice that ‘*daxue*’ is also the name for the Han Dynasty university as well as for the modern Chinese word for ‘university’.

in this world.<sup>35</sup> This type of confusion endangers the proper social behavior, and the order in the cosmos.<sup>36</sup> To go short, along with Dong Zhongshu's interpretation of man as a 'part' in a part-whole relationship,<sup>37</sup> the philosopher in China became the microcosmic advisor to the ruler for maintaining the macrocosmic order.

#### **4 The Consequences of Cosmological Confucianism for the Development of Science**

In Europe, a first fundamental step towards the development of science was brought about by Augustinus (354-430). Augustinus replaced the cyclical interpretation of time that characterized Greek antiquity with a linear time model. Taking the birth of Christ as focal point, time was presented as consisting of three periods: the period from Adam to Moses; the period from Moses to the birth of Christ; and the period from Christ to the end of the world. The resurrection of Christ symbolizes the untruthfulness of worldly life. Profane life is not meaningful *an sich*, but is only meaningful in its transcendental function.<sup>38</sup> It is in the transcendent empire of God that human beings will return to themselves.<sup>39</sup> Another important element of Augustinus's view of history, is its universalistic character: all human beings suffer the same lot. History is no longer a *historia gentium*, but a *totum genus humanum*.<sup>40</sup>

When, starting from the middle of the 15th century, the shift from scholastic thinking to Humanism and Renaissance set in, and the devel-

<sup>35</sup> See Möller 1998/99, pp. 38-40.

<sup>36</sup> See Möller 1998/99, pp. 42.

<sup>37</sup> See Chan 1963, p. 271.

<sup>38</sup> See Crombie 1975, p. 218. See also Göller and Mittag 2008, p. 31.

<sup>39</sup> See Göller and Mittag 2008, pp. 25-26.

<sup>40</sup> See Göller and Mittag 2008, p. 28.

opment of physical sciences revealed that both time and space are endless, the Augustinian view was challenged. This prepared the way for the thinking of the period of Enlightenment, with a renewed emphasis on the physical and sensual world.<sup>41</sup> One important consequence of this development was that man was seen as a creative actor in history. Personal freedom was understood to be a universal value, and the necessary requisite for man to act creatively.<sup>42</sup> Along with the combined transfigurations of the Renaissance and the scientific revolution, came the Reformation and the rise of capitalism. Max Weber argues that, whereas Confucianism, as we have demonstrated, wants to preserve the *status quo*, therefore concentrating the individual's attention to the family and regulating his social behavior by means of a moral code, Protestantism advocated that trust in men could endanger the soul.<sup>43</sup> Protestantism therefore provided the individual with a direct access to God: "A superior community of faith and a common ethical way of life were set against the community of blood relationships, and even against the family itself". (Redding 1993, p. 139) The restraint of the family bonds cast off, the individual could strive for personal wealth.

This reshaped the European social organization. Where the Chinese society remained characterized by a part-whole relationship, the European society developed into a 'one-many' format, whereby the 'many' are the separate individuals, and the 'one' is the society.<sup>44</sup> This format that is typical for capitalist societies, is called an "organizational mode of

<sup>41</sup> For reflections on the relation between the physical and the divine in this early period of 'scientific thinking,' see Göller and Mittag 2008, p. 38.

<sup>42</sup> See Casirer 1987, p. 46.

<sup>43</sup> Weber 1951, p. 241. Redding 1993, p. 62: "The lack of an ultimate authority, such as supra-mundane God, leaves the individual without grounds for supporting as a separate person a sacred "cause" or a universally applicable principle, such as Christian charity, and replaces them with piety towards specific people, especially those in close related proximity."

<sup>44</sup> See Hansen 1985.

association” (*tuantigeju*) by Fei Xiaotong. (Fei 1992, p. 62) In a many-one relationship, each individual has the same type of relation to the one. In this sense, the individuals are interchangeable. The social consequence of such a relationship for the individual is that, as it is not his relationship to the one that constitutes his uniqueness, his uniqueness lies in his individualistic self. In other words, a many-one relationship is characteristic of an individualistic society. As is obvious from the above, this accentuation of the individual is a rather recent development.<sup>45</sup>

In modern Western societies, people attach themselves to preexisting organizations, and then, using that organizational structure, establish personal relationships with other individuals who are equally member of that same structure, or with individuals who are no member of that specific organization. All personal relations are determined by who is in and who is not in a certain organizational structure. That is to say, the fundamental concept of morality is, in the West, built on the relationship between the organization and the individual. An individual who joins an organization always keeps his individual rights. Therefore, whereas in traditional China, the boundary between private and public has never been clear, the European state is an organization that creates distinct boundaries between the public and the private.<sup>46</sup>

Such a development toward the rise of capitalism and individualism did not happen in Confucianist China.<sup>47</sup> Even when prospects of a civil career diminished in the Later Han, thus opening up the possibilities for philosophical rivalry, the philosophical activity of the different teachers and their pupils lost itself in discussion on which interpretation was or-

<sup>45</sup> See also Lukes 1973, p. 1.

