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**The development of infantry rifles and basic
military tactic of the Austrian Empire and the
Astro-Hungarian monarchy between 1849-1878**

Thesis file of PhD evaluation

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Budapest, 2018.

National University of Public Service

Introduction

The events of the Hungarian Revolution of 1848-49 are rightfully the highlights of the Hungarian military history however the decades following this glorious time are not handled fairly by Hungarian historiography, yet the military related events right before the Compromise of 1867 had great influence not only on the fate of Hungary but of the whole Empire. The events of the mid-19th century are important for us from a series of different aspects. First, during the years of absolutism Hungarian soldiers died heroic death in Italy, Bohemia, Moravia, and after the Compromise they participated in the dualist monarchy's army too. The historiography still owes us the proper examination of the history of Hungarian officers and units with Hungarian soldiers that took part in the war. In the three decades between 1850 and 1880 the military art has shown improvements never seen before, the imperial-royal and after the Compromise the dualist military that consisted of multiple parts attempted to keep up with these improvements and that offers extraordinarily interesting research directions.

These are important decades because the infantry tactics used in the First World War cannot be understood without the thorough examination of this time period that connects the Napoleonic warfare and the tactics that are considered modern and come with enormous bloodshed in wartime. Military tactics that caused the death of millions of infantry riflemen are rooted in this period of time.

The military revolution of the 1860's and the second industrial revolution in the 1870's changed the basis of warfare, the military art, and the rules of tactics, that had a strong direct effect on the fate of the Hungarian Kingdom too. The revolutionary changes in warfare before and during the French revolutionary wars were fundamentally induced by agricultural and social dynamics, however in the middle of the 19th century the primary motives that forced the military changes were the industrialization and the improvements in military technology. The appearance and mass spread of the rifled breech loading guns rewrote the rulebook of infantry warfare forever, and at the same time it started the decline of cavalry an arm of service with a great past. The almost unlimited industrial capacities allowed significant increase in the size of armies, the expanding number of railways through Europe provided opportunities to mobilize, replenish, focus and get troops to the areas of operation as quickly and as effectively as never before. The Hapsburg Monarchy could not keep up with the pace of improvement, the defeats in 1859 at Solferino and in 1866 at Königgrätz shook the Central-European empire to its foundations.

The method to fight a war has changed too. The military theorists synthesizing the experiences of the Napoleonic Wars - Clausewitz, Jomini – could not foresee the radical

changes caused by the disproportionate growth of the infantry's firepower and therefore the growth in its protective capabilities. Closed battle formations vanished once and for all, while the frontline of soldiers fighting in open – according to contemporary terminology: spread – battle formation became so long that by the 1870's decisive victory could hardly be forced out by a single battle over a few square kilometers battlefield. The last old-style, great decisive battles of the European continent were fought in the 1850's and 1860's at Magenta, Solferino and Königgrätz.

Between 1850 and 1880 the infantry's firearms evolved in an unprecedented pace. While the flint-lock smooth bore military muskets ruled the battlefields for 150 years, the percussion smooth bore military muskets were only in use for 20-25 years and the percussion military rifles lasted only for 10-15 years. The first single shot breech loading rifles firing a self-contained brass cased cartridge had similarly ephemeral lives which only influenced the firearms history for 10-15 short years before the repeating rifles made them totally obsolete. The next step in the evolution of firearms is basically the appearance of the modern service rifle, which with smaller modifications are still in use by the armies. The Hapsburg Monarchy's situation was rendered even more difficult by the fact that it had to take every step of this evolution while fighting a bloody war. The campaigns of 1859 in Italy, 1864 in the Kingdom of Denmark, 1866 in Italy and Bohemia and then the 1878 campaign of Bosnia-Herzegovina were all important milestones in the development and evolution of the Hapsburg army.

