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### The impact of pikes and guns in Sengoku-Period Japan

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The impact of pikes and guns in Sengoku-Period Japan

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### **Abstract**

European-style matchlock guns changed the nature of war in Sengoku-period Japan. How much change was brought by the introduction of guns remains a question today. The traditional story is that when Portuguese merchants got shipwrecked on Japan, the Japanese people took their guns and reverse-engineered them. Within a hundred years, European-style matchlock guns completely changed the nature of warfare. For example, historians traditionally thought that in the Battle of Nagashino, Oda Nobunaga used volley fire techniques to beat his Takeda rivals. However, Thomas Conlan argues that the introduction of guns was not impactful on the battlefield of Japan. He claims that the Battle of Nagashino was fought without volley fire and that even without guns, the Oda clan would have won the battle. He argues that the introduction of the pike in Japanese warfare, combined with better organization techniques, allowed for more men to be fielded. Thomas Conlan further argues that the pike and organization techniques were the primary factors in the change in Japanese warfare.

This argument is compelling, but, unfortunately, downplays the use of guns and sidelines them. I will argue that guns did, in fact, change the nature of the battlefield and had a tremendous impact on Japanese warfare. However, this change was not an isolated impact. It was an evolution of tactics and techniques rather than a revolution. The gun built upon the changes brought about by pikes and new organizational techniques, such as the idea of massed infantry. These techniques, when combined with pikes, shifted warfare away from mounted archers with samurai to ashigaru foot soldiers in massed infantry formations. We see this change around the time of the Onin war, which saw the shift away from horse archers to massed infantry. When matchlock guns started to appear in Japan, the idea of massed infantry was already a mainstay in war. Around the 1570's we see another evolution in combat when the use of guns came to play a far more important role in battles than ever before, and its impact started to become better understood. Before the 1570s, guns were used in battle often, but they often played a small or unimportant role in battles due to their impact not being fully utilized. When the impact of guns and the idea of how to properly use them became better understood, they started to play a far more important role on the battlefield. In the battle of Nagashino, guns played an important role, causing around 50 percent of all casualties. Even without volley fire, guns were still an essential factor in the victory of this battle. Guns did not come to Japan and change the nature of warfare by themselves. Guns impacted warfare with an evolution building upon already existing change because without that change, and guns most likely would have never played such an important role.

## **Introduction**

The military revolution theory states that beginning in the 1400s, Europe's development of more effective gunpowder weapons and superiority in military drill and discipline allowed European states to dominate the world. This theory has many flaws, one of which is that many world regions were undergoing similar changes in warfare at around the same time; this point has led to some scholars arguing that changes in European warfare from the 1400s to the 1600s were neither unique nor a guarantee of world dominance.

Japan, which is the focus of this essay, underwent its own military revolution, or series of revolutions, from the Onin war to the end of the Sengoku period. Scholars debate whether it was the gun or other technologies that had the most impact on Japanese warfare. One side argues that matchlock guns from Europe dramatically changed the nature of warfare immediately after they were introduced to Japan, with the changes being almost instantaneous. The other side argues that it was the pike and organizational and logistical techniques that revolutionized Japanese warfare decades before matchlock guns arrived and that guns were far less transformative. When looking solely at Japan, it can be easy to get lost in this argument, but when comparing it to other examples of military revolutions around the world, it can be seen that the use of matchlock guns built on other changes, without which matchlock guns would not have made a significant impact on Japanese warfare. Nonetheless, I will argue in this paper that matchlock guns did make possible a second wave of revolutionary change in Japanese warfare. In other words, there were two military revolutions in Sengoku-period Japan, about a century apart.

Matchlock guns would not have been very successful in making an impact before the Onin War because warfare before the 1460s was not conducive to the use of matchlock guns. This is a situation very similar to Europe before the military revolution happened. Looking at

Japan exclusively can make people believe that this was an exclusive event, much like how people once thought that the military revolution was exclusive to Europe. In fact, there was a global change in the way people fought wars and battles. By analyzing the Japanese military revolution from a global and comparative perspective, we can gain more insight into the changes that happened to Japan during this time, and hopefully, this essay can bring new insight into the debates about Japan's changes.

