Tsinghua University is now a national leading university in China. It has been regarded as a polytechnic university for a long time. However, in the early 20th century, Tsinghua was famous as a comprehensive university.

I. Luo Jialun vs. the Nationalization of Tsinghua

Compared with the earlier-established prestigious university Peking University (Beida), Tsinghua School (the predecessor of Tsinghua University) was built a little later. In 1911, it was established in Beijing. By 1920, there were only 3 National Universities, namely, Peking University, Peiyang University and Shanxi University, All of which were located in Northern China, the heartland of Peiyang Government, while more than 20 mission schools were dispersed all over China. Generally speaking, most of the faculty were unqualified. Tsinghua School was nothing but a replica of American middle school. From 1911 to 1925, all the examinees had to pass a rigorous matriculation and only less than 5% of them (usually less than 150 students) were lucky enough to be recruited by this school. Thereby almost all of them were very intelligent. Once recruited they would have to get trained even more rigorously in the next 8 years. The training was so challenging that almost half of the students were knocked out of the school.

In Tsinghua, all of the courses were language-centered, and English learning was the dominating one, including listening, speaking, reading, writing and translation. Moreover, Christianity Youth Union, which was absolutely prohibited in the National Universities, was quite active in Tsinghua. According to the rules, every student must write home once a month. This copies some of American middle schools’ rule. As a matter of fact, the school modeled itself on Saint John’s University in Southern China (Shanghai), which was praised as “Harvard of China”. To be honest, the famous school repined of its inferior level and of being regarded as a mission university. It wanted to be closer in style to the Saint John’s University.

In 1920, Rusell, the guru of UK academic circle, visited Tsinghua School, after giving a series of lectures in National Peking University. Then he described Tsinghua as “a large school migrating
from America to China”. Tagore (India) and John Dewey (US) also gave the same appraisal. In 1923, Liang Shiqiu, a graduate of Tsinghua, visited National Southeast University and was fascinated by the profound learning of Prof. Wu Mi. He criticized the inferiority of Tsinghua’s academic atmosphere. Tsinghua responded to these criticisms and promoted itself to a junior college 2 years later.

Meanwhile, the social environment was changing. In the summer of 1928, Northern Expedition Army took Beijing and the Commander in Chief Chiang Kai-Shek entered the capital of Peiyang Administration. In his speech, he emphasized the significance of ideology and insinuated that the new government was bound to get involved in thought control which was always neglected by Peiyang Administration. Consequently party-oriented education was doomed to be in conflict with liberal education.

After a fierce competition, Luo Jialun, the former secretary of Chiang Kai-Shek, was appointed as the new president of Tsinghua. Luo, an outstanding student of Peking University, was an innovationist and was resolute in action. He updated Tsinghua from a Senior College to a National University and decidedly regrouped the teaching-research team. Thirty-eight unqualified professors were dismissed while twenty-eight excellent new professors were hired. The new teaching-research team was proficient in their specialties, partly because the team’s quality has improved, and partly because its structure has been transformed radically. Luo, as a promising graduate of Berlin University and Princeton University, was familiar with the essence of university. He knew how a mainstream cosmopolitan academy works. He was keen to seek after men of worth and ability. He was much interested in those young scholars who were well educated abroad----in a word, the young men who were aggressive, ambitious and with great potentialities---- rather than the aged run-of-mill celebrities. He did all these to create a prominent university and train numerous topnotch talents to serve the Kuomintangruled China (党国).

Luo’s reform affected many people’s interests, but he didn’t care. He responded avowedly: ‘So what, who cares? To be honest, I don't know the so-called denomination. What I know is that nothing is more important than talents. In a university, academic activity is the nucleus of all, and research surpasses everything.’ In his inauguration he pledged: ‘the primary historical mission is research, and the vocation of NEW TSINGHUA is to gain academic independence for China.’ Tsinghua, as a top university of the nation, undertook the mission of a nation-state’s invigoration in the future.

Thus Luo established a university with new patterns, a research-oriented university. It drew on the experiences of the first-rate occidental universities and sprang up as a high-quality university. At the same time the rival universities also emphasized the importance of research. For instance, both Imperial University of Tokyo and Imperial University Tohoku, claimed: ‘Research is the foundation of all.’ ‘Nothing is superior to research.’ At that time, this is a brand-new threshold to Chinese university circle.

