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Morality Versus Science: The Two Cultures Discourse in 1950s Taiwan

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Abstract This article discusses the conflict that broke out between the Taiwanese Positivists and New Confucians in 1950s Taiwan. Opposing views on science, tradition, Chinese culture, and Western culture led to a series of debates, which yielded significant impacts on Taiwanese society. After several previous studies, I re-examine the conflict and how it played out, concluding that its historical significance is twofold. First, both Positivists and New Confucians had no effect on the scientific industrialization of Taiwan but had political, cultural, and social effects. Second, the debates constructed a Taiwanese version of C.P. Snow's "two cultures"—a morally humanistic Chinese culture contrasting with a positivistic scientific Western culture. These served as the historical prototype for later formulations of the two cultures.

Abstract 本文將從「科技與社會」的觀點, 考察發生在1950 年代台灣的兩個思想學派──二十世紀新儒家與 台灣實證論──之間的衝突。發生在他們對於科學、文化、中國與西方的不同觀點之間的衝突, 導致 一系列的辯論, 同時對台灣社會產生重大的衝擊。我使用「科學觀」這個概念把這個衝突刻畫成兩 個科學觀之間的爭議。本文的目的即是在描述和說明這個爭議的歷史背景、過程、內容和影響。我 企圖揭示這個大爭議的兩個歷史意義 : 其一是兩者的科學觀在台灣社會轉型過程中, 並未促進或阻 礙台灣的科學化或工業化, 但是對於政治秩序、文化論述和人文社會科學有深遠的影響。其二在這 衝突中, 一個台灣版的兩種文化──道德人文的中國文化和實證科學的西方文化──被建構出來。這個 獨特的兩種文化大論述, 乃是台灣後來兩種文化論述的一個「歷史原型」。

Keywords Taiwan · Intellectual history · Positivism · New confucians · The two cultures · 台灣思想史 · 實證論 · 新儒家 · 兩種文化

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1 Introduction

In the 1950s and 1960s, Taiwan's intellectuals seriously and passionately contended with one another over Chinese and Western cultures. In those disputations, the distinction between "Chinese" and "Western" were based not only on geographical and civilized boundary but also on a particular meaning. While Western culture was interpreted as scientific and positivistic, Chinese culture was humanistic and essentially ethical. Thus, the juxtaposition of Chinese and Western cultures was virtually redefined as an opposition between morally humanistic and positivistic scientific cultures. The discourse soon looked like a Taiwanese version of C.P. Snow's "two cultures" (Snow 1993). It was really *constructed* or *even created* in the 1950s by the two opposite groups: the New Confucians[1] and the Taiwanese Positivists, usually called the Taiwanese Liberals. Identifying the Positivists as Liberals is more popular in Taiwan. By using the term "positivist," however, I highlight the scientific aspect of the group's thought.

In fact, an old discourse about the confrontation of Chinese and Western cultures, served as a skeleton, had been outlined in China as early as 1919, but the new discourse created in Taiwan added a new body—the moral humanity versus the positivistic science—to the old skeleton. The old discourse thus found its new life in Taiwan. The resistance and/or communication of humanistic Chinese culture against and/or with scientific Western culture also constituted a *grand discourse*, which had ever dominated the public talks in Taiwan over 40 years. The fact that the new discourse emerged from the opposition also created an ambiguous relationship between the two groups and brought a deep impact on the social, political, and cultural development of Taiwanese society.

Many scholars had analyzed the two groups' political and liberalistic ideas; few have considered their views on science. Most authors focused on the Liberals' struggle against the authority for democracy (Chien 1988; Chang 1990; Wei et al. 1990). The political conflicts between the New Confucians and the Taiwanese Liberals, such as the debate between Yin Haiguang and Xu Fuguan on freedom and democracy, had been analyzed well in detail (Li 1994a, b). In addition, many humanistic scholars have elucidated the relation between New Confucians' conception of science and Confucianism (Li 1991b, 1997; Chiang 1997). Fu (1988) and Lin (1990) are the relatively few studies of the Positivists' conception of science. To my knowledge, no scholar has focused on the conflict between the New Confucians and the Taiwanese Positivists over the science and culture. Therefore, the significance that the grand discourse was *created* by the two groups' views on science has not been revealed yet. In the paper that follows, I shall trace the discourse about the confrontation between Chinese and Western cultures. I shall also deal with the following questions: How did Western culture come to be viewed as positivistic and scientific while Chinese culture was made out to be humanistic and ethical? What was the so-called ambiguous relationship between the two camps?

[1] In Taiwanese philosophical community, the New Confucians is usually called as *Dandai xinrujia* 當代新儒家—a Chinese term is literally to be translated into Contemporary New Confucians. In fact, they may be called the Neo-Confucians in the twentieth century.

While the debate encompassed political, religious, artistic, and literary matters, by focusing on the disagreements about Western science and Chinese culture, we shall get right to the heart of the matter. After a discussion of the controversy and an analytical account of its historical significance, I shall reassess the ambiguous conflict between the new Confucians and Taiwanese Positivists, which was antagonistic in its discrete events but overall cooperative in constructing a single discourse. Furthermore, the two camps' discourse became a historical prototype for the later "discourse of the two cultures."

2 Science Views in 1950s Taiwan

Science view is a concept akin to *worldview*. This is an individual's or a community's conception of science, responses to such questions as: What is science? How does science operate? What is modern (Western) science, and how does it differ from traditional Chinese techniques? How does science connect to morality, culture, and religion? In addressing the first three questions, Taiwan's New Confucians and Positivists had virtually the same answers. Only when they addressed the last question—and many others that followed—did they part company. No matter how conflicting the answers, they are consistent with the two cultures discourse. Why? To begin to summarize this long and tortuous story, I shall begin by providing an overview of the two camp's common problems and concerns.

The Chinese Nationalist Party (usually called Kuo-Min-Tang, KMT in brief) lost its dominion over mainland China in 1949 when its troops were defeated by those of the Chinese Communist Party. The leader of the KMT government, Jiang Jiehshi—often written as "Chiang Kai-Shek"—commanded a general evacuation to the island of Taiwan. Troops, government officials, and large population of intellectuals fled the mainland. Many of the intellectuals feared Communist policies, hated its ideology, and were devastated by the regime change. They hoped that the Nationalist government would retrench and soon recover all of China.

Reflecting on the fate of modern China, some writers and scholars concluded that the KMT's failure was a symptomatic of a nation long in decline. "Why," they asked, "had China been so weak for such a long time?" The answer: "China had never grasped democracy and science." They believed that in order to strengthen what they called Free China (namely, Taiwan), democracy and science had to be imported, become parts of Chinese culture. But discussions of just how to do this provoked questions: Are Western democracy and science compatible with the spirit of Chinese culture? How could Chinese culture accommodate Western democracy and science? Some cultural conservatives, who often called as the "traditionalistic groups," insisted that Chinese tradition should not be abandoned or changed, while other progressives, who were the "westernization groups," believed that a westernized China was the necessary way to the future and that Chinese tradition could be sacrificed to innovation if the two conflicted. Neo-Confucians in the twentieth century (New Confucians) was one among many groups that identified as traditionalistic, and Taiwanese Positivism belonged among the westernization groups.