In this essay, I will try to show that the changes in warfare during the Sengoku Jidai have many parallels to changes that were going on in other parts of the world at the time. By understanding the similarities, we can develop an even better understanding of the changes that happened to Japan during this period. We will start by looking at the changes that happened to Japan during this period and looking at the arguments that historians have made about them. I will then compare them to different versions of the military revolution model in European history to gain a clearer image of what happened during this period.

### **The traditional argument vs the new argument**

The argument about the role of matchlock guns in Sengoku-period Japan has been going on for a long time, with the traditional theory, dating from the mid-twentieth century, represented by Delmer Brown, who argued:

As a direct result of the adoption of firearms, close combat was largely replaced by long-range fighting. A barrage of bullets from muskets was generally sufficiently effective to determine the outcome of a battle before the opposing forces came into direct contact. In case the enemy's advance was not checked, bows and arrows, and finally spears and swords, were used to supplement gunfire, but the new emphasis upon long-range fighting brought revolutionary developments in the organization of armies and in military tactics.<sup>1</sup>

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<sup>1</sup> Brown, "*The Impact of Firearms on Japanese Warfare*" 244

Brown's argument follows a type of technological determinism that blinds him to the role of human agency. He argues that guns must have changed warfare because of their nature as a superior weapon to the bow. Due to the increased range and armor-piercing power over bows, guns must have become the leading weapon in Sengoku-period Japan as soon as they were introduced, resulting in battles being decided by large rows of massed musketeers.

The newer argument spearheaded by people like Thomas Conlan suggests that matchlock guns played a minimal role in reforming the battlefield in Sengoku-period Japan. He, instead, argues that "[t]oo often historians have thought that guns caused the rise of these massed tactics, but in fact, they predominated well before the gun was widely used." Because massed tactics need large numbers of soldiers, daimyo needed more effective tactics to raise more soldiers. The method of raising armies before the Onin War was to call on one's vassals or retainers, who would then call on their own retainers, and much like Russian nesting dolls, there were numerous retainers one leader could call up, each with a relatively small number of fighting men. But during the Onin War, new centralized strategies for raising troops allowed for more men to be fielded at a time. Conlan argues that the pike (a kind of long infantry spear) gained more importance from this change because it could be used in massed infantry formations. Without men to use in large formations, the pike is just a long spear whose wielder cannot withstand a group of cavalry for long. Because of new techniques for organizing soldiers, it became easier to use massed infantry armed with pikes. When pikes are used in massed infantry formations, it becomes easier to deal with cavalry archers, who were the mainstay of Japanese warfare before this. Conlan argues that pikes were the leading change behind the development of massed infantry tactics:

By 1467 pikemen had become the dominant figure of the 15th-century army. Their significance highlights the greater cohesion of fighting units and improved military organization, as units were capable of training together and remaining together in the field. The establishment of what can be considered a standing army led to profound changes in patterns of warfare, favoring formations of men on foot wielding pikes over their mounted adversaries.<sup>2</sup>

According to Conlan, Japanese armies began to use matchlock guns on a larger scale, but they did not change the battlefield much because most of the changes that matchlock guns could have brought were already present because of pikes.

The new argument agrees with the traditional view that there was a military revolution in Japan, but credits the revolutionary change to pikes, not guns. Conlan, in making his argument, looks towards battle reports, which are after-action reports submitted by samurai to their lords to describe their contribution and sacrifices. Conlan bases his argument on these battle reports and argues that the rate of injuries from pikes was much higher than casualties from guns until around 1560, and bows still killed more than guns until the 1600's. But statistics alone cannot prove that guns had no significant impact on battles even if they were used in smaller numbers and not uniformly by all armies. There may have been various circumstances that led to guns not being used, but that doesn't mean that they weren't important.

### **The military revolution model and its comparisons to Japanese history**

The military revolution model in Europe suggests that because of European advancements in drill, tactics, and gunpowder technologies in the thirteenth to fourteenth centuries, Europe was able to conquer the world. However, while it is true that European states underwent changes in warfare during the thirteenth and fourteenth centuries, this was not limited

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<sup>2</sup> Conlan, "*Weapons & fighting techniques of the Samurai warrior, 1200-1877 AD*" 88

to Europe, and many Asian states underwent their own changes during this period. These states were sometimes even ahead of Europe; China, for example, developed the countermarch technique for use with crossbows in the fourth century BCE, far ahead of Europe.