Hence a new system of academic evaluation criteria emerged. All the faculty were encouraged to do research and to publish their fruits freely home and abroad. He Lian, an illustrious economist and a professor of Nankai University, detected: ‘in the 1920s the situation of China’s higher education in social sciences was rather bleak. Almost all the textbooks, most of which were the duplicates of occidental texts, were disjointed with China’s national conditions. Moreover, almost all the teachers were compelled to shuttle back and forth for part-time jobs among several colleges. Overall, their handouts were nothing but their notes when
they were studying for a degree abroad, and gradually they abandoned their research. What is worse, their academic minds were decaying day by day: the longer they teach, the worse they become.” Luckily, Tsinghua was a rare exception. Such a new evaluation criteria tended to give rise to a superior academic environment, which can effectively attract many brilliant scholars, and advance their researches. For example, Dr. Wu Youxun (吳有訓) who graduated from Univ. of Chicago with excellent academic records returned to his alma mater – National Southeast University (National Central University, Nanking), which was the best university in Southern China. But he could not continue his research there. Then he went to Nanchang to establish a new university in order to realize his dream of“Save the Nation by Science”. He failed just 5 months later. The reality tended to ruin this especially creative scientist. At that moment, Prof. Ye Qisun, dean of Physics Department of Tsinghua, learned about Wu’s dilemma, and he sincerely invited Wu to Tsinghua. Tempted by the academic atmosphere of Tsinghua, Wu accepted the invitation. In Tsinghua he made great achievements and became a world-famous nuclear physicist. What’s more, he trained dozens of outstanding talents in this university, many of whom became the founding fathers in the development and launching of the atomic and hydrogen bombs and manmade satellite, laying a solid foundation for China’s national defense system.

Governance structure is another important change in the transition. Before Luo Jialun Era, staff were more vigorous than the faculty, but the latter’s voice was always ignored in decision-making. After the reform Professorate became the dominant group. Generally speaking, such a pattern was distinct from that in other universities (e.g. Peking University, Central University which were governed by their presidents). The university was ‘governed by professors’, which meant the faculty became the leading position in the university. They could use the school equipment freely to serve their researches and gave full play to their independence, and creativity in the university’s fundamental policy decisions. In such a supereexcellent environment, they can concentrate on their researches.

In addition, Luo changed the administrative relationship of the university. Historically Tsinghua was under the leadership of the Ministry of Foreign Affairs of Peiyang Administration. After the Northward Expedition, it was governed by the Ministry of Foreign Affairs of Nanjing Kuomintang Administration. This ministry was notorious for its corruption, which would definitely imperilled the sound development of Tsinghua. Luo, taking advantage of his exceptional status (pre-secretary of Chiang Kai Shek, Kuomintang member of Central Committee) defeated the Minister Wang Zhengting (a noted Party Politician) by cooperating with Dai Jitao, Chen Guofu and some other dignitaries. Finally the jurisdiction was transferred from the Ministry of Foreign Affairs to the Education Ministry. Then Tsinghua entrusted its fund to Sino-British Foundation Committee, an independent organization (NGO) which provided it a sound economic base.

To sum up, under Luo’s leadership, Tsinghua was transformed from a junior college into a relatively self-contained university.
II. Chaos and the Development of Tsinghua

In the summer of 1930, Luo Jialun was accused of spying by Yan Xishan (a powerful warlord of Taiyuan in Shanxi province). Almost at the same time campus upheaval erupted. He was denounced by hundreds of students, and none of the faculty supported him. Nearly all the personages in professorate kept away from him. Being so isolated, he had no other choices but to leave Tsinghua. He tried seeking help from Chiang Kai Shek, his former boss, but was rejected because Chiang himself could not predominate the intricate complexion in North China.

Then Yan Xishan occupied North China, and interfered with the intellectual community of Peiping. He nominated a new president of Tsinghua. The new president, M.A. Qiao Wanxuan, was a politician from Shanxi province rather than an alumnus of Tsinghua. Compared with savants, Qiao was a mere nobody, an ignorant madcap man. Undoubtedly he was banished by Tsinghua students. The military-political situation was transient. Soon Chiang Kai shek reigned over North China and he appointed a young man as Tsinghua’s new President. The newcomer was Wu Nanxuan. Wu, former vice dean of Central Political College (Nanjing), was recommended by Chen Guofu and Luo Jialun. He was a loyal disciple of Three Principles of the People (三民主义) and a dutiful underling of Chiang Kai shek. Wu was also expelled by Tsinghua. Chiang flew into a rage, but he couldn’t change the facts. Tsinghua endured every kind of trail and kept steady and intact. In such chaos, the system of “governance by professor” got firmer and firmer. The university was improved in its academic concern. It was noteworthy that its graduate school was founded in that interval, with about 50 students, and soon it became the best one of Chinese graduate schools. By then, Tsinghua had established a relatively complete system that cultivated talents. The first batch of Masters was trained by this graduate school. For example, Chen Xingshen, the first master of mathematics trained by mainland China, graduated from Tsinghua in 1933, and ascended into the uppermost mathematicians in the world. In addition, Fei Xiaotong, graduating from Tsinghua in the same year, made the leap into a worldwide renowned sociologist. As the outstanding graduates they also received further training abroad (in occidental well-known universities), funded by Tsinghua graduate school. Chen and Fei, graduates from Nankai University and Yanching University respectively, all entered Tsinghua subsequently. Actually Tsinghua had appealed all kinds of talents from some other well-known universities across China because of its charms. And the enrollment of these talents further lifted its academic level.