<sup>46</sup> See Tu 1984, p. 5.

<sup>47</sup> Needham 1969, p. 117; Needham 1974, pp. 280-281.

thodox, and ended in different lineages asserting their own positions, countering those of rivals without acknowledging them.<sup>48</sup>

It is hardly imaginable that the cyclical thinking that characterizes Chinese philosophy did not have an effect on the development of a scientific language and science. Within the early Chinese philosophical tradition, a few trends can be discerned in this respect.<sup>49</sup> For Confucianists, language is normative and the reality is subject to language. Given the Confucianists' bias towards the glorified past, this means that the words of the early sages are normative, and that reality has to be modeled on these words. Although the Confucian disciple Mencius "argued that language did not represent an innate system which contained the essence of proper social norms that enabled people to live in a harmonic society,"<sup>50</sup> his moral epistemology was based on introspection. With this, he conforms to a second epistemological trend that is represented by the Daoist Laozi (ca. 300 B.C.E.) and the Confucianist Xunzi (298-238 B.C.E.). Also for them, language cannot express reality, and, hence, cannot be used as a conveyor of knowledge.<sup>51</sup> This attitude re-iterates the quotation from the *Lüshi chunqiu* given above.

Also the peculiar way the philosophical profession was organized in, influenced the development of science. It has been shown that the early scientific writings show government influence. This influence appears to have been the strongest in astronomy, which was essential to the operations of the state, and weakest in alchemy, which could count on no cen-

<sup>48</sup> Lloyd and Sivin 2002, p. 52. See also Hu 1967, p. 129, who situates the rise of 'modern sciences' in China in the field of philosophy.

<sup>49</sup> See Rošker 2008, pp. 1-37.

<sup>50</sup> Rošker 2008, p. 15.

<sup>51</sup> Rošker 2008, pp. 18-28, claims that the Nomenalists (*xingming jia*) and Neo-Mohists based their theories on isomorphic assumptions, resp. linguistic relativism. They constitute a third trends. Zhuangzi's philosophy, finally, can be named 'radical relativism'.

tral support except when a practitioner convinced an emperor that he could make him immortal.<sup>52</sup> For the latter though, as the ancient classics, including medical classics, were thought to contain the wise words of old sages, also scientific knowledge in this field was aimed at transmission of this ancient knowledge along lineage ('school') lines.<sup>53</sup> In traditional Chinese medicine, the human body was seen as a cosmos, and medical sciences served to maintain or restore good order in this cosmos. Medical sciences thus resemble philosophy and politics in the sense that also these serve to maintain or restore order in the cosmos. This concept of the human body explains why anatomic features were described as 'offices' in the central bureaucracy of the body, and somatic 'posts' (*guan*) were described in function of what they were in charge of (*zhu*).<sup>54</sup>

Before the modern times, the Chinese not only had no word for 'science,' but they had no word for 'nature' in the sense of the physical or material universe neither. The classical word '*ziran*', denoting 'nature' means as much as 'what exists as such (*ran*) without external cause (*zi*)' and was only used in the sense of 'nature' starting from 1881, when it was borrowed from the Japanese who, in their turn, used the word to translate Western textbooks.<sup>55</sup> The earliest Chinese word for 'science' was the transliteration '*sai'ensi*', that was replaced by the term '*kexue*' in the early 20th century. (Wilkinson 2000, p. 38) All this notwithstanding, the Chinese concern for the practical useful stimulated the advance of technology as much as it did in the West. This kind of development, however, has nothing to do with the unique development of rational scientific method in Europe starting with the scientific revolution referred

<sup>52</sup> Berger and Luckmann 1966, pp. 94-96.

<sup>53</sup> Lloyd and Sivin 2002, p. 193.

<sup>54</sup> See on this Lloyd and Sivin 2002, p. 219.

<sup>55</sup> See Lloyd and Sivin 2002, pp. 199-200.

to above. Also in the West, this development is as complex as it is unique.<sup>56</sup>

## 5 Conclusion

The way things were traditionally “understood” in China began with the idea of a permanent cosmic order. “Understanding” meant understanding where in a scheme something fits. This scheme was founded on the concept that things belong to groups of relations. Knowledge in the Chinese tradition therefore was essentially conceived to be skill-knowledge: “knowing (how) to.” The organization of philosophy and science followed the same structures as did the political and economical organization of the state, a structure that is characterized by a part-whole relationship. In the same way as the Chinese economical and social model is a model aimed at the status quo, also the traditional scientific model therefore spirals around a status quo.

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<sup>56</sup> See on this Graham 1989, p. 317.

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