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ROCKETS FOR REGIMES: BALLISTIC MISSILE DEVELOPMENT IN NAZI GERMANY AND
MAOIST CHINA**Abstract**

This paper examines advanced technological development in anti-democratic states, with specific focus on ballistic missiles in Nazi Germany and Maoist China. It examines the material, cultural, and political conditions of rocket research and development, and argues that these conditions make possible extraordinary technological leaps while reinforcing loyalty to the regimes that made those leaps possible. A complex combination of professional ambition, internal cultural dynamics, military pressure, and political coercion coalesced in both programs. These dynamics had a significant impact on technological development and political perception.

Despite obvious differences, talented personnel in Peenemünde under Wernher von Braun and the Ministry of National Defense's Fifth Research Academy under Qian Xuesen worked in prioritized, privileged communities that drove innovation in service of the state. In both cases, these communities were able to create an environment in which personal success became intertwined with regime success. The common factors powering their achievements underscore how authoritarian regimes can create conditions for military megaprojects to succeed, particularly regarding super-secret weapons systems like ballistic missiles that are amenable to the enclosed "scientific city" model. They also reveal that communities of scientific and technological innovation can also drive cultures of political consent in authoritarian or totalitarian regimes, reinforcing support for the government in sometimes surprising ways.

This paper moves beyond the external functions of state financing and resource support to examine how individuals within the programs endowed their institutions with personal importance. While Hitler's Germany and Mao's China were in some ways very different places, personal identification with institutional goals nevertheless translated into political loyalty in both nations. Deep comparative examination of these two well-documented cases, separated by time and place, offers broader insights, including regarding the relative strengths and weaknesses of parallel Soviet efforts; as well as the prospects for follow-on efforts by today's smaller autocracies, such as Iran and North Korea, which seek to emulate the earlier successes of Berlin and Beijing in maximizing missile might for both regime survival and national defense.