In the 1990s, Clifford Rogers argued that there was not one but a series of military revolutions in late medieval and early modern Europe. The first military revolution, also known as the infantry revolution, produced more disciplined infantry units capable of standing their ground against heavy cavalry. These infantry consisted of dismounted men at arms or pikemen supported by archers or crossbowmen and eventually by arquebusiers, cavalry started to act as more of a support unit before the creation of the cavalry charge tactic. The traditional European knight or man at arms bears some similarity to the Japanese professional warrior, who was typically a mounted archer who fought in a skirmishing style supported by a small number of foot soldiers.<sup>3</sup> During the Onin War, Japanese armies shifted from cavalry to Ashigaru (“light foot”) pikemen in tight formations supported by archers. Japanese daimyo found that large, well-trained pikemen could hold their ground when attacked by mounted archers and could even counterattack and defeat cavalry.

After the infantry revolution in Europe, there was an artillery revolution that happened about one hundred years after the introduction of gunpowder weapons; the artillery revolution in turn stimulated a revolution in fortifications (which Rogers called an “Artillery Fortress revolution”<sup>4</sup>). In Japan, there were numerous reasons, mostly technological, why gunpowder artillery had less impact, but very similar to the artillery revolution in Europe was the firearms revolution which followed much the same timeframe and development cycle as Europe. One

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<sup>3</sup> Conlan, “*Weapons & fighting techniques of the Samurai warrior, 1200-1877 AD*” 64-66

<sup>4</sup> Rogers, “*The Military Revolutions of the Hundred Years War*” 75



could argue that pikemen and matchlock guns were part of the same infantry revolution in Japan, but I will argue in a later section that it is useful to see them as two distinct entities.

If we look at the military revolution argument in Europe, we can draw many parallels that help us better understand the military revolution in Japan. There were two military revolutions in Europe, the infantry revolution and the artillery revolution. The infantry revolution was when armies started to change from predominantly heavy cavalry into predominantly massed infantry (supported by cavalry). This is very similar to what happened to Japan, where foot soldiers with pikes started to overcome light cavalry (mounted archers), and over time, tactics changed to favor the new massed infantry formations. Japanese cavalry tactics developed into massed heavy cavalry charges (which were already the norm in medieval Europe) to overcome the advantage of massed infantry, and in turn infantry tactics evolved to feature more effective use of guns against cavalry.

### **Pikes and infantry**

Before the Onin War, soldiers were primarily mounted archers who fought each other in skirmishes accompanied by their retainers, who would follow them on foot and hold their weapons, as well as occasionally try to dismount enemy archers. The retainers would also try and fight off other retainers as well as collect heads. These methods were how people fought for centuries, from the Gempei War to the Onin war. Conlan states that “surviving records suggest that no tactical transformations arose prior to 1450.”<sup>5</sup> However, during the Onin War, people shifted away from mounted archers to massed infantry. During the Onin war, much of the capital of Japan was burned down so that horses would have more room to maneuver inside the city,

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<sup>5</sup> Conlan, “*Weapons & fighting techniques of the Samurai warrior, 1200-1877 AD*” 89

reflecting the persistence of old habits At the beginning of the Onin War, generals held onto the idea that mounted archers were the mainstay of fighting, eventually people started to realize that mounted archers just were not useful in this type of combat, primarily when other people used massed infantry. Conlan gives us an example from the Onin War:

Masanaga purportedly had a force of 2000 troops which attacked a significantly larger cavalry force of 6000-7000 troops. Masanaga was confident in the prowess for he boasted that I 'will defeat an army of even a million men' and his troops advanced in close formation behind shields. After closing in on the rokkaku horsemen on the ashy grounds masanagas pike surged towards the enemy, whose horses could not withstand such a unit of pikemen - 67 horsemen were killed before the rest fled.<sup>6</sup>

With pikemen crushing a force of cavalry so many times their number, people started to realize how effective massed infantry could be on the battlefield, and so it was increasingly adopted until it became the primary method of combat.