Statement of the problem, research goals

In my work I shall attempt to review the evolution of firearms and infantry warfare from 1849, the era of the percussion military rifle to 1880, the end of the period of the single shot breech loading military rifles, focusing on the Monarchy's infantry. Due to the fact that the essential literature on evolution of the handheld firearms and tactics of these times is absent from the Hungarian war historiography, I mainly rely on contemporary archives, documents, regulations, studies and reflections to categorize and review the main questions of this era, and uncover the dynamics that motivated the Hapsburg Monarchy's military leadership to start the modernization. I would like to provide a firm standing ground for the historians researching the event history of this period of time with my work, so they can acquire a more unambiguous, more precise picture of the basis of infantry warfare, the firearms of the time and the capabilities of a single foot soldier.

The goal of my dissertation is to unfold the correlations between the evolution of the infantry's firearms and the evolution of tactics, mainly focusing on the imperial-royal, imperial

and royal common army and on the history of the Royal Hungarian Army. My goal is to show the organic evolution of infantry guns and tactics that are induced by improvements in military technology.

The Prussian-Austrian war in 1866 is the center of my dissertation because my hypothesis is that this war is a universal breaking point in the art of military science. I explore in what ways the events of this lost war forced essential reforms in the Monarchy.

Moreover my goal is to fill the blanks in the history of the Hungarian art of military science between 1849 and 1878, focusing on the firearms of the infantry warfare. The Hungarian historiography, and the military science history treats the decades after the defeat of the Revolution quite unfairly. Only a few Hungarian sources elaborate the fundamental changes that influenced every level of the military science in the mid-19th century. I deem this era very important because it determined the evolution of our country's army from both military and political aspect. My aim is to give a detailed analysis of this war, most importantly the wars infantry, tactics, firearms and through proper Hungary-related tactical examples show the difference between the Austrian and Prussian military perception.

Besides this my goal is to confirm my results not only with archive resources, but with the use of experimental archeology methods to examine the effectiveness of historic firearms. The tactics and military science of this era cannot be comprehended without thorough examination of the handling and maintenance of contemporary firearms, as we are not closer to estimate their effectiveness if we are not familiar with the background of the combat training. It is also important to know the properties, making and structure of the authorized ammunition. This kind of research has not been conducted and published neither in Hungary nor in any other country before, therefore my research covers a virgin territory.

Hypothesis

According to my main hypothesis that lead me to write my dissertation, until 1867 the imperial-royal army in the respect of infantry tactics and firearms represented the previous stage in the art of military science in every war of the 19th century. The basis of my hypothesis is that the defeat in the war of 1866 marked a turning point in the life of the Monarchy's military, after that the army was able to step on a course of evolution that is considered modern even compared to the major European powers.

I presume that the applied tactics and the evolution of firearms is basically an organic process, which in the case of the imperial-royal military shows a paradigm of skipping a few

steps along the way. I presume that after the war in 1866 both the Common Army and the Royal Hungarian Army successfully implemented the necessary changes. In my opinion it is very important to display the firearms of the Hungarian Royal Army, and their tactics, for this reason I would like to paint a human-centric picture of the Hungarian soldier of the second half of the 19th century, so the war can be perceived from a lower viewpoint.

I presume that the systematization of Prussian Dreyse needle-guns could not provide the needed advantage to win the war against the imperial-royal army in 1866. To properly exploit the capabilities of that gun it was necessary to reform the strategic, operational and tactical levels too. I presume that the immense power of the Prussian military reform is based on the culmination of these factors.

I presume that the active range of the generic infantry soldier appeared in this era and have not increased significantly ever since. I presume that the increase in the firearms destructive capabilities is based on the increased rate of fire and the developments in training methods rather than on the more accurate shots fired from a longer distance. I presume too that outstanding losses in the war of 1866 were caused by the increased destructive power of infantry guns fired from 300 steps (225 meters) and not by the shots fired from long distance.

