

Religion and Science in a Non-Western Setting: The Chinese Experience

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I. Introduction

For most of the last twenty years, I have been teaching chemistry at Fu Jen Catholic University (Furen Daxue)¹ located in a suburb of Taipei. As a Catholic university, Fu Jen is committed to the religious freedom of its staff and students, and it also encourages all students to better understand their own religious tradition as well as Christianity.



The current religious breakdown of Fu Jen's students is essentially the same as that in any other public or private university in Taiwan: about 3 % are Christian (about 1% Catholic and 2% Protestant, primarily Presbyterian), about 35% identify themselves as either Buddhist or adherents of traditional popular religion. The remaining, well over half, say they have no religious faith (*meiyou zongjiao xinyang*).²

I have put Buddhism and popular religion (*minjian zongjiao*), which includes Taoism, the traditional Chinese religion, under the heading of *popular religion* (Ross 1981; Budenholzer and Chou 1989). The sum of the two remains quite constant at about 35%, but the figure for Buddhism can range anywhere between just over 2% to 20%, depending on how the respondent understands the question. This is indicative of the syncretism that is part of the religious life of Taiwan.

Three observations have led me to ask about the relationship of religion and science in Taiwan and China. The first is that over

50% of our students say they have no religious faith. Why is that? Is it related to a perception that science has made religion obsolete? Secondly, the general perception of science and technology in Taiwan is very positive. Finally, there is the impression that the intelligentsia of Taiwan, and its educational policies seem, if not hostile, at least suspicious of religion.

The categories *religion* and *science* are problematic in a study of European or American religiosity, and they are even more so in Taiwan. The word *religion* in Chinese (*zongjiao*) is relatively recent and includes both theistic and non-theistic religions, as well as a whole range of traditional cultural activities. The word for *science* (*kexue*) is also of relatively recent origin and understood primarily as the physical and biological sciences. The understanding of the terms *religion* and *science* in Taiwan are reasonably close to what it is in contemporary Europe and North America.

There are, however, problems of language, and of conceptual differences. The cross-disciplinary nature of this kind of study also poses a problem.³ The cross-disciplinary study of theology and science is usually done in the context of Europe and the Americas. Now it is mapped onto a very different cultural reality—that of modern China and Taiwan.

Finally, one last point. Taiwan is culturally Chinese and there is no doubt that the events which I will discuss that occurred primarily in mainland China in the last 150 years have laid the ground work for present cultural understandings.

II. Background

During its long history, China made and recorded meticulous observations of astronomical, biological and medical phenomena. China also developed a multifaceted technology that was on a par with those of other ancient civilizations (Needham 1975). Yet the development of an empirical, methodologically unified science such as that developed in Europe in the 17th and 18th centuries did not appear in China until after large scale contact with the European, American as well as Japanese scientists and technologists.

The coming of the Jesuit missionaries at the end of the Ming dynasty (1368-1644), initiated the first relatively direct contacts with European science. Matteo Ricci and those that followed him introduced Western mathematics and other elements of Western science to the Beijing court. Despite differences of methodology and

even larger differences on the very nature of knowledge and of the universe, they agreed on the value of precise calculations (Gemet 1993: 93). Thus Chinese mathematicians, especially those involved in the reform of the calendar, were ready to make use of the new techniques coming from Europe. This work, together with the translation of works like Euclid's *Elements of Geometry* into Chinese, laid the foundation for the later developments of science and technology in China.

During the Ming dynasty, and until the last years of the Ching dynasty (Qing, 1644-1911) the overriding orthodoxy of China was Confucianism, particularly neo-Confucianism usually identified with Chu Hsi (Zhu Xi, 1130-1200). The four books of the Confucian canon—the Analects of Confucius, Mencius, the Great Learning, and the Doctrine of the Mean—were the basis of the educational system and of the civil examination system which was, in turn, the basis of governance from the local to the highest levels of the empire.

I think it would be fair to say that Confucian thought is primarily concerned with the right ordering of human relationships, and what we would normally label as moral and ethical questions. In the introduction, I did not mention Confucianism. In contemporary Taiwan, it would not ordinarily be considered as a religious faith, and would not normally be included in a sociological questionnaire on religious belief. Yet in many ways, even today, and even more so in the past, Confucianism does function as a religion. In fact, at the beginning of the Republican era, from 1914 to 1916, it was suggested that Confucianism become the state religion of the new Chinese nation state.