Soldiers need a large amount of discipline to withstand being shot at by arrows while maintaining order properly. In order to use massed infantry effectively, daimyo would need to train their troops well, and because these new troops mostly came from levied peasants, training these troops was more difficult than training professional soldiers, so daimyo came up with more effective ways to have troops in the field for longer, eventually leading to standing armies. The development of better logistics was needed in order for pikes to be fully effective on the battlefield. "Pikes had been in use for centuries before commanders were able to realize their full potential. Improved logistical and organizational abilities allowed for standing armies to be forged over the course of the 15th-century."<sup>7</sup> With the improvement of logistics and organizational techniques, standing armies allowed soldiers to undergo more effective training, which in turn allowed them to be even more effective on the battlefield. These facts made

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<sup>6</sup> Conlan, "*Weapons & fighting techniques of the Samurai warrior, 1200-1877 AD*" 98-99

<sup>7</sup> Conlan, "*Weapons & fighting techniques of the Samurai warrior, 1200-1877 AD*" 86

pikemen the staple of Japanese warfare for the Sengoku period. Many of the battles were fought with pikemen as the leading force with the rest of the troops playing a supporting role to the pikemen; for example, in 1575 a Hojo clan general “led a total force of 5514 men. Of those, 3609 were pikemen, 650 were classified as porters, 321 had guns, 368 had banners, and 566 were mounted on horseback.”<sup>8</sup> The army composition of forces was primarily led by pikemen.

Pikemen were the staple soldier of the Sengoku period and had one of the most substantial impacts on warfare in the Sengoku period, if not the most. When pikemen became the most common type of soldier in the war and tactics started to be built around pikemen, other units started to play a more supporting role in combat. Cavalry, instead of being the primary force, turned into a supporting role of protecting the flanks of the pikemen as well as doing reconnaissance in force. Archers deployed on the ground started to become more prevalent around this time and tended to engage the enemy at long range first, killing some of the enemy forces before they engaged with the pikemen and trying to cause disorder among the enemy.<sup>9</sup> The archers would act in support of the pikemen, acting to make it easier for the pikemen to defeat the opposing army:

When the two forces had come within five or six ken of each other, expert archers on both sides let loose a hail of arrows. Arakawa Yojūrō was hit full in the head, just beneath the front rim of his helmet, and fell off his horse. Enemy soldiers jumped upon his body to drag it to their side, some pulling it by the shins and others by the gold-encrusted hilt of Yojūrō’s sword. Ours held on to his head and torso. The sword that he had carried into this battle, people later said, was one ken [1.8 meters] long and five to six sun [fifteen to eighteen centimeters] wide. Our side first managed to get hold of the sheath and later retrieved Yojūrō’s sword, his body, and his head as well. The battle raged from the Hour of the Serpent [around 10 a.m.] to the Hour of the Horse [around noon]. The men would strike blows at each other, draw back, and then return to strike blows at each other again, unwilling to fall behind their comrades or be outdone by them.<sup>10</sup>

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<sup>8</sup> Conlan, “*Weapons & fighting techniques of the Samurai warrior, 1200-1877 AD*” 137

<sup>9</sup> Turnbull, “*Samurai Versus Ashigaru*” 20

<sup>10</sup> Ōta, Gyūichi, Jeroen Pieter Lamers, and J. S. A. Elisonas. *The Chronicle of Lord Nobunaga*. Brill’s Japanese Studies Library. Leiden: Brill, 2011 65

This was the new style of battle that came with the development of massed infantry, where the archers would do their work before the pikemen got into the thick of the fighting.

With these new developments, the style of battle during and after the Onin War dramatically shifted away from the tradition of mounted horse archers who would shoot from horseback. Most battles began with a skirmish battle where the ranged units would whittle away enemy soldiers and try to cause chaos among them, followed by infantry and cavalry then taking the main stage. Cavalry would try to outflank the enemy or perform a cavalry charge into the ranks of the enemy combatants, trying to cause as much fear and chaos as possible.

