

Introduction: The Gunpowder Age and Global History

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When Chinese alchemists invented the “fire drug” in the 800s AD, they unleashed one of the most transformative technologies in world history. Early gunpowder was not the explosive that it later became. It took centuries of development before it became capable of propelling projectiles. The Chinese used the early gunpowder mixtures for weapons, of course, but they were conflagratives and fire spewers, used for burning structures and people. Proper guns emerged in the 1200s, and by the mid-1300s the new weapons had begun transforming warfare, used in huge numbers in the fierce battles that led, eventually, to the triumph of the Ming Dynasty, which has been rightly referred to as the world’s first gunpowder empire.¹

Guns and gunpowder quickly spread beyond China, and this issue of *Emory Endeavors in History* is devoted to exploring their effects – and other issues of military modernization and innovation – in world history.

China’s closest neighbors found themselves forced to adapt to gun warfare quickly, and one of the pioneers of early gunpowder history, historian Sun Laichen of California State University, Fullerton, has famously described this process for Vietnam and other parts of Southeast Asia.² Yet equally important, but much less well understood, is the adoption of guns by China’s northeastern neighbors, Korea and Japan. Although Japan is not usually considered an early gun adopter (it is known much more for its later adoption of Portuguese-style arquebuses in the

¹ Sun Laichen, “Ming-Southeast Asian Overland Interactions, 1368-1644,” Ph.D.

² Sun Laichen, “Chinese Gunpowder Technology and Dai Viet, ca 1390-1497,” In Nhung Tuyet Tran and Anthony Reid, Eds., *Viet Nam: Borderless Histories* (Madison, USA: University of Wisconsin Press, 2006), 72-120; Sun Laichen, “Military Technology Transfers from Ming China and the Emergence of Northern Mainland Southeast Asia (c. 1390-1527),” *Journal of Southeast Asian Studies* 34(3) [2003]: 495-517.

1550s), in fact evidence suggests that Japanese at least were using guns by the early 1400s.³ Koreans, too, are not generally considered early adopters of the gun, but as Peter Kim's article in this volume makes clear, Korean interest in firearms was quite significant in the 1300s and early 1400s, precisely the period in which they were transforming warfare in China. Kim shows how the adoption of guns in Korea was stimulated by the challenge of Japanese piracy and how guns and other gunpowder weapons helped the Koreans to defeat the pirates.

In Europe, the emergence of guns is said to have led to massive changes in state and society. The so-called "gunpowder revolution" supposedly destroyed feudalism and brought about the emergence of the centralized state. Historians have wondered to what extent similar processes occurred elsewhere, and June Park's article in this volume explores this question by comparing the European case to that of Korea. The changes wrought by gunpowder were different in Korea, she argues, because the relationship between elites and the king was different. Whereas European states had rudimentary bureaucracies, Korea had a long standing professional bureaucracy, a centralized system similar to that of its huge and powerful neighbor, China. Yet the Korean bureaucracy was monopolized by its aristocracy. Whereas European state builders built political structures that in effect diminished the influence of landed aristocrats, in Korea the aristocrats were a priori part of the state structures. The king could not overcome them in the same way, despite the fact that he had cannons and they generally did not.

In China, too, gunpowder did not wreak such great changes as it is said to have wrought in late medieval Europe. This is partly, perhaps, due to the fact that China had had gunpowder weapons long before anyone else, but more importantly it is because China was already a bureaucratized, centralized state. When the Ming became the world's first gunpowder empire, its officials could use administrative structures that had developed over centuries of imperial rule. Guns transformed armies and warfare, but they didn't transform the state itself.

³ Sang-woon Jeon, *Science and Technology in Korea: Traditional Instruments and Techniques* (Cambridge, USA: The MIT Press, 1974), 192-193.

Yet one great question is why guns were not able to help the Chinese overcome all of their enemies. Although they were enormously useful in land warfare against Vietnam and in mainland Southeast Asia (as in Yunnan), they appear not to have changed the power balance between the Chinese and their nomadic enemies, particularly the Mongols. Historian Kenneth Chase has suggested that the main reason is that military technology – and particularly guns – were less important in nomadic areas than was logistics, and non-nomadic armies couldn't penetrate far into nomadic space because they needed to be supplied, whereas nomads, who often had several horses per fighter, could live off the land.⁴

Contributor Ben Sinvany in some senses builds on Kenneth Chase's discussion by analyzing early Ming confrontations with the Mongols and asking why it was that the Ming switched from an early focus on offense to a later focus on defense. The building of the Great Wall, for example, is an expression of this Ming focus on defense as opposed to offense. The Ming, Sinvany suggests, lost the opportunity to destroy Mongol power and control the Ordos region, which gave the Mongols a geographic base from which to continue to threaten the Ming. But was the Ming failure a matter of will or a matter of capacity? Certainly, the early Ming emperors Hongwu (r. 1368-1398) and Yongle (r. 1402-1424) devoted considerable effort and treasure to fighting the Mongols. To dominate the warrior nomads was, as scholars have noted, an incredibly difficult logistical challenge.⁵ The later Qing Dynasty (1644-1911) managed to finally achieve it, but, arguably, the context had changed, and the Mongols were by then also facing considerable pressure from the Russians as well. Could the Ming have effectively destroyed the Mongol power base and controlled the Ordos?