Research methods

The academic background of my dissertation is based on findings in archives. For choosing the utilized scientific literature I used to latest Hungarian, English, German, and Italian sources. As a basic principle instead of using secondary sources I attempted to reach back to the original sources: regulations, memoirs, contemporary essays, reflections, textbooks. My research in archives was based on the collections of the HM-HIM Hadtörténeti Levéltár (Hungarian Military History Archive) and the Kriegsarchiv in Vienna.

An accessory to my work is the experimental archeology research on the ballistic examination of contemporary guns which plays a significant role in the understanding of the capabilities of these firearms, the results are published in the appendix.

The standardizing of the percussion military rifles

The percussion military rifle's standardization could be able because of the modernization of production technologies. The percussion military rifle was even more precise than the flintlock smooth bore military musket, but it was less susceptible to weather conditions, which

reduced the rate of misfire. The condition for the general spread of rifling were only given by the installation of new projectiles. The new type of weapons were allowed to reach the fire speed of the former smoothbore muskets by the cone-shaped ammunition, because whereas loading, the caliber is smaller, however due to propellant gases or the soldiers mechanical impact the projectile's fire speed were enlarging and with the rifling the bullets were physically in contact.

Although the weapons' precision and the ammunitions' piercing power have grown significantly, there were no immediate changes in case of infantry tactics. Its primary reason is that the method of loading did not change. However, the steps of loading a percussion military rifle has been simplified, the private soldiers still needed to do a 10-15-act of movements to prepare the rifle for shooting. We can interpret as another restrictive factor that the soldier could load the weapon only in standing position. It is undeniable that target practice had a more important emphasis in the regulations; however, the bayonet charge remained the final tool to decide the battle, which is a direct consequence to the low rate of fire. The key to the effective salvo fires and the successful bayonet charges was the soldiers' drivability, and for this it was mandatory to keep the closed battle formations. The use of open formations was only validated in the beginning phase of the fight, before the decisive trust of the closed formations.

The French army experimented with particular reforms but the implementation of assault tactics could not overwrite the theories of Napoleon's general infantry tactics on its own; indeed, in a paradox way the general standardization of percussion military rifles enforced the bayonet charge's early implementation and limited the time of fighting with musketry fire.

The Imperial and Royal Army was one of the firsts that standardized the 1854 M Lorenz rifle which was the most advanced percussion military rifle without any doubt. Until the war in 1859, the implementation of the new firearm type has been only partial and the infantry tactics' reform has not been done at all. The shooting exercises had a more emphasized role in the infantry's training system, but the true marksmanship training was still missing from the processes. The Italian war, especially the battle of Solferino is a good example for this dichotomy: the Army Corps No. VIII., led by Lajos Benedek has developed an indefatigable and successful defense against the Italian army that was on the previous level of military strategy; while the other corps – due to the deficiency of their leadership – got the worst against the French army's modern weapons and military tactics.

The defeat at Solferino was followed by hesitant reforms. The new tactical manual dealt more with the percussion military rifles capabilities, however, instead of innovative reforms stopped at the copying of the French system.

The effect of breech loading rifles to the art of war

The Prussian military reforms that started in 1807 had its first significant success in the war in 1866. The wisdom of Helmut Moltke is clearly visible in harmonizing both theoretical and practical aspects of the reform process. The acceptance of the breech loading rifle was only a part of the Prussian army's toolkit that provided domination against of the Imperial and Royal Army in the level of strategy, in the operational level of war and in the tactical level of war.

However, we cannot underestimate the tactical importance of the Dreyse needle firing rifle. The new weapon, the new ammunition used by troops deployed in open formations, maximizing the effectiveness of rifle fire; and the mission-type tactics, based on the troops' flexibility and the efficient leadership made an insuperable hitch to the Austrian army.