### **Firearms and cannon in Sengoku-Period Japan**

The development of new cavalry techniques was a consequence of the changing ways wars were fought in the Sengoku period. The new method of using cavalry was the cavalry charge. With the development of massed tactics, cavalry's role was temporarily redefined into a supporting role, but with cavalry charges, the cavalry started to become one of the most critical roles yet again. The development and improvement of gun techniques was a response to the development of cavalry charges, which could overturn the newfound staple of warfare, the pikemen.

A consequence of the cavalry charge was that pikes got longer in order to protect themselves from cavalry with Oda Nobunaga's reportedly being around 20 feet: "If your spear is short, you'll be at a disadvantage no matter what." So he had spears made with a shaft of three to three and a half ken [5.4 to 6.3 meters]."<sup>11</sup> These longer pikes also had another benefit, they were able to protect the people who used firearms easier. But they had a major drawback in that it was

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<sup>11</sup> Ōta, Gyūichi, Jeroen Pieter Lamers, and J. S. A. Elisonas. *The Chronicle of Lord Nobunaga*. Brill's Japanese Studies Library. Leiden: Brill, 2011 58

much harder for them to be used practically unless the soldier using them had a large amount of discipline. In the battle of Nagashino pikemen protected the Teppo-gumi (musket squads) from harm so that the Teppo-gumi could fire more shots into the enemy “The musketeers were protected as they reloaded, by the ashigaru spearmen.”<sup>12</sup> Pikemen protecting the Teppo-gumi was a very effective strategy. In the battle of Nagashino, Oda Nobunaga clashed with Katsuyori (the new Takeda clan head after Shingen). In this battle Nobunaga set up a defensive position and entrenched himself across a river from Katsuyori. Katsuyori tried to attack Nobunaga with a cavalry charge; he was working on the intel that one of Oda Nobunaga's generals would defect, so he charged the enemy defensive positions to trigger that defection. He ended up repeating a charge over and over again and his troops were defeated each time. Guns ended up causing mass casualties on some of the waves, even killing 50 percent of the third wave: “More than half of Obata’s warriors were felled by the gunfire....”<sup>13</sup> As the battlefield started to shift to Teppo-gumi, becoming the focus point of the battle where other units supported them, this change was the firearms revolution.

With firearms taking the primary role in battles, tactics changed, and figuring out and countering enemy Teppo-gumi became a critical role as well as protecting your own Teppo-gumi. In the battle of Mikata-ga-Hara, figuring out where the enemy's firearms were became a critical job as a large amount of snow reduced the visibility dramatically. In this battle, we see an example of combined arms where all different types of units worked together to defeat their opponent. In the battle of Mikata-ga-Hara, the Takeda used conscripted soldiers to bait the enemy guns into firing

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<sup>12</sup> Turnbull, “*Samurai Versus Ashigaru*” 64

<sup>13</sup> Ōta, Gyūichi, Jeroen Pieter Lamers, and J. S. A. Elisonas. *The Chronicle of Lord Nobunaga*. Brill’s Japanese Studies Library. Leiden: Brill, 2011 225

on their positions so the Takeda could understand where the enemy firearms were located and fire their guns into the enemy Teppo-gumi. Using the confusion caused by the Teppo-gumi, the cavalry were able to charge into the enemy Teppo-gumi and defeat them:

The Tokugawa may have been somewhat surprised by the development, but they responded obligingly with gunfire from the ashigaru *teppo-gumi*, who fired blindly into the snow and gloom. Their actions may have achieved little more than cutting down the 'forlorn hope' stone-throwers, although this could be what Shingen had intended, because the firing disclosed the Tokugawa positions and their likely distance away. Shingen therefore ordered a response from his own musketeers. Takeda Shingen then took a great risk, because his musket barrage was followed by a mounted charge into the gloom by the Takeda vanguard horsemen to the beat of their war drums.<sup>14</sup>

The Takeda effectively used their troops to combat the enemy's Teppo-gumi, using different groups of soldiers. The Takeda took advantage of the weakness of matchlock guns, in that it took a while for them to reload, and used this time to launch their attack under very little threat of a barrage by their enemies. The Takeda were very effective at using different units well together, but the Tokugawa was not as effective at using their troops well together and did not protect their Teppo-gumi, leaving them vulnerable after exposing them to the enemy. Much like Katsuyori who didn't use his troops well together and tried to charge the enemy with little regard to what they had set up. The battle of Mikata-ga-Hara took place two years before the battle of Nagashino, in that time not that much changed from a technical standpoint. Gun technology could not have improved much within such a short time, which suggests it was tactics and not technology that made the difference.