Buddhism was introduced into China from India probably before the first century of the Common Era, and gradually became indigenized in Chinese culture. A large number of Buddhist writings were translated into Chinese and supplemented by the work of Chinese authors. Buddhism has had a tremendous impact on Chinese intellectual history and, of course, offered solace and meaning to millions of Chinese facing the hardships of ordinary life. Yet, except for relatively short periods, it never became a national religion or philosophy in the way that Confucianism did.

Many rituals and beliefs usually labeled as popular religion or folk religion characterize the religious lives of most people of China. These include everything from family rituals at the Lunar

New Year to the Taoist funeral rituals, the veneration of ancestors, the appeasement and supplication of land gods and of other auspicious deities, rites of divination and healing. Religious Taoism has had the clearest influence on these traditions, but Buddhism, Confucianism and various animistic beliefs all have had their impact. Most of the scholar officials of late imperial China, while publicly professing the refined tradition of Confucius, still joined in the various rites of popular religion (Watson 1985).

III. The Large-scale Introduction of Western Science into China and Its Intellectual Consequences⁴

Towards the end of the Ching dynasty and the first years of the Republican era (beginning 1911), Western science found its way through much of China.

The 19th century was a time of decline for the Manchu rulers. Trade with Europe, especially Britain, had been gradually increasing, however, with the increased trade there were also increased tensions and hostilities. There were the two Opium Wars, the Anglo-French occupation of Beijing in 1860, the loss of Vietnam to the French in 1885 and the Japanese victory that led to China's ceding Taiwan and the outlying islands to Japan.

These military reversals brought increasing calls for modernization of China's military. Chinese leaders were aware of the technical superiority of the European military and argued that only by bringing in Western technology was there hope for revitalizing China. One of the most important activities of the time was the translation of foreign works on science and technology into Chinese. The difficulties entailed in this translation can be appreciated when we realize that a whole new vocabulary had to be developed to express many of the ideas of Western science in Chinese. A number of lay missionaries were instrumental in this work.

Among many of the intellectuals, the famous phrase of Chang Chih-tung (Zhang Zhidong, 1837-1909) "Chinese learning as the substance, Western learning for application" (*zhongxue wei ti, xixue wei yong*) epitomized their attitude toward Western learning. Confucian thought would provide the moral basis for society; Western studies of technology would provide the tools for China's modernization and defense.

The last decades of the 19th century witnessed a huge influx of missionaries, about two-thirds Protestant and about one-third Catholic. Many of the missionaries, though not professional scientists, were well versed in the science of their day and freely used it in their evangelical mission. Schools, founded especially by the Protestant missionaries, often stressed scientific and technical subjects. Many traditional scholars were severely critical of the new educational institutions, but these provided an alternative to the traditional Chinese centers of learning, especially for the children of the rising merchant class. Several of these schools gradually developed into the Christian universities of China. In later years when the students of the prestigious state universities took to the streets to demand better scientific training, the best scientific training was in fact in the Christian universities.

At this time, large numbers of students went overseas for higher education, first to Japan, then to Europe and to the United States for higher education (Buck 1980). It was these students who would become the nucleus for developments both in technical fields as well as the leaders of the movement to radically revamp the intellectual landscape of China.

In 1903 there was an imperial decree requiring Western scientific studies throughout the educational curriculum (Zen 1931: 171). In 1905 the imperial examination system was abolished. These two actions were symbolic of the massive changes that were occurring in Chinese society.

It is hard for us to imagine the tremendous break with tradition involved in the abolition of the traditional examination system. In principle it meant the end of the system of rule by the class of the scholar-gentry. Presumably there now would be increased reliance on technical know-how rather than the traditional presumption that the country would be best served by administrators who had sought the self cultivation of the Confucian tradition.

In this context, many persons developed what might be called a common sense eclecticism—recognizing the value of science, including its presuppositions, but also choosing not to abandon many of their traditional Chinese beliefs. Sun Yet-sen (1867-1925), considered the founding father of the Republic and himself trained in Western medicine, and Chiang Kai-shek (1887-1975), both esteemed science very highly, yet did not feel called upon to reject traditional Confucian values.