The Dreyse needle-rifle was not more accurate than the Lorenz rifle, and its bullet was not more lethal than the Austrian projectile. The advantage of the weapon was predominantly its breech loading mechanism that increased the rate of fire dramatically. It also contributed to better use of covers. Parallel with the acceptance of the weapon, the Prussians developed the infantry's marksmen training system. However, instead of larger distance aimed shots the infantry tactics' new main element had become the quick fire from close ranges.

The important element of Prussian infantry fire was the autonomy of the soldier while firing. The private could choose the firing position and could decide the target he will shot at. The Prussian military leadership made a better developed response to their enemy's precise rifled weapons than the French shock-attack. They rejected to use the attack as tactic at all cost and relied on utilizing the breech-loading guns abilities. The infantry could better utilize the capabilities of the effective gunfire because they applied open formations much suitable for defense than attack. The gunfire became the main tool to decide the fight not the bayonet charge. The reduction of the size of the basic tactical unit increased the efficiency of the Prussian infantry. Not just the battalion but the company had also a well trained able commander allowing the effective use of the mission based leadership.

Counter to the Prussian army the Imperial and Royal army opined that close formations and using bayonet leads to success at the battlefield. The applied military tactic in the war of 1866 was only a slightly modernized version of the Napoleonic infantry tactics. We have to accept that Géza Perjés was true in the following: the Austrian army cannot have proper tools on the level of basic infantry tactics using muzzle-loading rifles against of the Prussian army that used breech-loader rifles. On the other hand, losing both in the battle of Königgrätz and in

the six-week war assumes more problems. The Austrian army's slow, circumstantial array, the commander who was mobilized to the area of operations in the last minute, the missed operational level maneuver by Lajos Benedek to attack the Prussian army in parts that accomplished a strategic encirclement, and the tactical manuals based on erroneous conclusions were all the factors to the disastrous defeat.

The standardization of the rifled breech-loading gun in the Army of the Hapsburg Empire

To maintain the Hapsburg Empire's eroding European political and military power the military reform was indispensable all over the army's spectrum. The work started with a huge impetus and owing to that, the Hapsburgs could introduce a new, modern breech-loading infantry rifle with advanced military tactics similar to the Prussian one. The Wänzl rifle that was modified from Lorenz rifles in 1867 proved to be a temporary solution, but the 1867 M Werndl rifle was the most modern service rifle in Europe up to 1870. The weapon's 11 mm caliber, its loading system, the high precision rifled bore, respectively the self-contained brass cased cartridge that accelerated the reloading process were all state of the art developments by the time of their introduction.

The acceptance gives an exciting momentum of the Austrian military affairs and the military effects industrial prosperity. There is no doubt that the rifle was considered very modern in those years, however the military leadership ignored the possibilities of the repeating mechanisms that were already available. The Werndl rifle – comparing to other single-shot constructions – could be modified to repeating mechanism in a much more complex and expensive way, but in the end of the 1870's, it was already obvious that the next important paradigm will be to increase the rate of fire.

The introduction of small bore rifled breech loading weapons led to the the overestimation of the long distance rifle fire's efficiency. Most of the theorists assumed that the closed tactical formations as well as the decisive battles fought at the battlefield will remain among the major factors in fighting the war. The breech loading rifles' increased effective range will contribute with firing salvo at the enemy's closed formation before the troops deploy into battle formations. The unrealistically long shots had become a part of firing drill. However the wars in the 1870-1880's cannot prove that method's *raison d'etre*. The faith in the long shots also reflected in the ammunitions development in 1877 by increasing its ballistic performance. It was no longer enough to know the rate of fire, accuracy and killing power of the round, but it

was also important to understand the trajectory of the projectile for targeting different distances. The flat trajectory could only be accessible with smaller caliber, lighter projectiles with better ballistic coefficients, and with higher muzzle velocity. This demand determined the development directions, which are still considered modern today.