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<sup>14</sup> Turnbull, "*Samurai Versus Ashigaru*" 50

The Ikko Ikki was a sect of Buddhism that participated in the Sengoku Jidai. They fought against Oda Nobunaga as well as various other lords. They were early supporters of musket technology and began to use them far earlier than some daimyo. They adopted musket technology before some daimyo because they needed to in order to fight effectively, as most of the Ikko Ikki soldiers were just untrained peasant bands. They lacked the training to use conventional weapons effectively, so they adopted firearms as muskets needed less training to be useful in battle than other conventional weapons. The Negoro-ji were another sect of militant Buddhism, but this group, unlike the Ikko Ikki, sided with Oda Nobunaga. They worked with Oda Nobunaga on many occasions, even fighting together against the Ikko Ikki.<sup>15</sup> Two months before the siege of Osaka castle (one of the castles that the Ikko Ikki controlled) Nobunaga had one of the first firearms squads created when he combined his firearms troops from various squads into one squad. He had 500 troops combined into one firearms squad with around 30 archers supporting them.<sup>16</sup> This may reflect the influence of both Nobunaga's Ikko Ikki enemies and his Negoro-ji allies.

Besides the Battle of Nagashino, Oda Nobunaga's success against non-daimyo opponents also reflects the fact that tactics and organization mattered more than the number of guns an army had. A year after the Battle of Nagashino, Oda Nobunaga launched an attack on the Ikko Ikki in which the Ikko Ikki had fifteen thousand troops, with a large number of them using guns, while Oda Nobunaga had only three thousand troops.<sup>17</sup> Nevertheless, with those troops, he

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<sup>15</sup> Ōta, Gyūichi, Jeroen Pieter Lamers, and J. S. A. Elisonas. *The Chronicle of Lord Nobunaga*. Brill's Japanese Studies Library. Leiden: Brill, 2011 150-152

<sup>16</sup> Ōta, Gyūichi, Jeroen Pieter Lamers, and J. S. A. Elisonas. *The Chronicle of Lord Nobunaga*. Brill's Japanese Studies Library. Leiden: Brill, 2011 146

<sup>17</sup> Ōta, Gyūichi, Jeroen Pieter Lamers, and J. S. A. Elisonas. *The Chronicle of Lord Nobunaga*. Brill's Japanese Studies Library. Leiden: Brill, 2011 251-252

managed to rout the Ikko Ikki forces and win the battle; even after the Battle of Nagashino, it was not so simple as having more guns meaning certain victory. The key was the effective application of the guns.

Castle technology also changed during the firearm revolution. Before the Sengoku period, castles were all built out of wood, and siege technology was extremely late in developing. For a long time, the tactic to take over a castle in Japan was to overwhelm the castle with numbers or starve them out without any innovation. It was not until the Onin War that someone came up with the catapult. During the Sengoku period, with the development of gunpowder weapons, castle technology advanced, and daimyo started to build castles from stones to better protect themselves from fire and guns and occasionally cannons, “The existence of powerful cannon led to marked changes in fortification techniques, as stone walls were relied upon and castles came to occupy large enough areas to prevent cannon from bombarding their inner walls. As early as the 1540’s weak sections of walls were fortified with larger stones.”<sup>18</sup>

Cannons were never able to take off in Japan during the Sengoku period for numerous reasons. It was too costly, Sengoku-period Japan lacked the metallurgy technology to reproduce European or Chinese cannons properly, and buying them costs a lot of money. There was not much of a need for cannons in Sengoku-period Japan either, because castles only really started to be built out of stone during this period; siege tactics did not advance much. Cannons were incredibly hard to transport through Japan's mountainous terrain, which made them less viable for sieges as well as use as field artillery. Cannons never had the need to develop in Japan although they were very popular in Europe as field artillery, but that required a large amount of

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<sup>18</sup> Conlan, “*Weapons & fighting techniques of the Samurai warrior, 1200-1877 AD*” 186



time before they could effectively be used in battle due to their large nature. In Japan, that innovation happened after Japan was already unified under the Tokugawa.