III. Mei Yiqi vs. the Breakthroughs of Tsinghua

On the day of Sep 18, 1931, some young officers launched the aggressive war in Shenyang, Southeast China. Chinese people had to fight against aggression.

During this social upheaval, Prof. Mei Yiqi (currently in the US) was appointed as the new president of Tsinghua. He was famous for his logion which embodied his education idea: “university means great masters, not skyscrapers.” “大学者，有大师之谓也，非有大楼之谓也。” While he threw
most of his energy into the development of School of Technology and consequently this discipline strode ahead in a few years. In Tsinghua University, the School of Technology was established in 1932 while it boomed quickly and became the top one all over the country. In 1935, one of its students commented in his article: ‘there is no doubt that Tsinghua’s technology discipline has now become one of the best disciplines among peers, if not the best one.’

Since 1933, this school has been most popular in the freshmen in Tsinghua. In the fall of that year, 350 freshmen were enrolled and 1/3 of them chose the School of Technology. Immediately students in the Science & Technology school were much more than those in liberal arts school and law school, and this university became well-known particularly for its School of Technology.

Department of Physics, the elite of Tsinghua’s School of Science, was a paradigm of Chinese academia. Most of the faculty was the graduates from University of Chicago and California Institute of Technology. The statistical data showed that in the 1920s, lots of doctoral graduates from Department of Physics in these universities came from former Tsinghua School and subsequently returned to Tsinghua University as teachers.

According to the documents concerned, the first Chinese physics doctor (experimental physics) was Li Fuji (李复几), who got his degree in 1907 in Germany. Most of the senior physicists graduated from USA. The first group of them graduated in 1918 (Li Yaobang 李耀邦, Yan Renguang 颜任光, Univ. of Chicago; Hu Gangfu 胡刚复, Harvard). While the first Chinese doctorate owner from USA emerged much later (Wang Shoujing 王守竞, 1927, Columbia University). The second owner appeared in the next year – Zhou Peiyuan, who got his doctorate and served Tsinghua since 1929, as the youngest professor in Tsinghua. He was famous for his research in Generalized Relativism and Turbulent Flow Theory.

Such a department was of significance in Chinese science academia. It was leading the Chinese physics community, with its faculty leading other professionals in this profession. Among them Prof. Wu Youxun was a paradigm. In the 15th anniversary of Tsinghua Science Society established by Ye Qisun in early 1929, Wu alleged: “In China today, only 3 universities are first-rate: the National Peiking University, National Central University and National Tsinghua University, and the last is the best. Tsinghua is the most promising among them.” Surely, Wu had published a quantity of high-quality papers in Nature and Science since 1930. In mainland China, he was the first physicist who published his fruits in world-top journal and the first Chinese scientist who was elected to be academician of foreign countries (Wu became the academician of Germany in 1935). In such dept., Prof Wu Youxun and Zhao Zhongyao, were graduates of nobel prize winners A. H. Compton and E. Rutherford respectively. Although they had accomplished so much, unfortunately they narrowly missed the Nobel Prize for various reasons, which was a great pity for them. (Coincidentally, Prof. Wu was the graduate from Univ. of Chicago, while Zhao was the graduate from CIT. But both of them were promoted to professor at the age of 29; Wu was regarded as “the most eximious student” of Prof. Comptom). Anyway, this department developed continuously. And its academic achievement was stupendously upgraded in few years. Under the leadership of Wu Youxun, China’s first modern physics laboratory was established in Tsinghua in 1935, which reached the world level then. By the middle 1930s, its graduate education was nearly gain upon some world-class notable universities. For instance, Wang Ganchang, Peng Huanwu, Wang Dahang, soon became world’s leading
physicists, parallel some Nobel Prize winners. In 1940, Prof. Zhou Peiyuan and Fu Chengyi, went to CIT as visiting scholars. Then and there, Qian Xuesen, Qian Weichang, Lin Jiaqiao and Guo Yonghuai, four young scholars, followers of Prof. Kármán, Theodore von as doctoral candidates. Each of them performed perfect, astounding Prof Kármán, Theodore von with their prominent creativity. The professor was deeply impressed by the research status and achievement of the Department of Physics in Tsinghua. Suddenly he realized that he had made a mistake: he let slip to visit Dept. of Physics of Tsinghua when he visited the university in the summer of 1937, eve of Sino-Japan war. In the early 1940s, National Southwest Associated University (which embodied Tsinghua, Peida and Nankai) could provide high-quality curriculum. Dr. Chengning-Yang, a graduate from National Southwest University and future Nobel Prize winner, asserted boldly: “what I learned in this university can compete with that in the famous universities in USA.” “Prof. Zhou Peiyuan and Wu Dayou had launched world-class courses. For example, the Field Theory, which I learned in Southwest Associated University, was much more profound than that I learned in the University of Chicago.”