One avenue of reconciliation was the suggestion that modern empirical science, or at least its methodology, was somehow already, at least implicitly, present in the Confucian tradition. In 1935 Chiang Kai-shek declared in a lecture *Scientific Spirit and Scientific Method*:

Actually what we nowadays call science is none other than what we Chinese have in the past called *ke-chih*. (As this approach is found in the *Great Learning [Daxue]* we can see that China had science two thousand years ago. Since there was science, there must have been the scientific method. Thus the scientific method was not discovered in modern times, much less is it a sole possession of foreign countries. During the age of Confucius, this fact was already clear. What Confucius meant by "everything has its source, and everything has its beginning and end; when one knows the order of things, he is indeed close to the Tao" is the best scientific method for any scholarship and everyday handling of affairs. (Chiang Kai-shek, Lecture of January 28, 1935, quoted in Kwok 1971: 186).

Two points should be noted. First, the suggestion that science and the scientific method somehow go back to Ancient China had surfaced in one form or another since the time of the Jesuit missionaries at the end of the Ming dynasty. Secondly, the very fact that many Chinese leaders who wished to preserve the ancient heritage felt compelled to argue that science in the modern sense was also part of China's heritage, indicates the popularity and felt importance of modern empirical science in China.

Many intellectuals felt that the efforts to reconcile traditional Chinese thought and modern science along with its accompanying philosophy were doomed to failure. The only hope for China was to jettison its past and restructure society along the lines indicated by modern science. In this paper I will refer to two thinkers: Chen Tu-hsiu (Chen Duxu, 1879-1942), and Hu Shih (Hu Shi, 1891-1962).

Chen Tu-hsiu was a founding member of the Communist Party in Beijing and remained loyal to the Communist government. Hu Shih followed the Nationalists to Taiwan, and became the director of Taiwan's *Academia Sinica*, a combination of a National Academy of Science and a government research institute in both the humanities and the natural sciences. Despite basic political dif-

ferences, both argued strongly that science and a "scientific philosophy" were the only hope for a renewed China.

Chen Tu-hsiu had received a classical education and was successful in the district examinations. In 1900 he left to study in Japan where he came to know many of the other young revolutionaries. From 1907 until 1910 he studied in France. Upon returning from Europe, Chen argued that traditional Chinese culture had to be left behind. Science was to be the vanguard of the new era.

Chen Tu-hsiu was not a scientist and his understanding of science was rudimentary at best. He was not even a particularly systematic or original thinker. Yet his writings were very influential and his thought symbolized the feelings of many people of his time.

Hu Shih was much more of an academic than Chen Tu-hsiu. As a young student, Hu Shih was very much influenced by evolutionary thought, particularly the translations of Yen Fu. In 1910, Hu went to the United States to study agriculture at Cornell, but his literary and philosophical bent soon brought him to Columbia University in New York where he came under the influence of the pragmatist thinker John Dewey. In 1917, Hu returned to China and took a position at the National University of Peking. Hu felt that pragmatic philosophy offered an alternative to dialectical materialism.

Hu Shih⁵ did have an appreciation of Chinese tradition; but his calls for reform in the name of science were as strong as that of the other intellectuals of his day.

We hope that they (the youth) come to an early realization and concentrate on the knowledge and methods of the sciences. This is the road of hope, whereas the other road, that among old books and papers, leads nowhere. Even the best talents and intelligence of the last three hundred years, spent wasted among books, did not produce any good results; we must therefore adopt another approach. Only after you (the youth) have achieved good results in the laboratory can you speak of and use your energies to tidy up our national heritage (Collected Essays of Hu Shih [*Hu Shi Wen-cuni*], quoted in Kwok 1971: 95).

Like Chen Tu-hsiu, Hu Shih was not himself a scientist. There were, however, increasing numbers of scientists trained in either Japan or the West who were returning to China. Chinese scientific institutions gradually developed, mostly along the lines of Western institutions.

Amidst the calls for an intellectual revolution, there were also strong voices warning of the dangers of the new stress on science as a way of life and suggesting a return to traditional Chinese values. These contrasting voices erupted in the so-called *metaphysical debates* in 1923 (Zhang 1997 [1925]).

The debate raged in the popular press, and engaged most of the intellectuals of Beijing, including Chen Tu-hsiu and Hu Shih. There was, of course, no winner, but there was now agreement by both sides that science was the modern, empirical science that had been transplanted from Europe and America. The question was to what extent this science could in itself provide a way of life.