Despite their opposite positions, both groups shared the view that to speak of "science" was to speak of modern Western science and that the essential feature of

science was its positivistic spirit, namely, the scientific method under the positivistic view. They agreed that there had never been a scientific method in China, whose central preoccupation was the pursuit of morality. Indeed, both traditionalists and Westernizers believed that incorporated the methods of Western science into Chinese culture would strengthen Free China. Where they parted company was the question of reconciling the spirit of Chinese culture and the spirit of Western science. The Positivists claimed that since traditional culture had hindered and would continue to hinder the process of absorbing the scientific method, that culture should be abandoned. The New Confucians insisted that Chinese culture could not be surpassed, and all scientific activities had to be constrained by the universally moral conscience of Confucian thought.

Before advancing to a detailed examination of the controversy, readers may want to know more about the historical background.

3 The Historical Background[2]

Modern science was introduced into Taiwan during the period of Japanese rule, which lasted from 1895 to 1945. Long before the arrival of the Nationalist evacuees, Taiwanese intellectuals had their own views on science. But since there was little discussion about Chinese versus Western culture, I will not discuss that period. Instead, I will consider the subsequent era because the events of 1949 constituted a remarkable break in the intellectual history of Taiwan.

From 1949 on, Taiwan was treated as the base for counterattacking the China's Communist regime and rehabilitating the nation. Obliged to dwell in Taiwan, the displaced intellectuals continued to focus their attention on the fate of mainland China. They inherited the concern and spirit of the May-Fourth Movement (*Wu si yundong* 五四運動) and perpetuated the dispute between those who spoke for "Mr. De," who represented democracy, "Mr. Sai," the stand-in for science, and those who spoke of Chinese culture.[3]

The May Fourth Movement takes its name from the events of May 4, 1919. On that day, college students and teachers paraded in the streets of the Chinese capital, then called Beiping and spelled Peking, to protest the repressive rule of the Beiyang militant government. That demonstration inspired countless reflections on Chinese culture and had a very deep impact on the fate of contemporary China. Historians called the event and its effects together the May Fourth Movement. In other words, May Fourth was a complicated movement whose causes included "saving China" politically and "reforming Chinese culture." The two were closely linked. One radical proposal, called for *fully westernizing* China, and a variety of programs were designed. Adopting Anglo-American liberalism, continental European socialism, and Soviet communism were all seriously considered. In fact, the forces unleashed during the May Forth Movement gave birth to the Chinese Communist Party.

[2] This is a very brief introduction to a very complex history. For more details, Chinese readers can refer to Zhang (1996, esp., ch.2) and English readers to Christiansen and Rai (1996, esp., section 4 in ch.2).

[3] Yin Haiguang, who had won fame in the mainland before 1949 and later became a representative figure of Taiwanese Positivists and Liberals, called himself "a son of May Fourth."

Those radical proposals stimulated cultural conservationists' sensitive minds. In mounting a resistance to the anti-traditional and crazy ideas of the radicals in their eyes, conservatives suggested that Chinese culture might be revitalized by making a new commitment to tradition. A philosophical branch of cultural conservatism, New Confucianism in mainland China arose from these unsettled conditions. Adherents proposed saving Chinese tradition by integrating the ideas of western philosophers such as Immanuel Kant, Georg Wilhelm Friedrich Hegel, and others into Confucianism. Chinese intellectuals in the 1920s thus split into *the westernization groups* 西化派 and *the traditionalistic groups* 傳統派. Such a situation of polar opposition ignited a large-scale debate about *science versus metaphysics* in 1921; later, historians called it *ke xuan lun zhan* 科玄論戰. The debate originated in a lecture entitled *renshenguan* 人生觀 ("Philosophy of Personal Life") that was given at Beijing's Tsing-Hua University by Zhang Junmai 張君勱, a contemporary New Confucian. He claimed that problems in one's personal life could not be solved by science. Ding Wenjiang, a geologist, wrote an article entitled *xuanxue yu kexue* 玄學與科學 ("Metaphysics and Science"), in which he severely criticized Zhang's view. A much broader debate soon erupted. Related articles were collected in two volumes entitled *Kexue yu renshengguan* 科學與人生觀 (*Science and Philosophy of Personal Life*) (Zhang et al. 1977). The westernization groups insisted that only science could nurse the country's future prosperity; they accused the traditionalists of being *xuan xue gui* 玄學鬼 ("metaphysical ghosts").

Dr. Hu Shih (胡適) was a leader in the cultural aspect of the May Fourth Movement. As a follower of the American philosopher John Dewey, he advocated the science in the pragmatic and experimentalist attitude, and his view was adopted by several of the westernization groups (Lin 1996). An adage of his was ceaselessly repeated: "You should make a bold hypothesis, and then test it carefully" (*dadan jia she, xiao xin qiu zheng* 大膽假設, 小心求證). Later in Taiwan, this adage had been regarded as a maxim of the scientific method for decades. But thinkers who turned to communism rejected the ideas of liberalism and pragmatism; on the contrary, the liberalistic westernization group much feared the Communist ideology. Most members, despite their dislike of the Jiang's authoritarianism, had no alternative but to follow the KMT's government to Taiwan, where they absorbed Western positivism and became the Taiwanese Positivists. Yin Haiguang 殷海光 (1919–1969), who was a distinguished member and became a philosophy professor in National Taiwan University, introduced logical positivism and positivistic methods to Taiwan. He had Hu Shih's mantle in young people's minds after 1950.

Although the Chinese Nationalists, under Jiang's leadership, claimed that Sun Zhongsan's 孫中山 *The Three Principles of the People* as its political creed, in practice, they preferred authoritarianism and conservatism to democracy and livelihood. Jiang Jieshi explicitly identified himself as a follower of Wang Yangming 王陽明, a distinguished Neo-Confucian thinker who lived during the Ming dynasty 明朝. As determined cultural conservative, Jiang insisted that the main causes of defeat at the hands of the Communists were Western values and ideas such as freedom, liberty, and democracy—the seeds of Chinese Communist ideology. Therefore, he rejected and suppressed the voices of liberalistic democracy while he ruled Taiwan. Jiang's thought virtually constitutes the subject of the KMT ideology—it is a mixture of political authoritarianism and cultural conservatism.

The New Confucians also hated the Communist ideology. Some younger members had taken up residence in Taiwan after 1949, while others moved to Hong Kong: the most distinguished of them were Tang Junyi 唐君毅 (1909–1978), Mou Zhongsan 牟宗三 (1909–1995), and Xu Fuguan 徐復觀 (1903–1982). Because they produced their major works while they lived in Hong Kong or Taiwan, scholars in mainland call them "New Confucians in Hong Kong and Taiwan". Although they were no less conservatives than the Nationalists on cultural questions, they favored a far more liberal democracy. But in areas relevant to science and democracy, the New Confucians were faithful to tradition, rejected positivism, and advocated a sort of moral metaphysics, science, moral freedom, and Confucian democracy based on Confucian philosophy.

Did cultural conservatism and rejection of positivism support KMT's authoritarian rule? Such was the view of the Taiwanese Positivists, who found that all talk of "moral freedom" and "Confucian democracy" was misleading at best and wrong at worst. They even accused of that New Confucians stood on the side of the Nationalists. An article by Mou Zhongsan, "An Authentically Free Person" ignited a lively debate when it appeared in 1952. Yin Haiguang responded rapidly with a rebuttal entitled "My Understanding of an Authentically Free Person." Some details about the two articles will be discussed in the next section. I want to emphasize here the basic difference in their views on scientific method, namely the logico-analytical technique.