The military leadership understood the importance of the introduction of new military tactics and modern marksmanship training matching the capabilities of the new rifle. The firing drill and marksmanship training were not part of the general manuals anymore but independent documents describing each and every single part of the rifle and its use. The target practice had parted from the general drill and occupied its place what is the same in nowadays. The importance of live firing increased drastically while the bayonet drill's relevance – and the pages in the regulations – strongly reduced.

For the efficient use of the new type of soldier and the new type of weapon, it was necessary to step forward from the theories of Napoleon's military tactics. However, the regulation of the Imperial and Royal Army in 1873 shows dichotomy. It introduced the Prussian style open formations but also kept the instructions of the closed formations. According to the new military manual the basic tactical unit became the company but on the other hand the document did not offer the flexible approach that would have been essential to the implementation of mission-type leadership within these units.

The breech-loading rifles and the modern military tactics of the Hungarian Royal Army

'... *dispersed formation and target practice*...' Archduke Joseph Karl highlighted these two factors, which the Hungarian Royal Army had to focus besides the training and the implementation of exercises. When the renewed Royal Hungarian Army was established the domestic demand appeared to adopt the most modern military tactics and use the most modern armament of the era. Meeting this demand the freshly set up Chief Command of the Royal Hungarian Arm prepared the instructions with great impetus, in which they emphasized the using of open formations and the proper implementation of target practice. From the organizational working process, there is a sign that the Royal Hungarian Army was intended to be in some respects a rival of the K. u. K. Army, in coherence with our national values. The military tactics of the Prussian-style dispersed formation was fitting to the Hungarian national nature, respectively the national pride also enforced that the Hungarian Army should put more emphasis on the modernization and modern military solutions.

The introduction of a new rifle was essential to implement the modern tactics. The Hungarian Government planned to create its own production capacity to equip the troops, so after 1849 it was necessary to revive the domestic military industry. However the start-up of the rifle-production was only a partial success. The first order of 200.000 rifles was fulfilled by the Hungarian firm, but on long term it was not cost effective enough to maintain a large capacity gun manufacturer in Pest. The other elements of the Army's equipment would be acquired from domestic sources with more or less success. The sources indicate that the resources of the Army were far from perfect.

The acceptance of the Werndl rifle was not unanimous in the army. The Hungarian military theorists however acknowledged its robustness and reliability, but in some aspects it was found inferior compared to other breech loading systems.

Parallel to the establishment of the Royal Hungarian Army the domestic officer training was initiated at the Ludovika Academy to train officers for the national troops. The Ludovika and its periodical, the Gazette of the Ludovika Academy (Ludovika Akadémia Közlönye, LAK) has been an important workshop of national military theorists. It can be stated that the authors of LAK fit to the highest standards of the period: they examined the past and the period events with correct conclusions and gave valuable suggestions to decide the directions of development of the Royal Hungarian Army.

It is important to acknowledge that the target training manuals and the marksmanship program of the common army and for the Hungarian Royal Army were modern and with little modifications, they still are in nowadays. The marksmanship training facility of the common army in Bruck and the infantry skirmish school in Déva, run by the Royal Hungarian Army stood as hallmarks that the aimed shot and modern tactics had important role in the basic system of the army.

The first trial of the new system was the annexation of Bosnia and Herzegovina. The Army faced many unusual conditions during the campaign. The regular and irregular troops opposing the Austro-Hungarian army were equipped with modern armament and they could not be enforced to fight in traditional decisive battles. To defeat them the only way was to use modern military art and modern military tactics. The deployed troops could not use closed formations anymore. The enemy avoided fighting in open field, and deploying into closed formation was impossible due to the highly fragmented terrain. The enemy was able to place precise long distance shots with their modern rifles and artillery pieces. The Monarchy's army had to fight a war that adumbrates the changes in the art of military strategy of the First World War.

The small bore single shot breech loading infantry rifle remained in service till the middle

of the 1880's. They were replaced with 7-8 millimeters bore repeating infantry rifles that utilized a cartridge loaded with smokeless powder and a full metal jacket bullet to enhance ballistic performance.