The war with Japan began on a large scale in 1937. The civil war between the Communist and Nationalist forces broke out in 1946 and ended with the Nationalist retreat to Taiwan in 1949. Dialectical materialism, considered by some as the ultimate scientific philosophy, became the state philosophy of China. In Taiwan, intellectuals were allowed much more freedom to study both traditional and Western thought, with the presumption that topics sensitive to the Nationalist government were to be avoided. Religions, both indigenous and foreign, were allowed to develop.

IV. The Critique of Religion

For Chen Tu-hsiu, Hu Shih and the other leaders of the pro-science faction, the traditional religions of China represented what was worst in the Chinese tradition. As usual Chen Tu-hsiu stated it most forcefully.

All useless things, worshiped by the people, are rubbish and idols and should be destroyed ...

If such idols are not destroyed, humanity will never be freed from self-deceiving superstitions and irrational beliefs.

If the existence of the gods and spirits of heaven and earth cannot be proved accurately, all forms of religion are nothing but

deceitful idols: the god Amida is false; Jehovah is false; the Supreme Lord of Heaven is false. All kinds of Gods, Buddhas, Immortals, Spirits revered by various religions are useless, cheating idols and must be destroyed ("On the Destruction of Idols," *The New Youth [Xin Qingnian]*, 1918, 5:2, quoted in Kwok 1971: 71).

In his 1933 lecture, *The Chinese Renaissance*, delivered at the University of Chicago, Hu Shih noted approvingly the lack of religious sentiment in China.

It is true that the Chinese are not so religious as the Hindus, or even as the Japanese; and they are certainly not so religious as the Christian missionaries desire them to be. Practically all prominent leaders of thought in China today are openly agnostics and even atheists. And the young men are even openly anti-religious. Although the fierce anti-religious movements of only a few years ago have now subsided, it cannot be denied that the educated people in China are indifferent to religion, and the whole intellectual tendency there is not favorable to any religious movement or revival (Hu 1934: 78).

He argues that Laotze (Laozi) was a naturalistic philosopher and that Confucius was a humanist and an agnostic. While Buddhism and Taoism had their moments of success, ultimately they succumbed to the "native rationalistic mentality" (Hu 1934: 85) of the Chinese. Hu, while sympathetic to Confucianism, notes that it had been used to rationalize the policies of the previous imperial governments. Thus, to avoid any misunderstanding, he then quotes Chen Tu-hsiu's opposition to making Confucianism into something like a state religion.

Hu closes his consideration of religion in China by quoting approvingly the article of Wu Chih-hui (Wu Zhihui, 1864-1953), in the collection of papers from the "Metaphysical Debate."

In this essay the old scholar unreservedly accepted the mechanistic conception of the universe, and built up a philosophy of life which, in his own words, "rule out the term God and banished the soul or spirit"...

He maintains that no religion, but science alone, will be needed to make mankind even better and more moral. It is science alone which has given man not only the new sympathy, but the new capability to do good which the mendicant saints of medieval

times could never possess. Man must therefore rely upon himself and himself alone in his ceaseless endeavor to increase his tools, to extend his knowledge and power to the utmost, and thereby to make himself more and more moral by being in possession of greater power to solve the difficulties of life ...(Hu 1934: 91-93).

Hu Shih was surely correct that the strong critique of religion, especially among intellectuals, was a product of both foreign and indigenous forces. By the time Hu Shih gave his lectures at the University of Chicago, in 1933, there was no question of whether or not Western science would be accepted in China. It was already part of the fabric of the culture and had already passed from being "Western science" to being the modern international phenomena of "empirical science."

The great majority of Chinese, even today, express their religious life through popular or folk religion. While having its roots in traditional Chinese Confucianism and Taoism, as well as Buddhism, popular religion encompasses a large range of rituals, practices, beliefs and values, differing considerably among China's various ethnic and language groupings. Much of popular religion is concerned with the search for a better life, family harmony, good health, long life and prosperity. At the time every person in China participated in one way or another in the folk traditions. At the same time the intelligentsia and government officials on various levels were always concerned that developments of local sects would not disturb public tranquillity or deviate too far from accepted norms (Watson 1985). With the growing acceptance of science, popular religiosity while tolerated among the uneducated was seen by many as a vestige of superstition (*mixin*) that should be gradually eliminated.

