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On the connotation of patriotic spirit of scientists

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Abstract

Patriotic spirit is the quality shared by excellent scientists all over the world, and it is the first essential of the spirit of scientists. The connotation of the patriotic spirit of scientists mainly includes four aspects: Concerned about the strength and the revitalization of the nation, which is the soul of the patriotic spirit of scientists. Subjecting to the needs of the country, which is the moral consciousness of scientists' patriotic spirit. Serving the country and the people with science and technology, which is the unity of patriotic emotion, goal and behavior of scientists. Having an international vision and mind, which is the unification of the patriotic spirit of scientists and the trend of globalization.

Keywords: Patriotism; Spirit of Scientists; Moral Consciousness; Connotation

1. Introduction

As an elite group, scientists are not only the academic elite, but also the model of virtue. German philosopher Fichte believes that scholars are the best. If the best people lose their power, what will they use to inspire them? If the best are corrupted, where is morality and goodness to be found? Therefore, the scholar should be the highest moral person of his time, and should represent the highest level of moral development possible for his time (Li, 2009). In this way, scientists should be the representative of the patriotic spirit. This article analyzes the connotation of scientists' patriotism by following General Secretary Xi Jinping's important expositions on scientists' patriotism and the country's policy spirit on scientists' spirit, combined with scientists' growth experiences and remarks.

2. Material and methods

2.1. Concrete analysis of the patriotic spirit of scientists

2.1.1. Concerned about the strength and the revitalization of the nation

Before he went to study in the United States, Ye Qisun made a vow: "Keep in mind that my generation spent a lot of money to study abroad. Every word and deed must be for the welfare of the motherland." On the night of the March 18 massacre in 1926, Ye said to his students through tears: "Why was a country, a nation, beaten? Why are they lagging behind? Do you understand? If our country at the moment is as powerful as the Tang Empire, who in the world would dare to bully us? A country is like an individual, the law of the jungle is an immutable law. If we want the country not to be insulted by foreigners, only rely on science! Science, only science can save our nation..." Mr. Ye's patriotic passion, the kind of visionary thought of scientific national salvation, the expectation of Xu Sheng, deeply infected Wang Ganchang. Since then, patriotism and understand the truth closely related to science became the most important light in Wang Ganchang's life, and guided his life's path (Chu, 2016). In the summer of 1936, before Hua Luogeng left for Britain to study, his good friend Yu Shouxun came to see him off and said: "How do you feel about traveling on a long wind today,

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breaking thousands of miles of waves, far from your native land?" "I don't have much to think about. I just want to win glory for my country," Hua said. In a discussion with American mathematician Professor Lemer, Hua said emotionally: "China is a big country and a great country. Why are we so backward in math? We must catch up, and I think we can." On March 11, 1950, Xinhua News Agency broadcasted Hua Luogeng 's Open letter, to all Chinese students studying in the United States written on his way back to China: "My friends, 'Liangyuan is a good place, but it's not a long time home.' Come back! ... In order to choose the truth, we should go back; For the sake of our country and nation, we should go back; In order to serve the people, we should go back; Even if it is for the personal future, we should go back as soon as possible, to establish the foundation of our work, and to strive for the construction and development of our great motherland..." This letter is the determination of Mr. Hua to strive for the scientific cause of new China. At the same time, he also expressed his sincere and profound patriotic aspirations, which touched the hearts of countless overseas students to return to China (Ma et al., 2020, P45-47).