Ultimately, it was logistics that would enable the Qing victory, and it is salutary to remember that, because it helps us keep in mind that military technology is not by any means the only factor in determining the success of an

⁴ Kenneth Chase, *Firearms: A Global History to 1700* (Cambridge, UK: Cambridge University Press, 2008).

⁵ Chase, *Firearms*; Peter Purdue, *China Marches West: The Qing Conquest of Central Eurasia* (Cambridge: Belknap Press, 2005).

armed force. But what is intriguing is that in the age of European imperialism, tactics and technologies were much more fluid and ambiguous than one might imagine.

For example, when the British were trying to consolidate their hold over India, they met with great trouble in the Mysore Kingdom, in southern India. Mysore was a powerful state that thwarted the British for generations, and they did so in part thanks to their powerful technology. Contributor Arish Jamil explores one of the most intriguing technologies: Mysorean rockets. Mysorean rockets were the best in the world, and indeed they inspired the British themselves to build their own rockets, the famous Congreve Rocket of the late 1700s. As Jamil reminds us, the phrase “rocket’s red glare” in the national anthem of the USA comes from the flash of Congreve Rockets in the war of 1812, and thus has roots in the rockets of Mysore.

The British also had their hands full in North America, and two articles in this volume treat North American cases. Sam Bleiweis’s article treats the collapse of the Iroquois Confederacy during the American Revolutionary War, 1775-1783, showing us that geopolitics and diplomacy are key variables in understanding the war. Nicole Goetz’s article reminds us that tactics – fighting styles – were also of vital importance. In order to make 18th-century muskets effective on the battlefield, one had to drill soldiers to use them in concert, to take turns firing and loading, because loading took a long time. And so in Europe, armies were taught to march and move in formation, clockwork displays of brightly clad men. Yet when these tactics were brought to North America, they didn’t work as well. Native Americans and their European allies often fought in a much more “savage” way, disobeying the so-called civilized practices. This guerilla warfare seemed unfair to those who were raised on drilling-field tactics, but it was enormously effective. Goetz shows how some British commanders eventually acquiesced to adopting some guerilla tactics, forming a very effective hybrid style of “irregular warfare,” one that is still celebrated today the basis of Army Rangers’ training in the USA.

One of the great questions in global military history is why Asian societies eventually fell behind the West when it came to gunpowder technology. Kyle Johnson's article addresses this question by focusing on the Ottomans. Most scholars have long argued that in the 1400s and 1500s Ottoman artillery was less advanced than that of western Europeans, who had by the middle of the 1400s transcended their earlier reliance on huge bombards in favor of smaller, more mobile artillery, which, used in combination, could achieve the same devastating power as the older large guns. The Ottomans, it was believed, conservatively stuck with the older guns. Johnson examines two Ottoman-European sieges to determine to what extent this is true. The first, the famous Siege of Constantinople in 1453 seems to support the traditional view: the Ottomans did indeed deploy large guns in preference to smaller, more modern ones. There is evidence, though, of adaptation and adoption during that siege, and by the Siege of Rhodes in 1522, the Ottomans aimed smaller and more modern guns at the European walls. Indeed, although the Ottomans did bring to bear some huge guns, there was no significant difference between the rest of their artillery and that of the defenders.

What's intriguing is that this corroborates evidence from East Asia, the birthplace of guns. By around 1500, European guns were markedly superior to those of China and its neighbors, but East Asians rapidly adopted and adapted European designs when they learned about them in the course of the 1500s. My own research has led me to believe that the 1500s and 1600s were thus an age of military parity when it comes to European and East Asian developments, a hypothesis that is supported not just by evidence of rapid adoption and innovation in China, Japan, and Korea, but also by the fact that when East Asian infantries met European forces in battle in the mid and late 1600s, they evinced no significant technological or technical disadvantages. Indeed, if anything, it was the Europeans who were disadvantaged, although in part this was because they were operating so

far from their metropolis.⁶ Still, Johnson's article suggests, along with the work of other revisionists, that the age of parity may not have simply applied to East Asia.