In the first half of the twentieth century, the images of the West and the China were vague and messy. Power, Christianity, demon, materialism, magic tools, science, progress, democracy, and so on, that were attributed to the West, were jigsaw puzzle pieces scattered on the floor, and no one seemed to have a clear idea about how to assemble them. China was presented as weak, sick, obscure, close, regress, prone to ancestral worship, authoritarianism, and many other unfortunate vices. The pessimistic picture stimulated the traditionalistic groups to offer a positive image in its stead. In other words, the meanings of "Chinese" and "Western" were not fixed to Snow's two cultures. Therefore, I want to note again that the distinction between morally humanistic Chinese culture and positivistic scientific Western culture was not built until the 1950s Taiwan.

4 The Debate over Logic and Chinese Culture

After the Communists took control of Mainland China, they forced intellectuals to accept the official ideology and publicly confess any precious deviations from the Communist line. For the new government, the only true science was Marxist materialism; other schools, including positivism, German idealism, Confucianism, Taoism, and Buddhism were considered to be mentalist (or idealist) ideologies (*weixinlun* 唯心論) and, therefore, unacceptable. Jin Yuelin 金岳霖 (1895–1984), a distinguished philosopher of the early twentieth century, was a pioneer who introduced logic and analytical philosophy to China. After the Communist Revolution, he was forced to write a confessional article in which he drew up a long list of intellectual misstep.

Mou Zongsan had studied with Jin but later turned to German idealism and returned to Chinese philosophy. The political climate and the regime change

stimulate him to integrate Confucian ideas and Kantian philosophy, proceeding along a line of thought quite different from Jin's. In Mou's view, Jin's philosophy let him down when he needed to resist the pressure from the Communist government, while his logical analysis did nothing to prevent from the Communist ideology's expansion and preserve Chinese culture. His teacher's confessional article "revealed that any system of thought that is formulated and built by mere individual and technological interests must be flawed. Based on my acquaintance with Mr. Jin, the content of his confessional article does not appear to be entirely false. We cannot suppose that all the statements in Jin's article were made against his will, that he was forced to write them by the Chinese Communist Party" (Yin 1952: 55, my translation). He continued, "a philosophy that relies on logico-analytical technique cannot preserve ethical rules defining the proper relations between fathers and sons, brothers and sisters, husbands and wives. It failed to save noble humanity, humanitarianism, Confucian values, the Chinese nation and traditional culture from the threat of the Chinese Communist Party's vicious ideology" (Yin 1952: 55, my translation).

Mou's comments about Jin infuriated Yin, who was also a former student. He strongly objected the use of a confessional article—which Jin had been forced to write—to attack a scholar's philosophy. This lack of sympathy for the intellectuals who remained behind was unforgivable. What is more important is that Yin thought that the logico-analytical approach, which he considered *the core of the scientific method*, was the most powerful weapon that could be used to resist the Communists' ideology. He said: "I believe that technological thinking and logical analysis are powerful instruments that can be applied to resist the vicious doctrine of the 'Red Demon' (i.e., the Chinese Communist Party)….Given the strong desire of the 'Red Demon' to exterminate the logico-analytical technique, I am confident that this approach to philosophical thinking can generate a very effective resistance to the expansion of 'red thought' (i.e., the Communist ideology)" (Yin 1952: 56–57).

Mou never replied to Yin openly. Yet, in his private letters to Tang Junyi, he complained that Yin's criticism arose out of his ignorance of those relevant philosophies. Mou said, "I have not yet read Yin Haiguang's article. His words are supposed to be platitude. We need not put them in our minds. He is a useless man without politeness.…What he can say is only bad curses, as he neither tried to understand others nor reasonably discussed with others" (See Li 2000: 63[fn. 119], 163[fn. 96]).

Yin's and Mou's articles sparked the debate between Zhang Foquan and Xu Fuguan over the meanings of "freedom," "liberty," and "democracy" in 1953–1954 (Zhang 1953; Xu 1954). *Ziyou Zhongguo* (*Free China*), a political and cultural journal published in Taipei, became the platform for the Taiwanese positivists. The New Confucians often presented their quite different opinions in *Minzhu Pinglun* (*Democracy Review*), a journal founded by Xu and published in Hong Kong. During the 1950s, the dispute played out in those publications went from hot to hotter and reached a climax in 1957. That was the year Yin published an essay entitled "Chon zheng wu si jinshen" ("Rehabilitate the Spirit of May Fourth") (Yin 1957), in which he charged the cultural conservatives with acting as the accomplices of the authoritarian KMT government. Xu's reply appeared 10 days later: "Lishi wenhua yu ziyou minzhu: dui ruma women zhe de dafu" ("History, Culture, Democracy, and

Freedom: A Reply to Those Who Are Insulting Us") (Xu 1957). One year later, Yin replied to Xu with a firm and harsh essay titled "Genzhe wu si de jiaobu qian jin" ("Go ahead by Following in the Steps of May Fourth") (Yin 1958).

The great debate revealed that the central theses and basic positions of the two sides were incompatible. I will show this in some detail in the following section by analyzing Yin Haiguang's thought, as a representative of Taiwanese Positivists, and Mou Zhongsan's thought, as a symbol of the New Confucians.

5 Lining Up Over Science

As conservatives of traditional culture, the New Confucians defend classical Confucianism, in particular, Confucius' and Mencius' teachings. The central thesis of Confucianism is nicely summarized in the words of Li Minghui, a specialist on Kant and Chinese philosophy: "Unlike other traditions, Confucianism interprets all cultural activities as expressions of the spiritual life and regards moral values as the common foundation or origin of all other values. To use the traditional words, it is a matter of *nei sheng wai wang* 內聖外王 ('being a moral saint on the personal level and an ideal ruler in the public level')" (Li 1991a: 3–4, my translation).

As they faced the impact of Western culture on Chinese society, the New Confucians expressed admiration for science and democracy, but they insisted that science and democracy had to be developed from or based on Confucian tradition. Their ideas appeared in a famous pamphlet, "Zhongguo wenhua yu shijie: wei zhongguo wenhua jinggao shijie renshi xuanyan" ("Chinese Culture and the World: A Declaration of Chinese Culture to the people of the World"), which was jointly published and signed by four distinguished New Confucians, Zhang Junmai, Xu Fuguan, Tang Junyi, and Mou Zhongsan. The declaration states: "We think that all Chinese can and should be aware not only of being morally practical subjects according to the traditional notion of *xin-xing* [*xin xing zhi xue* 心性之學, namely, Song-Ming Confucian doctrine of mind and humanity], but also of being political subjects in the area of public affairs, as epistemic subjects and pragmatically technological subjects in the area of nature and knowledge. Every Chinese person's being in the waking state is an ideal of Chinese culture and is required by Chinese culture itself" (Zhang et.al. 1958: 158, my translation).

Thus, building a democracy and a modern science is in accordance with the spirit of Chinese (Confucian) culture and the realization of the idea depends on every Chinese man and woman acting as a political and an epistemic subject. But how could such an idea be realized in a place with no tradition of democracy and science? The "Declaration" continues: "The moral subject has to negate or suspend its own existence as a moral subject whenever it requires itself to be an epistemic subject; that is, the moral subject has to stand behind the epistemic subject and commit himself to being a metaphysical supporter of the epistemic subject. The moral subject should not make any value judgment until the epistemic subject in the foreground achieves its aim; and then the moral subject can engage in moral practice and produce useful results" (Zhang et al. 1958: 161; my translation).