In 1947, Qian Sanqiang and He Zehui had made great achievements in the Curie Laboratory in France, discovering the phenomena of three and four divisions of uranium and a series of achievements that had a great impact on the international physics field. As a result, Qian was promoted to research supervisor at the National Centre for Scientific Research in France (a rare position for foreign scholars). But here's what they were thinking: "To remain in Paris is, of course, very beneficial to his scientific work; Back in the poor, backward, war-torn China, it may be difficult to make a difference in scientific experiments. However, we are more clear that because the country is poor and backward, it is more necessary for scientists to work hard to change its face. When we left home and traveled across oceans to Europe to study abroad, the purpose is to learn advanced science and technology, so that we can go back to serve the motherland. How can we change our intentions? We should go back to our motherland and work with other scientists to make the new science of atomic nucleus take root, blossom and bear fruit on our motherland's soil. We are eager to return to the homeland we left for ten years and are determined to contribute to the prosperity and progress of our motherland." When a reporter asked Peng Huanwu why he returned to China, he said, "No! I have no reason to answer your question. Your question should be put in a different way, that is, as a Chinese, why not go back to their motherland, and contribute to her strength? It is my duty to use what I have learned to care for her and build her up so that she will be strong and no longer be bullied" (Liu, 2012). Ma et al. (2020)The patriotic sentiments of Qian and Peng also represent the common thoughts of Chinese scientists who studied abroad in the 1930s, such as Yang Chengzong, Wu Jianxiang, Wu Dayou, Hu Ning and Zhang Wenyu.

2.1.2. Individual choices should be subordinated to the needs of the state

In 1905, Sun Yat-sen sent Li Siguang "to study hard and win glory for the country" to encourage him. Li Siguang also spent his whole life practicing the true meaning of this message. He studied in Japan as a "Marine organization professional", hoping to save China with a strong ship. After the failure of the Revolution of 1911, Li Siguang's ideal was blocked, and he went to England to study again. This time he chose mining as his major, and a year later he changed his major to geology, because he believed that only by studying geology could he know where the minerals were, and then smelt steel and made ships. There was only one reason behind Li Siguang's two major changes -- national needs. According to Ma et al. (2020), Zhou Peiyuan, who wanted to save the country by science, had put down the theory of relativity, which he had studied for more than ten years, and turned to the theory of turbulence, which had great application value. "I didn't think relativity could be directly used against the war. As a scientist, witnessing the enemy right in front of you, I must save the motherland with science, so I chose fluid mechanics" (Science and Spirit Series, 2020, P19). In 1942, Wang Daheng was studying for a PHD. However, when he realized that the development of science and technology in China was in urgent need of optical glass technology, he resolutely gave up studying for a doctor's degree and went to study and work in Chance Glass Company in Britain, where he became a physical laboratory engineer (Ma et al., 2020, P62).

When Wang Shouwu returned to China, he did not set a fixed research field or goal for himself. He only had a simple idea to do what the country needed. "When I returned to China in 1950, I didn't have any plans. I just felt that New China had just been founded and I wanted to make a contribution to the country's construction," he said, "I had a very simple mind and didn't know what to do when I came back, I used to study engineering mechanics, and then I changed my major to physics. I think I can do anything when I come back to China for construction." Li, et al. (2015) insisted that Wu Ziliang's main research interest was in physical metallurgy, but in the early years of the founding of the People's Republic of China, the problems of fine materials subject needed to be solved in the national economic construction and national defense construction, so he resolutely gave up his personal interest and devoted himself to the research of "A type separation membrane". "The needs of the country are the direction of what I study," he stated (Ma et al., 2020, P107). In 1959, when China's nuclear weapons development was in difficulty, Zhou Guangzhao insisted on returning to China. He wrote to the head of the Second Aircraft Defense Department, saying: "As a generation of scientists trained by the People's Republic of China, I am willing to give up the basic theoretical research work I have done for many years

and change to work in urgent need of the country. I will always listen to the call of the motherland" (Ma et al., 2020, P194). In 1961, when Wang Ganchang received the decision of the central committee to develop nuclear weapons, and asked him to participate in the leadership of atomic bomb development work, he sonorously and forcefully answer: "I will die for my country". If Wang Ganchang could continue to work in the field of scientific research, it was very likely that he would knock the door of Nobel Prize in the future. However, he "changed his career" so that China could build atomic and hydrogen bombs (Ma et al., 2020, P23-24).