In light of the above, the critique of Christianity is instructive. It was generally acknowledged that science had been imported from the West and that science had been developed in Christian Europe. Since the time of the Jesuit missionaries in the 16th century, there had often been criticisms of Christianity as a foreign religion, but the role of the missionaries in bringing science to China was often spoken of appreciatively. Furthermore, Christianity was a religion of active and loving service. The good works of the Christian missionaries—hospitals, schools, orphanages—were appreciated and seen as exemplifying what was best in Western culture. Yet ultimately people like Chen Tu-hsiu and Hu Shih argued that Christi-

anity, with its rituals, scriptures and dogmas, was ultimately as unacceptable as the traditional and popular religions of China.

V. Some Comments on the Current Situation

At the beginning of this essay, I noted that over half of the students in a typical Taiwan university said that they had no religious faith. According to the students, the reason is not a conflict between religion and science.⁶ When asked about the "influence of science and technology," 39.4% said that it promoted religious faith while 45.7% said that it had no influence. Only 13.7% thought that science and technology lead to the decline of religion or proved religion to be superstition. In a related question, 11.2% of the respondents thought that "in the search for truth, science is the only method." 6.2% thought religion was the only way to truth, while 92.4% thought that "only when science and religion are equally emphasized can we come to truth." In another question on their opinion of the faith stance of the majority of scientists, 46.1% answered that they had no basis for judgment, 40.7% felt that the majority of scientists are religious believers and 13.2% thought that the majority of scientists were atheists or not concerned with religious questions.

When asked to give reasons for the impression that science and religion are opposed, the largest group responded that "religion generates superstition (*mixin*)."

In the final question the students were asked whether "goals and procedures of science and technology are harmful to human dignity and the sanctity of life." While 27.9% answered that they had no basis for judgment, 55.5% replied that science was "extremely or moderately" harmful citing that while Taiwan's economy has improved tremendously, the environmental price has been heavy. Science and technology have their limits.⁷

Taiwan's major organized religions have not, in general, responded directly to the challenge posed by science and technology.

Buddhist students in our surveys had a slightly lower sense of any conflict between religion and science. Many question whether popular Buddhism with its central doctrines on the transitoriness of the material, and folk traditions are ultimately compatible with modern science. Buddhism has also been viewed as relatively disengaged from the process of modernization and economic development. At least in Taiwan, this perception is changing with Buddhist initiatives in social welfare, medicine and education.

Christianity, especially Protestant Christianity, is probably the religion most identified with modern science. The missionary contributions to science education and medicine, both on the mainland and in Taiwan, are well known.

The situation on Mainland China is very complex and one on which I hesitate to comment, but both Taiwan and the Mainland have a strong popular appreciation of the value of modern empirical science, and also a recognition of its limits. While there seems to be no formal sociological study, all evidence indicates that dialectical materialism has lost the allegiance of the vast majority of China's intellectuals and common people. This has created a vacuum with a corresponding interest in both traditional Chinese religions and Christianity. Though exact numbers are hard to come by, both Catholic and Protestant sources have indicated large increases in recent years, both in government sanctioned churches and in the so-called underground churches.⁸ Among some academics, there is an increased interest in Christianity and especially its relationship to a developing scientific and technological civilization.⁹

I would like to close with a few comments on the mission of the various religious traditions as they face a rapidly changing scientific and technological society. All are going to have to come to terms with contemporary science and technology. Christianity, which historically has the closest relationship with the development of science, has a special contribution to make to the dialogue. The various Chinese traditions, though in many ways radically different from each other, have a common perception of the universe as somehow value laden—what Tu Wei-Ming from the Confucian tradition calls a "moral metaphysics" (Tu 1989). While seemingly at odds with the traditional Western scientific perception of an essentially valueless, material world of particles in motion, in which human persons, and possibly God, work out their moral futures, this understanding of the moral universe will be a key ingredient in the dialogue.

The religions of China will also continue to spread their message, to carry out their evangelical mission (to use a word originally confined to Christianity). The success of that mission will in many ways depend on how they are able to relate to a modern society. It is a society shaped by ancient traditions, and also one taking its place within a global culture in large part defined by empirical science and technology.

Notes

¹ In the original text of this paper, Chinese characters were given in parentheses. However, for editorial reasons the characters have been replaced with the standard Romanization. Those readers who would want a copy of the paper with Chinese characters should contact the author.