This well-known thesis, known as the doctrine of *liangzhi di zhiwo kanxian* (self-suspending or self-negation of conscience), was originally proposed by Mou

Zhongsan. He recognizes, in keeping with the Confucian view, that the human subject is in essence a moral subject. Confucius, Mencius, and other Neo-Confucians in Song and Ming dynasties claimed that every human has the ability to make correct judgments about moral matters because all innately possessed moral intuition (namely, conscience). Everyone would become a moral saint if he rediscovered and revived his basic moral nature, all too often obscured by desires. This reawakening would extinguish one's interest in worldly matters because of lacking mundane desires in the *jingjie* 境界 (level) of moral saint. So as to be an ideal ruler over state and nature, he would have to suspend his existence as a moral subject, step down from the level of the moral saint, and require himself to be an epistemic and political subject. Evidently, this is not only a fundamentalism of Confucian tradition and Chinese culture but also a metaphysical doctrine that implies the moral subject is *a priori,* independent of the empirically epistemic and political subject in the level of existence.

From the positivistic point of view, scientific knowledge is empirical, objective, and value-neutral; it can be produced only by a specific method. It is, therefore, inconceivable that science could be developed from Confucian tradition. Were it so, China would have had empirical science! Tradition, Chinese or Western, should not be regarded as a transcendent standard for scientific thinking and action. Moreover, the reasoning continued, the New Confucians' statements about the relation between Confucian thought and science were nothing but meaningless metaphysics!

As a representative figure of Taiwanese positivists, Yin Haiguang adopted most theses of logical positivism.[4] The following theses stand out as the most significant: (Y1) *The verifiability principle of meaningfulness*: a meaningful statement that is either verifiable in principle, or can be reduced to (or based on) other empirically verifiable statements; (Y2) *The anti-metaphysical position*: metaphysical statements are cognitively meaningless because they cannot be verified by sensory experiences; (Y3) *Emotivism about morality and value*: all statements of moral and value judgments are also cognitively meaningless because they cannot be verified by experience (but moral and value statements are emotionally meaningful; their function is to express subjective emotions); (Y4) *The scientific method*: science should be defined by the scientific method, which consists of a series of methodological rules including the hypothetical deduction of explanations and tests, the inductive confirmation of theoretical hypotheses, and the logical reconstruction of scientific theories as axiomatic systems (see Yin 1990a,b,c,d,e).

Furthermore, Yin insisted that all thinking and communication ought to be scientifically. For him, science is value-free and value judgment is nothing but a matter of feeling. He wrote, "First, there is too much discourse concerning those problems of culture; and extremely few people have accomplished serious and objective studies. Second, most people have strong feelings about those problems. They make their value judgments according to their respective feelings. Thus different feelings produce different value judgments" (Yin 1990f: 20, my translation). He criticized Confucian classification of personal types, *junzi* 君子 (virtuous persons) and *xiaoren* 小人 (ordinary people): "*Junzi* and *xiaoren* are used descriptively to mean an objective distinction of social classes on one hand, and as value terms to mean different personal

[4] About a detailed analysis of Yin's philosophy of science, see Chen 2003a. About the relationship between logical positivism and Yin, see Chen (2010).

types on the other hand. *Junzi* is thus portrayed as a paradigmatic person in an upper class, and *xiaoren* as a despicable person in a lower class" (Yin 1990f: 672; my translation). Four methodological norms of thinking and expression can be elaborated from his writings on thought, logic, and science. They are: (N1) One should know that cognitive meaning is distinct from emotional meaning; one should judge whether a statement is cognitively justified or not by empirical tests. (N2) In stating a fact, one should not mix "the descriptive and inferential expressions" with "the normative (emotional) expressions." (N3) One should build an objective standard for criticizing; otherwise, one is merely giving vent to one's emotions. (N4) One should pursue a scientific, cognitive explanation of cultural phenomena before making any value judgment on them.

In 1966, Yin published his last and greatest work, *Zhongguo wenhua de zhanwang* (*Prospects of Chinese Culture*; Fig. 1), in which he attempted to construct a cultural science that would guide the progress of contemporary Chinese culture. The book combines a general theory of cultures, a cultural history of modern China, and critical reflections on the traditional Chinese culture. Of course, Yin insisted on the need of grafting democracy and science onto Chinese culture. In the 11th chapter, "problems of modernization," he recognizes that the ancient China's technology was advanced but insisted that the traditional culture blocked the emergence of modern science. He wrote, "Why is [traditional] Chinese culture so detrimental to the development of science? The first postulation [or principle] of science is '*shi shemo jo shou shemo*' ('state things as what they are'). The postulation stipulates one, as a thinking person, to state his experience as what he is experiencing. Without this postulation, no empirical sciences can be built" (Yin 1990f: 538). He continues, "If a culture were to establish the postulation of 'state things as what they are,' as the cardinal value, science would appear. Such was the case with secular modern Western culture.… Chinese culture, on the contrary, did not treat the postulation as the cardinal value. The principle was routinely sacrificed to morality, emotions, and interests" (Yin 1990f: 539). For Yin, this made Chinese culture panmoralistic: "Panmoralism inspects and evaluates all human affairs from a moral perspective. All are subordinated to the censor of morality" (Yin 1990f: 539).

Instead of Yin's positivism, Mou proposed integrating Chinese philosophy (including Confucianism, Buddhism, and Daoism) and Kant's philosophy.[5] In his great synthetic system, Kant's philosophy provides a basic dichotomy of the two separate worlds: the kingdom of phenomena and the kingdom of things-in-themselves. Chinese philosophy offered substantive contents and a united way to the two separate worlds (Mou 1971, 2000). The dichotomy constituted a basic framework which is repeatedly expressed on Mou's many works, from things-in-themselves and phenomena to the principle of subjectivity and objectivity (Mou 1963, ch.7), the functional and constructive presentation of reason (Mou 1987, ch.3), and the intensional and the extensional truth (Mou 1983, ch.2), and so on. Mou argued that all Confucian, Buddhist, and Daoist traditions affirmed that there was a united way to the two separate fields—it is the concept of the "transcendent mind." The transcendent mind had access to the kingdom of things-in-themselves and had the ability to grasp them

[5] My outline of Mou's thought most refers to Mou 1983, Mou 1987, and Mou 2000. In addition to Mou's books, I also refer to Li Minghui's interpretation of Mou's thought (Li 1994b).

