

SCIENCE AND POLITICS IN MAOIST CHINA: QIAN XUESEN AND HIS INSTITUTE OF MECHANICS

Since the work of Thomas Kuhn, some historians of science have argued that scientists, viewed as neutral collectors of empirical facts, are largely insulated from socio-political influences and engage in theoretical disputes only when compelled by decisive experimental evidence. Scientific activity and the formation of paradigms seemed to take place only within the scientific community. In fact, as Bocking has argued, scientists are involved in a complex game of authority: scientists lend their authority as the gatekeepers of objective truth in nature to institutions; in return, universities, governments and industry provide material support for scientific work and rhetorically support their claims to truth. These factors from universities, government and industry are in fact a form of intervention from outside the scientist community. What are the specific manifestations of these external interventions and to what extent they affect current and future scientific work are questions worth exploring.

China is a case in point: in 1956, the Chinese Communist Party (CCP) decided to develop missiles and nuclear weapons in the technologically backward country in order to defend itself against external threats. The developers of these weapons, the scientists, became the most valued elite group by the CCP during this period. Since these missile scientists mostly came from mechanics, this field established itself as the most valued branch of physics. The reason for this is that while nuclear physicists and chemists also played an important role in the development of nuclear weapons, after China mastered nuclear technology in the 1950s with the help of the Soviet Union, building missiles with sufficient range and accuracy to carry nuclear warheads became paramount, and achieving this relied heavily on mechanics. Until the 1980s, mechanics scientists were the elite group that interacted most closely with the CCP. This group was represented by Qian Xuesen (1911 – 2009). As an expert in aerodynamics and leader of China's launch vehicle and intercontinental missile development programme, Qian headed his own institute, the Institute of Mechanics of the Chinese Academy of Sciences, whose scientists are the subject of this study. On 27 October 1966, China successfully tested its first missile with a nuclear warhead. But the cost was that China abandoned almost all basic scientific research and a large number of economic sectors at the same time. Is the production and flow of missile knowledge in China following a different path from that of other countries?

Three notable features can be observed in the development of science in China. First, politics and science became closely linked, with policy providing guidance for scientific work. Second, Western-educated scientists, such as Qian Xuesen, aligned their research with the strategic goals of the Party, contributing significantly to national scientific development. Third, mechanics, particularly explosion mechanics, advanced rapidly due to its role in missile and aerospace research. While Chinese science diversified after 1980, the experiences and academic foundations of the Mao era continue to influence research institutions and scholarly networks.

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