### **Volley firing and the battle of Nagashino**

In China, the idea of volley fire existed for centuries, being first developed when crossbows started to become a significant component of Chinese armies during the Warring States period (475 BC – 221 BC).<sup>19</sup> When European-style matchlock muskets came to China, they also began drilling their musketeers in volley fire by 1560.<sup>20</sup> In Japan, we do not know when people first started to come up with volley fire, but Oda Nobunaga seems to have come up with the idea rather early as an improvised method of suppressing enemy fire from a fort: “Nobunaga stated that he would take it upon himself to silence three enemy loopholes and kept them under constant fire by exchanging one loaded arquebus for another again and again.”<sup>21</sup> Oda Nobunaga may have had the idea of firing in volleys for a while, but training his troops to do it en masse is a different story. To effectively use volley fire, daimyo needed a well-drilled and trained army or the troops would not fire and reload in volleys, because some may fire off shots prematurely while others may take too long to reload.

The Koreans developed one of the most powerful musket armies of the seventeenth century. Shocked by the Japanese use of muskets and the effectiveness of volley fire in the Imjin War (the Japanese invasion of Korea in 1592-1598), the Koreans rapidly developed musket techniques to keep up with the Japanese invasion. The Koreans trained their soldiers in the drill techniques of China: “Korean musketeers were trained in [Ming general] Qi Jiguang’s volley

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<sup>19</sup> Andrade “*the gunpowder age*” 180

<sup>20</sup> Andrade “*the gunpowder age*” 172-181

<sup>21</sup> Ōta, Gyūichi, Jeroen Pieter Lamers, and J. S. A. Elisonas. *The Chronicle of Lord Nobunaga*. Brill’s Japanese Studies Library. Leiden: Brill, 2011 67

technique [using a] Korean drill manual of 1607, based closely on Qi Jiguang's *Ji xiao xinshu*...."<sup>22</sup> The Koreans developed one of the best musketeer troops in the world, thanks to their rapid development of techniques that they adopted from many sources, one of which was the Japanese forces that the Koreans encountered in the Imjin War and the other was Chinese drill manuals.<sup>23</sup>

The independent development of volley fire tactics partially disproves the European military revolution model. Since East Asia independently developed volley fire techniques before the Europeans, how could Europeans have used them to take over the world? This questions the idea of early modern European superiority in drill and tactics over the rest of the world. Historians should look towards the post-Industrial Revolution European technologies for real overwhelming military advantages, especially in relation to East Asia.

When and how did Sengoku-period Japanese armies begin using the volley fire techniques that the Koreans encountered during the Imjin War? Unfortunately, we are still not sure because of limitations in the Japanese sources. At the battle of Nagashino, the popular myth was that Oda Nobunaga used his 3000 firearms troops to fire in volleys, thus destroying his Takeda rivals. However, recently it has become more apparent that this is just a myth:

He and many others have argued that Nobunaga employed the technique in the famous Battle of Nagashino in 1575.<sup>18</sup> This is debatable. As two scholars of Japanese history have recently written, "the commonly accepted story that attributes the victory [at Nagashino] to three thousand arquebusiers who, arrayed in three ranks, alternated rank by rank in stepping forward to fire enfilades and rearward to reload their weapons, is a myth." This "myth," they say, originated in a chronicle written years after the battle that is riddled with inaccuracies. An earlier and more accurate chronicle (which these scholars have translated into English) makes no mention of volley fire. On the contrary, when it mentions guns, it usually says they are fired en masse.<sup>24</sup>

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<sup>22</sup> Andrade "the gunpowder age" 184

<sup>23</sup> Andrade, Cooper, kang "A Korean Military Revolution?: Parallel Military Innovations in East Asia and Europe" 63

<sup>24</sup> Andrade "the gunpowder age" 170

While it is known that the Japanese did use volley fire, there is no strong evidence that it was used at the Battle of Nagashino. Volley fire probably was used by the later years of the Sengoku Jidai, because during the Imjin War, it was one of the main techniques of the Japanese, as described by Chinese and Korean sources that speak of Japanese armies that “divide themselves into three groups and shoot alternately by moving forward and backward”<sup>25</sup> or “break into squads and shoot alternately against us.”<sup>26</sup> Historians know that it had a presence in Japan, but it is still debatable whether it was used in the battle of Nagashino.