Yet a military divergence did indeed open up between East Asian and western European societies, signaled most dramatically in the Opium War of 1839-42, when the Great Qing Dynasty was easily defeated by the advanced guns and ships of the British and forced to sign the first of a series of humiliating "unequal treaties." A decade after the end of that war, a show of American military power persuaded the Japanese to acquiesce to unequal treaties as well. So how did these two states – each of which had once been a military superpower – find themselves so far behind? In both cases, one can argue that the answer may have more to do with an absence of warfare than with any cultural or institutional factors. Although the sixteenth and seventeenth centuries were enormously warlike in East Asia, by the mid-1600s, Japan, and by the mid 1700s, China, were relatively quiescent when it came to warfare. The Qing, by defeating the Mongols and extending their dominance far into central Asia, removed all significant challenges to their rule. The period from 1760 until the 1830s was, when measured by the number of wars per decade, the most peaceful in two millennia of Chinese history. Japan, too, saw unprecedented peace during the period from the 1600s through the 1700s.

Indeed, Japan has long been considered to have done something unique in the history of the Gunpowder Age: to give up the gun. The phrase "giving up the gun" is the title of a famous book by Noel Perrin.⁷ The book, first published in *xyz* (and based on a *New Yorker* article of 1965), has been criticized by many academic authors, but Alex Astroth, in his article in this volume, defends Perrin's thesis. By carefully reviewing the historiography, Astroth suggests that Perrin was right to

⁶ On the sea and in sieges, Europeans may have had a slight advantage. See Tonio Andrade, "An Accelerating Divergence? The Revisionist Model of World History and the Question of Eurasian Military Parity: Data from East Asia," *Canadian Journal of Sociology*, 36(2)[2011]: 185-208.

⁷ Noel Perrin, *Giving up the Gun: Japan's Reversion to the Sword, 1543-1879* (Boston: Nonpareil Books, 1979).

argue that the government of Japan willingly chose to halt firearm manufacturing and innovation.

When, however, did the Great Military Divergence between western Europe and developed parts of Asia open up? Certainly, it seems that even in the age of high imperialism, of the 1800s and beyond, the extent of European dominance has been exaggerated. Take, for example, Napoleon's victories in Egypt. George Granberry, in his contribution to this volume, examines battles between Napoleon and the Ottomans in the late 18th century. He contrasts one of Napoleon's victories on land – achieved despite his land troops' exhaustion – with Napoleon's failure to achieve a similar victory at the same time at sea, in the Battle of Shubra Khit (1798). The Ottomans had been reforming their navy, and the Ottoman flotilla proved a match for Napoleon's. Indeed, as Granberry shows, the two naval forces were remarkably evenly matched. This forces us to reexamine not only notions of Ottoman Decline, but also the standard narratives of European exceptionalism, which suggest that the military divergence was deeply-rooted and long-standing.

A far more famous Napoleonic setback occurred at Waterloo in 1815, a defeat that ended Napoleon's dominance in Europe. Thousands upon thousands of pages have been written about this battle, which was, as the British commander the Duke of Wellington famously noted, "the nearest-run thing you ever saw in your life." In his contribution to this volume, Eric Huh offers an analysis of this defeat that takes full account of one of the most important variables in warfare: chance. Sometimes, as they say, "shit happens." We like to find meaning in hindsight, for it helps us feel that the universe makes sense. But in fact, Napoleon's battle might have gone entirely differently.

The gunpowder age began in East Asia, so it is a mystery of history that China lost its great lead over the west, and it is curious that it seems to have taken China so long to scramble back to parity in the course of the nineteenth century. Kim Black, in her article in this volume, examines one of the traditional villains of China's reform period: the empress dowager Cixi (in power from 1861-1908). She has long been held to have been one of the main reasons why China's efforts at

technological and political reform failed in the late nineteenth century, but Black offers a revisionist account, suggesting that in fact the empress was more favorable to reform than standard accounts suggest, and that the reformers were, for their part, destabilizing and unstrategic in their actions. Black's account corroborates to some extent new perspectives on the empress dowager that are emerging in the literature. The ever fascinating dowager is undergoing a historical rehabilitation.

Moreover, we mustn't be too quick to condemn Chinese efforts at reform, which in many ways seemed to be proceeding effectively in the last part of the nineteenth century. China's massive industrial arsenals and shipyards were producing effective weapons and battleships, and most observers felt that China's armaments were superior to those of Japan. What a surprise, then, that the Chinese lost so badly to Japan in the Sino-Japanese War of 1894-5. Cathryn Morette's fascinating article in this volume examines Japanese naval reforms in the years leading up to the war, arguing persuasively that Japan achieved success by eschewing the building of the huge armored vessels that seemed destined to rule the seas (the sorts of vessels that China was investing in), in favor of smaller vessels. The secret to Japan's naval success was its development of innovative naval tactics, which allowed Japan to deploy smaller vessels in concert, concentrating their firepower. Morette traces the development of Japanese reform, showing how Japanese reforms resulted in the surprise victory of the Japanese in 1895.

The gunpowder age ended in the late nineteenth century, with the development of smokeless powder. Thenceforth, war became ever more technologically-determined, and ever more destructive. There are still many questions to resolve about gunpowder and its role in global history, but this volume will, we hope, stimulate further research. We welcome communications from readers.