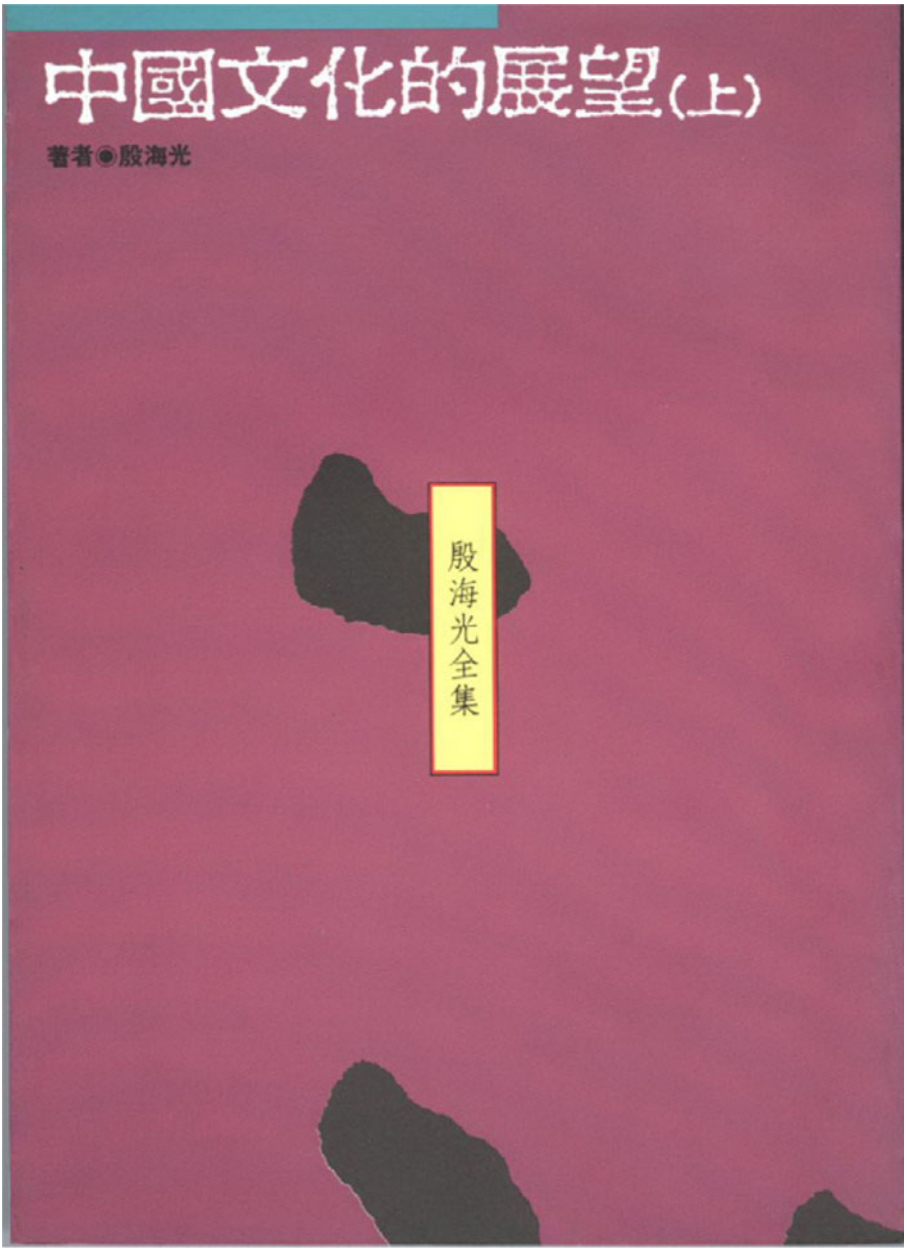

Fig. 1 The cover of *Zhongguo wenhua de zhanwang*

immediately. Confucians recognized it as *xin xing* 心性 (the moral mind), Buddhists as *zhin chang xin* 真常心 (the truly constant mind) (Mou 1983, ch. 13 and 14).

Mou's system may be encapsulated by the following four doctrines. (M1) *The metaphysics of moral idealism*: The only ultimate reality is the moral mind, equipped with practical reason. This doctrine is a radical metaphysics of "moral idealism." It

claims that the moral mind disclosed itself in two fields, the moral world and the natural world, which are parallel to Kant's distinction between "thing-in-themselves" and "phenomena." Science is nothing but the empirical knowledge of phenomena; it cannot provide accesses to the ultimate reality or things-in-themselves. (M2) *The dichotomy of the moral subject and the empirical subject*: Morality is *a priori*, independent of epistemic activity. Mou accepted Kant's view of morality as a set of universal laws. Where do moral laws come from? The moral subject, as a lawgiver of moral laws, is primary and presupposed by other subjects. Furthermore, every human subject capable of intellectual intuition can immediately discover and justify the moral subject (that is, he can generate a direct and introspective comprehension of the moral mind or the conscience). So the moral subject always provides metaphysical support, acting independently of the epistemic and political subject. From this, one can conclude that moral judgments made by the moral subject are also *a priori*, independent of any empirical knowledge. (M3) *The fundamentalism of Chinese culture*: according to the metaphysics of moral idealism, all cultural activities, including political and scientific ventures, should originate from morality. Since morality is the core of Chinese culture, whatever democratic politics and scientific knowledge emerge in that country must be based on the requirement of morality-in-itself, that is, Chinese culture. Chinese culture must preserve its subjective status as it absorbs science and democracy. Mou wrote, "Confucianism is the core constitution of Chinese culture. The form and direction of Chinese culture is always defined and led by Confucianism. If Confucianism were to lose its subjective status, then the Chinese culture possessing science and democracy would be no longer Chinese. Even if China has been modernized, it would lose genuine Chinese culture" (Mou 1987: 29; my translation). (M4) *The self-suspending thesis*: the production of scientific knowledge is based on an opposition between the (empirical) subject and the object. In the metaphysical level of being a moral subject, however, there is no distinction between the subject and the object. Or, in other words, the empirical subject and the empirical object are not diversified within a moral subject. For the production of scientific knowledge, "the moral subject, who exists in an absolutely complete and satisfactory level, must consciously create an opposition between the subject and its experiences, then extract the perceptions from the sensory experiences to make the object under investigation" (Mou 1987: 54; my translation).

Asked the two basic questions about science—"What is science?" and "How does science operate?"—the New Confucians offered no novel answers. But the writings discussed above suggest that Mou and other New Confucians accepted that science is empirical and positivistic (see in particular M1 and M4).[6] For positivists, science is defined by a specific method characterized by logical inferences and empirical test. All this is a product of Western culture throughout. In other words, none of the New Confucians would have objected to Y4. They recognized that Chinese tradition lacked the scientific spirit and that modern Chinese culture needed science—but that science had to be developed from Confucian tradition. In addition, they insisted that science was not everything. So they would have strongly resisted Yin's N2, N3, and N4. Nor would they have agreed with Y2 and Y1, for Mou claimed that his theory was a "moral metaphysics." Other New Confucians also emphasized the metaphys-

[6] In Kantian philosophy, scientific knowledge is nothing but the knowledge of phenomena. It is empirical and produced by the positivistic method. But the knowledge of phenomena is not that of reality, that is, of things-in-themselves.

ical meanings of Confucian tradition. As for morality, New Confucians rejected the idea that a moral judgment is only a matter of emotions. They believed that authentically moral judgments had to stem from the conscience or the practical reason. So they would have rejected Y3 and N1.

I have shown that Mou's thinking about science and its relationship with other cultural categories is quite incompatible with that of Yin almost point for point. Nonetheless, both men accepted a dichotomy between a morally humanistic Chinese culture and a positivistic scientific Western culture. This is what I call the Taiwanese version of the two cultures discourse.

6 Views on Science and Their Effects

After so much talk about subjects, objects, and experiences, the time has come to ask whether the academic debate between New Confucians and Positivists had any real effects on Taiwanese society. For example, did it play a significant role in Taiwan's modernization and industrialization? Did the ideas of the Taiwanese Positivists accelerate the introduction of Western science and technology into Taiwan? Did the ideas of the New Confucians hinder the advancement of Western science and technology in Taiwan? Or was Confucian thought in fact helpful in the development of Taiwan's science and technology? To these questions, I have a single answer: No!