Conclusion

In my dissertation I attempted to review the basic correlation between the applied infantry tactics and the evolution of infantry guns in the armies of the Hapsburg Monarchy. My work covers the events of only 30 years – from 1850 to 1880 – however I shed light on radical changes and quick evolution procedures that were unknown in the military until the mid-19th century.

The imperial-royal army was not fond of experiments. The military leadership preferred the well regulated procedures and the principles of the art of military science that proved successful before, they disliked radical changes. The main reasons behind this were the conservative mentality of the imperial-royal officer corps and the limited financial resources of the Empire.

The introduction of the percussion military rifle was too late as the transition took more than 10 years from smooth bore to rifled arms. The French and Prussian armies settled for the general use of percussion guns in the 1840's. By the time of the war of 1859 the Lorenz rifle was not available in sufficient numbers. On the other hand we cannot blame the defeat on the partial adoption of percussion rifles. Neither parties of the Italian war could fully exploit the increased accuracy and effective firing distance. The French assault tactics without any doubt incorporated modern elements, but failed to radically reform the Napoleonic infantry tactics. The muzzle loading guns, the low firing-rate and the difficult reloading process obstructed the full adoption of modern tactics based on open battle formations. Even though these guns were able to fire accurate shots, the strength of the battalion was still based on the fire density and properly timed volley fire. This required the soldiers to stand close to one-another possibly in a close battle formation. The last resort to force a decisive victory was still the bayonet-assault.

The years following the Italian war were the years of exploration of new ways and faint-hearted reform attempts. The Empire without a doubt placed emphasis on the potential of the percussion rifles, however they ignored the new trends of the firearms evolution that were perceptible in the beginning of the 1860's. The imperial-royal military leadership, alongside with the other European nations held on to the muzzle-loading guns, and in the beginning of the 1860's they only improved the manufacturing technology of the guns. The decision makers

of the officer corps instinctively disliked the breech loading guns and failed to derive the proper conclusion from the war of 1864. Besides the adoption of French assault tactics, the tactical reform had failed too.

The war of 1866 was a turning point from both the aspect of politics and the aspect of the art of military science. The Prussian needle-firing rifle and the mission-type infantry leadership and tactics rendered the tactics of the Napoleonic art of military science obsolete instantly. It banished the closed fighting formations from the battlefield, while drastically lowered the significance of the bayonet-assault.

The experiences of this war were processed in an unusually fast and effective manner. The whole scale reform process of the army seemed indispensable. The army adopted the elements of Prussian infantry tactics and the breech-loading guns with unusual élan and bravery. The Werndl rifle was one of the most modern infantry rifles of its time, which now coupled with the application of the most advanced tactics. The training of soldiers, the emphasis on marksmanship as an individual discipline led the way to the birth of the basics of the modern infantry training still considered relevant today. Prime examples of these efforts were the establishment of the army school of musketry in Bruck and the infantry skirmish school in Déva. We can declare that after the Compromise the Empire was able to leave behind its slothfulness and until the First World War was able to keep up with the world in cutting-edge infantry guns and the modernization of applied tactics.

It is especially important, to mention that the Hungarian army established in 1868 fully adopted these modern principles, moreover, following the calling word of the national pride, it incorporated a more sensitive, more open viewpoint towards innovation into the establishment and development of the national army.

Increased accuracy increased firing rate, increased penetrating power, flatter trajectory and lighter ammunition. These are the five basic elements that define the infantry's weapon improvements even today. The tremendous technological leap in the second half of the 19th century drastically increased the infantry guns capabilities, but we can observe, that the armies somewhat overestimated these weapons' tactical value. The new training manuals and instructions of the Werndl rifle standardized a training system in which the training for long range firing – up to 1000 meters – was quite essential. This can be explained by the improved weapons and ammunition, but completely ignores the skills of the individual soldier. The effective combat distance of the regular infantry trooper is not more than 200-300 meters even today, with a little exaggeration we can say that we fire from the same distance as we did during the time of the Napoleonic wars. This was not the way the evolution of the firearms went. The

increased firing rate played a much more important role in the destructive capabilities of guns. The breech loading system, the self contained metallic cartridges, and then the introduction of repeating, self-loading and automatic rifles were the driving force behind the exponential growth in the destructive power of infantry units.