As early as the winter of 1932, a group from League of Nations visited China and surveyed the situation of China academy and education. One of the scholars in this deputation was Langevin, Paul, a world-class famous physicist from France. He inquired about the status of China’s higher education, and in the end he gave a suggestion that in order to impel the development of academy Chinese scholars should establish a physics academy as soon as possible. Organization is an essential impetus to academic development. At that time, there were 108 universities or colleges in China, 20 of which established department of physics, with less than 300 physics teachers altogether. In 1932, with the endeavor of Chinese scholars, Chinese Academy of Physics was established and the founding meeting was held in Tsinghua, led by Science School of Tsinghua University. Its Department of Physics was the General Trustee of Chinese Academy of Physics. While the initial president was Li Shuhua (Peiping University), most of the council members were from Tsinghua. Although there were only 5 professors and 3 lecturers in the Department of Physics of Tsinghua, they were the leaders of the physics circle because of their outstanding academic achievement.

As we know, Tsinghua attracted the earliest theoretical physics researchers, and its Department of Physics offered the earliest curriculum in this concern. Consequently, the earliest talents came from this department. Some of them became key personnel of the research group in China. According to some statistics, from 1931 to 1949 Chinese scientists had published 50 treatises in Nature and Science, 28 of which were finished by Tsinghua. What’s more, 13 physics treatises were all finished by this group from Dept. of Physics of Tsinghua.

In 1932 the Second Plenary Session of the Fourth Central Committee was held by Kuomintang, and a series of bills were enacted, quite a few of them concerning higher education. Thereafter China’s academia was obviously improved. Then education expenditure increased, amounting to about 4% of the master budget, reaching the acme in modern China.

Simultaneously, in this Session, Luo Jialuo (president of National Central University) and Zhu Jiahua (Minister of Education and former president of National Central University) denounced the phenomenon of advocating liberal education while boycotting the education embracing the Three Principles of the People, especially that some magnates did so. Obviously such a judgment
made allusion to Cai Yuanpei, who had been Luo’s mentor in Beida.

However, Mei Yiqi disagreed with his predecessor on this point. He resisted party-oriented education with liberal education. He yearned to academic independence. In fact, Tsinghua was the model of general liberal education, deserving praises from various aspects.

IV. Interation between Academy and Social-politics

Japan rose up in Meiji Renovation, and soon the barycenter of East Asia transferred from China to Japan. Under the impact of economic crisis, Japan speeded up its invasion to China. North China clam down transitorily after the China’s Civil War in 1930. However, in 1931, Ishiwara Kanji (石原莞尔) and his troop encroached Shenyang. In the next year, Shanghai was attacked by Japanese troop. In 1933, Japanese army invaded the Great Wall and Peiping was imperiled. In north China, the roof was caving in. Moreover, Japan’s universities (such as Imperial University of Tokyo, Imperial University of Kyoto and so on) rose to research-oriented universities, they stepped up Aeronautical Engineering research and development. Hereby, Japan was strong in air force and assaulted the vast region of China from airspace. Nanjing Government had to develop aeronautics to defend its basic safety. As a famous comprehensive university, Tsinghua was dictated to advance aeronautics discipline as soon as possible. In 1934, Tsinghua, located in Peiping and menaced by Japanese troop, initiated new researches and soon became one of the 4 centers of Aeronautics Engineering research across China. In the spring of 1934, when it displaced research devices, it transferred some of them to Tientsin and Shanghai, and without notice established several institutes in Changsha, which became the base of Changsha Temporary Associated University. What’s more, it cooperated with the authorities in this concern and established an Aviation Academy in Nanchang. The first Wind Tunnel was developed shortly after, the biggest one in East Asia, half larger than that of Japan.

Such situation enforced Tsinghua’s transition. More and more resources were transferred to these disciplines and converged in these departments. While liberal arts became more and more marginal. This was in accord with the purpose of the education authorities (especially Chen Lifu, Zhu Jiahua). But Prof. Chiang Ten-fu griped: “such a deed is without vision.” That was right. This was a latent disaster for Chinese intelligentsia. These problems flared up and corroded the whole education system in the post-war era. Luckily, Tsinghua, the top university of China, had boomed up as a comprehensive university by the middle of 1930s. In the middle and later periods of 20th century, East Asia will be changed to a certain extent.

Notes
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