My reasons are as follows. First, many works in the history, philosophy, and sociology of science written after the 1960s tell us that the development of Western science was not guided by a positivistic method, so transplanting such a method to Taiwan would not have assured the flourishing of the natural sciences. Moreover, the voice of the Taiwanese Positivists was suppressed by the KMT authorities.[7] And there is no evidence that most Taiwanese natural scientists and engineers adopting a positivistic approach, regardless of what they may have said about positivism. As to the role of Confucianism, my view is that Taiwan, a quintessentially Confucian society, has never ceased modernizing since the 1970s. Cultural conservatives, no matter what their ideologies or intentions may be, cannot resist the trend. In addition, the New Confucian doctrine was not anti-scientific view, as we have seen.

Therefore, neither Confucian tradition nor the view of science subscribed to by the New Confucians hindered the development of Western science in Taiwan. Did this mean that the New Confucians took the right stand? Did modern science and technology in Taiwan arise from Confucian foundation? Did a typical Confucian society succeed in realizing modern science and technology and at the same time retain its typical style? No. For Confucian thought gradually lost its dominant power over the cultural, social, political, and academic realm in the modernizing and industrializing Taiwan. It lost its subjective status. A "transforming" Confucian

[7] See Moody's description. "By the late 1950s opposition sentiment found limited public expression. Its main voice was the magazine *Tzu-yu Chung-Kuo, Free China*, edited by Lei Chen, a liberal KMT intellectual. Free China advocated multiparty elections and, very cautiously and very tacitly, a two-China policy. In 1960, Lei, together with other liberal mainlanders and some Taiwanese politicians, attempted to organize an opposition party. Lei was thereupon arrested, charged with failing to report the former communist affiliations of one of the magazine's employees, court-martialed, and given ten years." (Moody, 1988, 92) Yin Haiguang was one of those authors of editorials for every issues of *Free China*. After the Lei Chen event, Yin was prohibited to teach and touch students in National Taiwan University.

society such as Taiwan is far from a "typical Confucian society." It is more accurate to say that traditional Chinese culture in Taiwan has been changed by incorporating modern science and technology, as the Positivists always wished and expected, than that Taiwan's modernization and industrialization was guided by Confucianism.[8]

Views on and attitudes toward science, whatever it may be, seem to have nothing to do with the realization of modern science in a non-Western society such as Taiwan. So why do we want to talk about these views and attitudes? What role did they play in a period of transition? It is interesting that they appear to play a significant role in reforming, rearranging, and renormalizing the political order, intellectual culture, and humanistic-social discourse. They also shape different schools of thought in a changing society through controversy and competition. In the example I have discussed, the Positivists made a significant contribution to democratization and to the positivist social sciences (psychology, politics, and sociology) in Taiwan. Furthermore, the incompatible views on science and culture always compete with each other for the power to define culture.

Modern science appeared in Europe in the seventeenth century. Two hundred years later, it had become one of the principal sources of Europe's hegemonic power over the globe. Whether they accepted it or not, non-Western people could not but respond to this irresistible power. Older schools of thought, such as Confucianism, suddenly had to contend with modern Western science, something utterly unknown to them. Intellectuals in those nations had to build their own *science views*, which in turn would constitute a crucial part of their discourse on culture and tradition.

In the past, different schools of thought had often faced off. Now, they were obliged to formulate views on science—which soon become a new topic for debate. As cultures objectively encountered Western scientific culture, nations subjectively labored to acquire Western science and technology and the hidden power. Most traditional schools of thought found themselves falling into a predicament. Four general responses to this predicament can be characterized. First, Western science (and the other cultural forms that accompanied it) threatened the dominant traditions in non-Western nations. Local science views, shaped by the very institution under siege, would determine how this threat was evaluated. Second, Western science and modernity gradually changed the form of life in non-Western nations. People in non-Western nations usually maintained an ambiguous attitude about science; it brought them convenience, efficiency, novelty, powers, and satisfaction of desires even as it eroded traditional values, cultures, and conventional forms of life. What to choose? Local intellectuals' science views might have some influence over public opinions and the public imaginations; those would in turn shape a "cultural atmosphere" in which the next generations of intellectuals would be educated. Third, every nation has its own local knowledge of nature. Is this a science? How should one locate traditional knowledge of nature in the new system of knowledge centered on modern science? Local intellectuals would decide such questions according to their science views. Fourth, the combination of science, democracy, capitalism, and values such as freedom, liberty, and individualism had a great impact on non-Western nations, reshaping politics, views on culture, and even morality. So the competition over science views was inevitably linked to the competition over political, moral, and other cultural values.

[8] In the 1980s, some Western scholars tried to associate the modernization, industrialization and economic growth of East-Asian nations with Confucian thoughts. The association had been utilized to emphasize that Confucian thoughts might or did help the modernization of Taiwan by the Confucian community in Taiwan. I reject the claim. Yet, it needs a monograph to justify my rejection. Allow me to leave it for another paper.

Of courses, Taiwanese intellectuals after 1949 had four responses, about which we have discussed much. The New Confucians and the Taiwanese Positivists were two of the leading groups contending for the power to define and direct the development of Chinese culture in Taiwan. Paradoxically, they together created a grand discourse and became a historical prototype of the two cultures discourse in Taiwan.

7 The Two Cultures Discourse in Taiwan

The phrase "the two cultures" is linked to the name of C. P. Snow (1905–980), an English research scientist and novelist who enjoyed fruitful careers in private industry and government. His *Two Cultures and the Scientific Revolution* (first published in 1959) described two groups of intellectuals in contemporary British society, the literary camp and the physical scientists, and the deep gap between them. Snow suggested that differences in the learning, knowledge, and temperament of the two groups represented different cultures. He also said that they "had almost ceased to communicate," because their "intellectual, moral and psychological climate had so little in common" (Snow 1993: 2). The ocean of mutual suspicion and incomprehension between the two groups, alleged Snow, had unfortunate consequences for education, technology policies, and social reform. As we have known, Snow focused on literary intellectuals and physical scientists, most now reformulate the two cultures "the humanistic culture versus the scientific culture." In 1962, the leading literary critics F. R. Leavis found fault with this depiction of the literary society (for his criticism and Snow's response constitute the Snow–Leavis controversy, see Collini 1993). In addition, Snow's description of the scientific culture and British science had been also strongly stigmatized by David Edgerton (2002), a distinguished Science, Technology, and Society Studies (STS) scholar.[9] In spite of these criticisms, Snow's notion of the two cultures still influenced many scientists and became a basic frame in discussions about the role of science in society, for example, the Science Wars.

The Two Cultures and the Scientific Revolution was translated into Chinese in 2000, with an introduction by a Taiwanese scientist.[10] By the turn of the twentieth century, several Taiwanese scientists and popular science writers concerned with the issue of science and culture had expressed appreciation for Snow's notion (Li 1999; Kao 2003).[11] Yet, we should note that Snow's notion was criticized by STS scholars in Taiwan as well as in Britain (Fu 1998; Chen 2007).[12] This showed that Snow's notion was always at issue. However, I want to emphasize, Taiwan had had a thick "atmosphere" of "the two cultures discourse" before Snow's notion were popular there.

Discussion of the two cultures has animated Taiwanese intellectual life for many years. Phases like "Dialogues between the Science-Technology and the Humanities,"

[9] In 2002, Edgerton was invited to give a talk to Taiwanese STS community. His paper (Edgerton 2002) for that lecture had been translated into Chinese and collected in a Taiwanese Companion to STS (Edgerton 2002).

[10] *The Two Cultures and the Scientific Revolution* was translated into Chinese as *Lianzhuon wenhua* 兩種文化. The translation edition includes a Chinese introduction, written with high praises by a scientist, Zhang Yutun.