The evolution of the infantry tactics naturally did not halt after 1866. Due to the technical developments of guns – better firing rate, larger effective shooting range – the opportunities to use closed combat formations decreased even more. The closed formations were almost completely banished from the battlefield. The units were forced to deploy into open orders out of the enemy's artillery and infantry firing range. The advancing units dispersed in squad line formations such wide that questioned the earlier existing views on the fights spatial dimension. The decisive element of the war could not be focused on a single battlefield anymore. Instead of a single decisive battle fought by the whole armies, a chain of operations were needed to win. The operational art of war secured of its place between tactics and strategy.

New scientific result

1. I conducted the examination of the military tactics and firearms development, those descriptions and the analysis of interactions in the middle and the end of the 19th century, that were missing or less analyzed in the national and international bibliography. I reduced the hiatus from the national bibliographies of the art of military sciences with the introduction of small arms and the related military tactic and basic principles of military leadership (by the Prussian army) between the events in 1848-49 and the First World War.
2. I proved and supported by a series of examples in my dissertation, that from the middle of the 19th century the major driving force behind the development of infantry tactics became the advance of technology, not the changes in society as during in the French Revolutionary Wars. I proved in my dissertation that the Austro-Hungarian Monarchy's firearm development has been carried out consciously, crossing through several stages of development. On the other hand, I proved that after the defeat of Königgrätz, the Monarchy made quick and effective changes; chose the proper way of development and to refit the soldiers. The Monarchy adopted one of the most modern weapons of Europe.
3. I carried out the experimental archeological examination of the most important infantry arms of the era to prove the statements made from the weapons both from theoretic and practical sides too. The detailed results of the study are published in the annexes.

4. I presented in my thesis the process in which the Hungarian Royal Army integrated the modern combat system. I proved that the Hungarian Royal Army, despite its initial difficulties, was able to reach a standard that was comparable to the common army. I have verified that the Hungarian Chief Command has successfully introduced a new warfare based on the "dispersed" warfare and that the Army was not far behind the common army in the field of armament. I proved that in parallel with the revival of the Hungarian Royal Army, a military think tank of high professional quality was established in Hungary.

Future research, recommendations, practical use of the results

I do not consider my research complete. The most detailed part of my assignment is the War of 1866, but I wish to further clarify the events of this - especially the Trautenau battle –, by exploring additional archive resources. Based on similar, primary sources I would like to analyze the typical tactics of the antecedent War of 1859, the southern theatre of the War of 1866, and of the War of 1878. Additional research direction is the accurate documentation of the reestablishment of the Hungarian military firearms industry. For this, I have already started exploring the archival sources of the Kriegsarchiv in Vienna and those of the Steyr armory. My further plan is to continue exploring the activities of the skirmishing school of Déva and the marksmanship school of Bruck, for which further archival and local history research will be required.

My research is particularly important for officer training, as the appearance of Prussian tactics and command methods – mission-type leadership - has induced changes in military sciences that are still present today. The modern officer, non-commissioned officer, subunit commander cannot be imagined without acquiring a high level of professional knowledge, as the management system can no longer be imagined without redundancy and autonomy. For the same reason, I consider the presentation of the changes of the art of warfare during this era to be essential, since the basic principles of modern marksmanship training that are being applied today are rooted in this period. The mass fire of the infantry is replaced during this period by the aimed shots of the individual soldier, to which for the first time in history, the development and general acceptance of the precise breech-loading rifle, suitable for the tactical objectives is connected.

Balázs Németh, 2018

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