2.1.3. Using science and technology to serve the country and its people

Scientists work with the motherland. They take it as their duty to make the country rich and strong, revitalize the nation and bring happiness to the people, and always carry out their commitment and mission. For example, after returning to China, Qian Xuesen devoted himself to the cause of national defense science and technology, devoting all his efforts to overcoming technical difficulties, training scientific and technological talents, and establishing the aviation industry system. When he led China's space industry to overcome many difficulties and made brilliant achievements, all kinds of honors were pouring in, he said: "As a Chinese scientist, the purpose of my life is to serve the people. The highest prize will be if at last the people are satisfied with the work I have done in my life." He uses nearly a century of life course to write a magnificent poem of science to serve the country. (Gao, 2019) Looking back on his hundred years of life, Cheng Kaijia said: "The greatest happiness in my life is that everything I have done is closely linked with the motherland." (Guo, 2019) Shi Changxu told young scientists, "As a Chinese, you should make a contribution to China. This is the first principle of life." "Our generation grew up in an old society where they were bullied by foreign powers. After studying in the United States, they overcame all obstacles and returned to China. They worked for decades with no regrets. All these choices were made because of the dream of a powerful country." It was feeling and aspiration of making the motherland strong that allowed Shi Changxu to overcome numerous difficulties and developed China's first generation of casting multi-hollow blades, making China the second country in the world that could develop such blades. (Liang & Xu, 2019) Yao Tongbin, a well-known scientist who has made achievements abroad, returned to China with passion to participate in the construction of New China. He said: "I came back to China not for fame or wealth, but to contribute what I have learned to national construction. With all of you, I intend to make a contribution to the Chinese rocket." He led the 703 Institute and established a network of missile materials, technology and testing after making great efforts to solve key problems, providing technical reserves for the missile flight. (Peng, et al., 2004) Guo Yonghuai has devoted himself to the development of nuclear weapons in the past eight years, from atomic bomb to hydrogen bomb device and then to nuclear missile and missile nuclear weapons. However, what he often says is: "As an ordinary science and technology worker in New China, especially as a member of the Communist Party, I just hope that my motherland will become stronger one day earlier and never be bullied again." (Li, 2017) After returning to China, Wu Ziliang had been devoted to the development of key practical materials urgently needed for national economic construction and national defense construction. He initiated China's low-alloy steel materials, made uranium isotope separation membrane, completed one after another scientific research tasks urgently needed by the country, and made outstanding contributions to the successful detonation of the atomic bombs. One of his sayings is widely circulated among researchers: "the people who like us, engaging in national defense, should have the determination to go in vertically and come out horizontally and devoting our whole lives to the cause of national defense!" (Ma et al., 2020, P109)

Huang Danian, the first expert of the "Thousand Talents Plan" introduced to Northeast China and a model for contemporary scientists, said when he returned to China: "High tech people are more valuable when they come back at a fruitful time. This is a time when the country needs us, and our group should come back with experience, skills, ideas and pursuits." "My country is the highest in my heart, I have no enemies, no friends, I only have the national interest. It is my dream to make the country strong." In the seven years after returning to China, he led his scientific research team to break through the blockade of foreign high-precision detection equipment and technology, making contributions to pushing China into the "deep Earth era", and filling many technical gaps for China's "exploration of the Earth shallow sea". In general, he blends his career with his patriotism for his country (Xu, 2017).

2.1.4. Having international vision and mind

The patriotic spirit of outstanding scientists inevitably contains the time and international vision. They need to recognize the realistic needs of national development, integrate achievements in line with national interests, break through the international technological blockade, and build an innovative force and a major power that can go to the top of the world. Zheng Mingguang, a leader in nuclear power technology in China, said: "Scientific and technological innovation work should actively align with the national strategy and meet the development requirements of the world, from the glory of the country, standing alone to the glory of the country, ahundred-flower blooming', and make greater contributions to the development of nuclear power in China and beyond." (Ma et al., 2020, P258) Huang Xuhua, the "Father of nuclear submarines", went into hiding and worked hard to break through the old road of the United States by referring to the "George Washington" of the United States, and held up the "backbone" of Chinese manufacturing.