[11] Li Ko-Wei is a mathematician and Kao Yeong-Chuan a physicist. Both they have being active in popular science.

[12] Fu discusses the Sokal Affair, the Science Wars, the Two Cultures and the relationship between science and Buddhism in the contemporary Taiwan context. Chen Cheng-Liang's is a review article, in which the author examined the two cultures from the perspective of STS.

"The Scientific Spirit and the Humanistic Spirit," "Science and Ethics," "Medical Science and Medical Humanity," "The Classes for Studying Natural Sciences and the Classes for Studying Social Fields (in Senior High Schools)," and others fill everywhere. Public opinion, educational practitioners, policy-makers, and media all have addressed the issue at length. Their opinions were usually associated with discourse about *Chinese culture versus Western culture* and showed a special and local style that is different from that in Europe because Chinese culture is viewed as a morally humanistic one without science and Western culture is always seen as essentially scientific. The question about why modern science and technology had never appeared in China was asked once again and is still asked now in various formulations.[13] This fact shows that in Taiwan, science was always exclusively understood as modern science and modern science was Western throughout at all. As we have seen, the historical prototype of discourse about the two cultures could be traced to the controversy between the Taiwanese Positivists and the New Confucians.

In spite of their different views of science and culture, the New Confucians and the Positivists expressed their opinions in terms of a shared frame that juxtaposed traditional, moral, and humanistic Chinese culture with modern, positivistic, and scientific Western culture. On issues about science and culture, the opposition between the New Confucians and the Positivists had a strong influence on the next generations. Their influence may be seen in a series of subsequent debates or movements—the bellicose debates on Chinese versus Western culture (*zhong xi wenhua lunzhang* 中西文化論戰) that broke out in 1962,[14] and in the efforts to Sinicize the social and behavioral sciences in the 1970s and 1980s.[15]

[13] Of course, the ancient technology in the traditional China is advanced. Why did the modern science and technology not occur in the traditional China? This question was asked many times and has been asked again by humanistic and scientific scholars. A humanistic scholar asked, "As for the modern science and technology, we can still ask a meaningful question in Max Weber's sense: Why did the traditional China not give birth to the modern science and technology as modern Europe did, given its splendidly traditional technology?" (Li 1997: 58) An engineering scholar said, "The most difficult problem is to ask whether there was science in the traditional China or not." He gave a negative answer (Chou 2008: vii-viii)

[14] It was a continuing affair directly resulting from the conflict between the New Confucians and the Positivists, because Yin Haiguang's students took part in it. English-speaking readers can refer to Moody's sketchy description: "*Free China's* spiritual successor was *Wen Hsing* (文星, *Literary Star*, or *Appollo*). Its focus was more cultural than narrowly political….A confrontation between *Wen Hsing* and the regime was probably inevitable, but the style of the confrontation when it came was influenced by personal hatreds. The most respectable of the frequent contributors to the magazine was Yin Hai-Kuang, a professor of logic. The most spectacular, however, was one of Yin's students, Li Ao (李敖), a young graduate of National Taiwan University with a facile pen and a sense for the jugular in political or cultural controversy. He included in his arguments merciless personal ridicule of his opponents and stories about embarrassing episodes from their younger years. He delighted in scandalizing the more pompous upholders of conventional morality. And he was better informed about the traditional culture he was attacking than were his victims who were defending it." (Moody, 1988, 92) The debate is worthy of a longer monograph.

[15] The movement was in fact led by the second generation of Taiwanese positivists, the sinicization group in social and behavioral science. They claimed that the social and behavioral scientists have to apply the positivist science to investigate Chinese society. Thus, researches in social and behavioral science in Taiwan would have Chinese style. So they are labeled as "the sinicization group." The group attempted to replace Chinese traditional humanities by the sinicized positivistic social science. Although the sinicization formulation of the social and behavioral sciences reflect Taiwanese intellectuals' attempt to incorporate Western positivistic science into Chinese culture, it implicitly presupposes the opposition of traditionally Chinese humanities and positivistic Western science. For a related study, see Fu 1993.

In addition, the interpretations of Confucianism, science, and culture offered by the New Confucians yielded a deep inscription on the followers of Confucian thought and many university scholars in departments of the humanities (Chinese, philosophy, art, history, and others) and the social sciences (politics, law, management, and economics). From the 1950s to the twenty-first century, the Confucian community and the humanistic scholars have produced many books and articles based on the grand frame of morally humanistic China and positivistic scientific West. Some emphasized *huitong* 會通 ("dialog and communication") between Chinese and Western cultures (Mou 1990; Chiang 1994; Li and Lin 2007) (Fig. 2).[16] Some urged the humanistic and socially scientific scholars with a positivistic position to return to Chinese tradition. One historian wrote, "Unfamiliar with traditional culture, scholars from the humanities and the social sciences tend to fall into the trap of positivism. They also failed to find this trap.… We should open a new vision for the academy by rooting it in the humanistic spirit of Chinese culture" (Huang 1983: 7).

Until today, discourse about the two cultures still permeates Taiwanese society. It is usually presented as *keji yu renwen de duihua* 科技與人文的對話 (a dialog between the science–technology and the humanities).[17] Organizers of these forums usually invite a respectable Buddhist monk to talk with the manager of a computer hardware company. Although the facilitators do their best to emphasize dialog, communication, interaction, mutual understanding, and cooperation between the humanities and the science–technology, the backdrop must always be the assumed opposition of the two cultures. As the Buddhist monk and the manager had stood in the opposite side separated by a wide gap, they need to build a bridge to cross the gap and help people in the two sides to understand the other side each other. Although time has weakened the association with the debate about Chinese and Western cultures, the interaction between Buddhist wisdom and management experiences seems still to echo the old "East versus West" frame. Because of the limited scope of this essay, I will not say more contemporary discourse about the two cultures in Taiwan. However, I do want to say that this situation is an *unhappy* one for the development of Taiwan's science, society, and culture. We need a reflection on that historical prototype.

8 Concluding Comments

I have shown that the science views of New Confucianism and Taiwanese Positivism ever played important roles and yielded significant effects on Taiwan society during its

[16] Following to the New Confucians, later Confucian community in Taiwan much loves to talk about *huitong* between Chinese and Western cultures.

[17] An illustrative instance is *Jiyin keji yu renwen de duihua: meili xinshijie de iohuo* (*Dialogues between genetic technologists and humanists – The temptations of the brave new world*) (queryTai 2004). This book collects a series of popular lectures by medical and genetic scientists on one side and ethical, legal, and social scholars on the other side. It was published by The Chinatimes Cultural & Educational Funds (CCEF) in cooperation with Taiwan National Science Council. The Funds is subordinated to a large mass-media and publishing company, the Chinatimes Company. The boss, being one of the publishers, writes a short preface to the book and expresses an expectation that the media should "play a bridge (mediating) role for communicating the science-technology with the humanities." (Tai 2004: 12) Another instance is a conference volume that was organized and published by a respectable Buddhist group, Fagusan 法鼓山 (Dharma Drum Mountains) (Dharma Drum Mountains 2002). Many scientists and humanistic scholars are invited to contribute papers for promoting the interaction between science-technology and humanities.