### **Conclusion**

Japan had its own military revolutions during the Sengoku period, one of which was the infantry revolution created by the better logistical and organizational capabilities of the daimyo. These changes started during the Onin War, where the shift away from traditional combat merged with the new tactics that came from massed infantry, but it was not until later on in the war that the new style of war began to be understood as a more effective method of fighting. The shift away from mounted archers mainly acting on their own in combat, to disciplined infantry units acting in a group was a substantial enough change to be called revolutionary even if it built upon changes that were already wrought before it. However, it was not just pikemen alone that made the change. Other units adapted to this new formula of fighting as cavalry started to act more as support units using shorter spears, and archers were used for supporting the pikemen.

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<sup>25</sup> *Sōnjo sillok* 宣祖實錄 [Veritable record of King Sōnjo's reign], in *Chosŏn wangjo sillok* 朝鮮王朝實錄 [Veritable Records of the Chosŏn Dynasty] (Seoul: Kuksa p'yŏnch'an wiwŏnhoe, 1955–1958, juan 50, 1594/4/17 (Ūlch'uk). Quoted in Kang, Andrade, and Cooper, “A Korean Military Revolution?,” 65

<sup>26</sup> Qiu Xintian 邱心田 (Beijing: Zhong hua shu ju 中華書局, 2001). 31 Song Yingchang 宋應唱, *Jing lue fu guo yao bian* 經略復國要編: [Fourteen juan, futwo juan] (Taipei: Hua wen shu ju 華文書局, 1968), p. 506. Quoted in Kang, Andrade, and Cooper, “A Korean Military Revolution?,” 65

The firearms revolution, which began about a century after the infantry revolution, was spurred on by the need to counter new cavalry charge tactics that made infantry more vulnerable on the battlefield. To counter the new cavalry tactics, daimyo started to use matchlock guns in larger numbers and concentrations on the battlefield, as seen at Nagashino for example. When used effectively in conjunction with other weapons (e.g., pikes), matchlock guns can be critical to victory, but when not used correctly, they are very vulnerable to being overrun by cavalry, as seen at Mikata-ga-Hara. This essay sought to prove that there was a revolution in firearm technology and tactics during the Sengoku period, but it was not a singular event; rather, it was the culmination of progress made slowly over time. One of the problems with the primary sources that historians have for the Sengoku period is that they are often either not reliable or do not go into the details needed to understand what was happening in certain situations. The unreliable sources have led to the debate over what happened at the Battle of Nagashino and while historians cannot know for sure if volley fire tactics were used at the battle, we do know that the Japanese used volley fire tactics during the Imjin War and that the Chinese had used them with crossbows for centuries and were using them with guns by 1560.

When looking at Japan, it can be helpful to compare Japan to Europe because there are some similarities, which can help understand Sengoku Japan better. Pre-infantry revolution Europe is very similar to pre-Onin War Japan, Cavalry had the most important role, and infantry played support to the Cavalry; of course, in Japan, it was mounted archers compared to the knights using lances of medieval Europe. However, similarities exist, such as warfare being a very ritualized affair. Many of the transitions that happened during Europe's change to massed infantry are similar to Japan's change to mass infantry.

In regards to firearms tactics, Japan was ahead of Europe, as Japan had developed the volley fire technique before the Europeans, disproving the idea that East Asia is stagnant. The Orientalist stereotype of East Asia paints Japan as a backwards nation that needs European help in order to be just as enlightened as the Europeans considered themselves. When European matchlock technology was introduced to Japan, Japan took the technology and ran ahead of Europe. This goes against the Eurocentric military revolution model, which claims that what happened in early modern Europe was a uniquely European event. The infantry and firearms revolution in Japan goes against the idea of East Asia as a stagnant society somehow lesser to European states, and it also shows that the main drivers behind change in Japan were Japanese people and not Europeans.