Young scientists of Xi'an jiaotong university professor Ye Kai as main members participated in the International One Thousand - Genome Project, the international important scientific projects, such as tumor genome map plan in 2016, he led the team to cooperate with foreign scientific research institutions, found that "dark matter" of the genome, make people understanding of the human genome variation a big step forward. In 2016, a team led by him, in collaboration with foreign scientific institutions, discovered the "dark matter" in the genome, making a big step forward in understanding the variation of the human genome. Today's China needs such scientists with strong patriotism and international vision.

Modern great scientific projects need scientists to have a broad mind. After the completion of the main scientific experiment mission of the "Micius" quantum satellite independently developed by Pan's research team, the team has carried out cooperation with Austria, Russia, Sweden, Italy, Singapore, Canada, South Africa, India and many other countries to jointly promote global quantum communication. ITER is the largest and most far-reaching international university project in the world, as well as the largest fully superconducting Tokamak device in the world so far. It integrates the main scientific and technical achievements of controlled magnetic confinement nuclear fusion in the world today, and is a key step toward the practical development of controlled nuclear fusion research. It is jointly cooperated by more than 30 countries from seven parties, China, European Union, Russia, United States, Japan, South Korea and India. By deeply participating in the ITER program, the innovation team of China Superconducting Tokamak has solved several technical difficulties in the field of fusion engineering, and has broken through and mastered a series of core technologies necessary for the future construction of fusion reactors (Ma et al., 2020, P143).

According to statistics from the China Association for Science and Technology in 2015, among 158 international and scientific organizations and 1,566 major second-level organizations, Chinese scientists participated in the leadership of 2.26 percent of the global total, with 0.4 percent serving as chairmen of first-level scientific organizations and 1.1 percent serving as chairmen of second-level organizations (Liu & Feng, 2017). "Overseas study" has become a common feature of high-level university education in the world. Among the first-class universities in Europe and the United States, more than one third of the students study and exchange abroad during their undergraduate period. In June 2002, the European Union launched the Erasmus Mundus programme, which aimed to promote joint cross-training at the master's level between different universities across Europe. In 2003, the British government said it would try to help all university students have the opportunity to study abroad for a year. Ecole Polytechnique, France's best university, requires more than 50% of its students to spend six months abroad. In 2004, Harvard university proposed that every American student should go abroad to learn from their experiences. (Mi, 2016) It can be said that the cultivation of international talents is an inevitable trend for scientists to grow into talents. The influence of economic globalization on patriotism is twofold. In a certain sense, the trend of the in-depth development of economic globalization does weaken the sovereignty of nation states to a certain extent, and has a weakening influence on people's patriotic thoughts and feelings formed over 800 years.

However, economic globalization has made the economic interests of each country more prominent, and interest friction more common, which has strengthened people's patriotic feelings. In addition, economic globalization expands the space of competition between countries, intensifies the intensity of competition, and also provides a source of motivation for patriotism. Moreover, globalization has narrowed the distance between countries, to some extent stimulating their concerns about security and even anxiety, and to some extent strengthening their patriotism. (Cai, 2019) This is even more evident in the patriotic spirit of scientists.

3. Conclusion

Through the above analysis, it is not difficult to see that adhering to the scientist spirit has a strong theoretical and practical significance. On the one hand, for the current western values, this study can strengthen our patriotic thoughts and clarify the ideological fog. Secondly, under the guidance of China's policy of becoming a powerful country in science and technology, carrying forward the patriotic spirit of scientists in the contemporary sense is of special significance for the current prosperity and rejuvenation of the country. Thirdly, the patriotic spirit of scientists is not only the embodiment of the noble realm of the spiritual level, but also needs to be reflected in the dribs and drabs of everyone's life. Therefore, starting from the heart is a powerful national revitalization, ideological practice personal choice to obey the country needs, main gripper with science and technology as a service to the nation and people, at the same time of strengthening connotation, as a scientist should have international vision and open mind more, actively absorb and draw lessons from the outstanding achievement, is to better promote scientists important connotation of patriotism.

Compliance with ethical standards

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