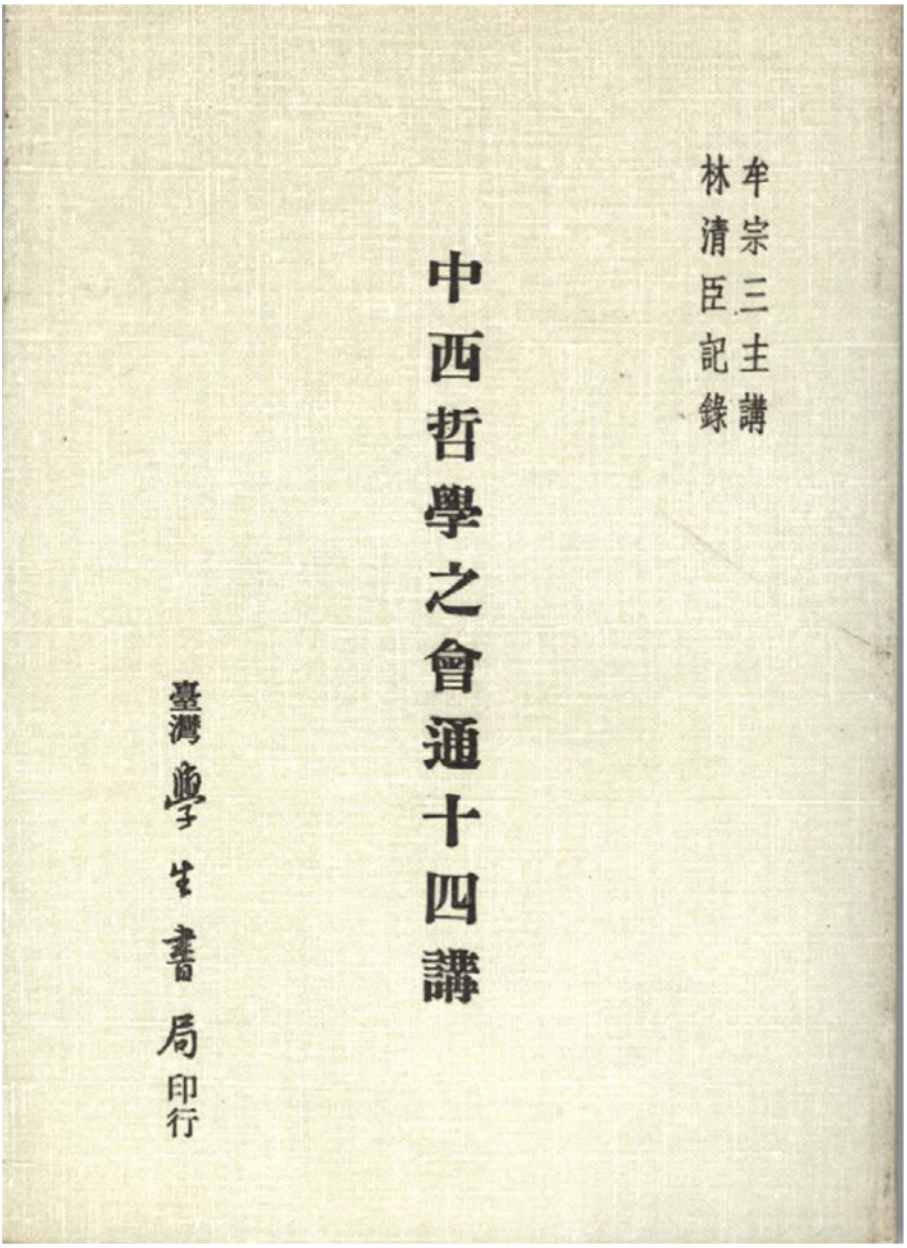

Fig. 2 The cover of Mou Zhongsan's *Zhong Xi zhexue huitong shi si jiang* (*14 lectures on the dialog and communication between Chinese philosophy and Western philosophy*)

transformative period, although neither of them actualized their ideals. On one side, despite that the Positivists made a great contribution to a democratized Taiwan, their science view barely affected the modernization and industrialization of Taiwan. On the other side, nor the New Confucians' expectation had been actualized (they had ever

expected that Taiwan could preserve itself as a typical society of Chinese culture in the process of modernization and industrialization), because modern science and technology would inevitably change the form of life and culture in Taiwan.

I also have shown that both camps fit into the frame of the two cultures. The Positivists imagined that we should supersede or transform the traditional Chinese culture by transplanting Western science into Taiwan, while the New Confucians elaborated a theory permitting the two cultures to unite with Chinese culture taking the lead. But because of a primary commitment to one side, they ensured that the two cultures remained fixed and separate.

In the West, the strictly positivistic view of science came under fire in the 1960s, and since then, many studies have shown that it is not an adequate explanation for scientific knowledge, practice, and development.[18] Since the breakthroughs by such notable philosophers of science such as Karl Popper, Thomas Kuhn, Imre Lakatos, and Larry Laudan, and the post-Kuhnian generation including Ian Hacking, Ronald Giere, Nancy Cartwright, and others, a new image of science has emerged: a positivistic, single-methodological, united, accumulative, anti-metaphysical, and morality-free image of science is no longer precise or adequate.[19] Nowadays, science or sciences, including modern science, have come to be seen as a more-or-less systematic means for understanding and controlling natural and artificial events, involving problem-solving activities, plural methods and methodologies, evolutionary changes, diverse disciplines, and mutually competing theories. Scientific practices are also metaphysics-related and value-related activities. Moreover, since the 1980s, scholars in the field of Science, Technology, and Society Studies have been constructing a coevolutionary image of science, technology, and society. Some STS studies tell us that the form of life in a society has a close interaction with the scientific and technological system in that society. This implies that the form or style of life may be changed by scientific and technological change and vice versa. The new image of science and technology constructed by the postpositivists, post-Kuhnian philosophers of science, and scholars in STS poses a challenge to both Taiwanese Positivists and New Confucians.

The time has come to reflect on my topic from the perspective of science, technology, and society studies, in the mode of a post-Kuhnian philosophical reflection. As they set out to address the dichotomy between a moral culture and a scientific culture, both the Taiwanese Positivists and the New Confucians erred by ascribing to science an objective, value-free, and positivistic methodology. Both of them were wrong to suppose the essential separation of the Chinese and the Western culture, that is, the separation of morality and science. Yet, the Positivists were right to allow that the Chinese culture would be transformed by incorporating "Western science" into Taiwan. Since they presupposed the fixed essences of Chinese and Western cultures—the New Confucians should be subjected to more reflections than the Positivists; after all, the former anchored the two cultures to a philosophical and metaphysical foundation. For them, the humanistic moral subject and the scientific epistemic subject incarnate the two distinct levels of

[18] For Taiwanese reviews and researches on the development of philosophy of science, see Chuang 1994, Yuann 2003, Fu and Chu 2001, Chen 2003b.

[19] See Popper (1959); Kuhn (1970); Lakatos (1978); Laudan (1977); Hacking (1983, 2009); Cartwright (1999); Giere (1988, 2006).

existence; intuitively real morality and empirically phenomenal knowledge represents the two metaphysically separate worlds. The morally metaphysical doctrine entitles humanistic scholars to make *a priori* moral or value judgments about scientific research without considering the historical and empirical development of science interweaving with morality and values. This separates ethics and humanities from the scientific and technological world of life. It even presupposes that "the essence of Chinese culture" is beyond the actual development of science, technology, culture, and society in Taiwan and China. In principle, New Confucians remains opposed to the post-Kuhnian philosophy of science and the science view of STS.

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