² The figures given represent two different times, and therefore are not completely consistent. In Fr. Ross's 1988 survey 9.8% of the respondents answered they were Protestant and 3.8% said they were Catholic. This percentage has dropped precipitously in the last ten years. The total number of Catholics and Protestants now make up only about 3% of the student population as indicated in the text. The percentages for the number of students professing no religious belief in Buddhism and popular religion and the percentage of students professing no religious belief are taken from the original 1988 surveys of Ross and of Budenholzer and Chou. All indications are that the qualitative picture represented by these numbers is still correct. The reason for the large drop in the number of Christian students would be the subject of another paper.

³ For a general treatment of religion and science questions, see Barbour 1997.

⁴ In the thematization of the introduction of Western science into China. I primarily follow the categories of Chin Yao-Chi 1978.

⁵ Hu is perhaps best remembered in his advocacy of vernacular Chinese (*baihua*) in writing and publishing. Traditionally, Chinese was to be written in a classical style, a very compressed and terse style that effectively kept the written word as the province of a relatively small elite. Already as a student at Cornell, Hu had written suggesting reforms in Chinese language and the use of literature. These suggestions were reinforced by others including Chen Tu-shiu.

On May 4, 1919, there were large scale student demonstrations in Beijing. The immediate cause of the demonstrations was the decision of the Versailles Peace Conference at the end of World War I to give in to many of Japan's demands at the expense of China. The demonstrations soon spread to many other cities. Soon the *May 4th Movement* came to embody the vast changes in Chinese society, not only political but also literary and philosophical.

⁶ The survey is discussed in more detail in Budenholzer and Chou 1989. Copies of the results are available from the author. Note the caveat in note 2 above.

⁷ Just at the time of the writing of this paper, the Bayer Chemical Company of Germany announced that it is abandoning plans to build a toluene diisocyanate (TDI) plant in Taichung, Taiwan. The reasons were opposition from local environmental groups and the opposition Democratic Progressive Party.

⁸ *The Guide to the Catholic Church in China* estimates the number of Catholics in China at ten million and the number of Protestants at fourteen million. This is out of a total Chinese population of some 1.2 billion (Charbonnier 1997: 18-19).

⁹ In my limited discussions with intellectuals from Mainland China, both in the United States and in Beijing, I have found them to be fascinated by the topic of religion and science. Perhaps having been educated in a traditional Marxist fashion, the very possibility of a rapprochement between science and religion is something new and exciting.

References Cited

(The citations below are those contained in the abridged edition above and does not include all those of the longer article.)

1. In English

Barbour, Ian G.

1997 *Religion and Science: Historical and Contemporary Issues*. San Francisco: Harper.

Buck, Peter

1980 *American Science in Modern China: 1876-1936*. London: Cambridge University Press.

1981 Budenhöler, Frank and Chou, Schang-Shing Peter

1989 "Science, Technology and Religion in Taiwan, China." *ITEST Bulletin*, 20. 4: 9-17.

Gemet, Jacques

1985 *China and the Christian Impact: A Conflict of Cultures*. Janet Lloyd, trans. Cambridge: Cambridge University Press.

1993 "Space and Time: Science and Religion in the Encounter Between China and Europe," *Chinese Science, II*: 93-102.

Hu, Shih

1934 *The Chinese Renaissance: The Haskell Lectures, 1933*. Chicago: University of Chicago Press.

Kwok, D. W. Y.

1971 *Scientism in Chinese Thought: 1900-1950*. New York: Biblo and Tannen.

Needham, Joseph

1975 *The Shorter Science and Civilization in China*. Two vols. Cambridge: Cambridge University Press.

Ross, Daniel

1981 *The Religious Life of the Students of Fu Jen University*. Taipei: Fu Jen University College of Law.

Tu, Wei-Ming

1989 *Centrality and Commonality: An Essay on Confucian Religiousness*. Albany, NY: State University of New York Press.

United Board for Higher Education

c. 1940 *An Impressive Service: The Story of the Christian Colleges in Asia*. New York.

Watson, James L.

1985 "Standardizing the Gods: The Promotion of T'ien Hou (Empress of Heaven) Along the South China Coast, 960-1960." In Johnson Nathan and Rawski, eds. 1985. Pp. 292-324.

Zen, H. C

1931 "Science: Its Introduction and Development in China." In *Symposium on Chinese Culture*. Shanghai: China Institute for Pacific Relations.

2. In Chinese:

Zhang, Junmai, Ding Wenjiang

1997 (1925) *Kexue yu Renshengguan*. Shandong: Renmin Chuban She.

