

Muskets Made the Ottoman State?: Handheld Firearms and State Formation in the Ottoman Empire from the Fifteenth through Seventeenth Centuries

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In an anthology on the politics of state formation, historical sociologist Charles Tilly wrote on the relationship between interstate warfare and state formation that “war made the state, and the state made war.”¹ Here, Tilly theorizes that the demands of intense interstate warfare drives state leaders to expand and consolidate their polity’s administrative capacity to mobilize resources needed for the increasingly resource-intensive weaponry and strenuous war efforts that determine war outcomes. These war efforts in turn produce military innovations that alter the tactical landscape, and necessitate additional state capacity to counter or maintain the advantages such innovations provide. Representing a conjuncture between the widespread adoption of an unprecedented weapons technology – namely gunpowder – and the emergence of centralized states, early modern European states have served the exemplars typifying Tilly’s conceptualization of interstate competition and state formation as a positive feedback loop. For instance, military historian Geoffrey Parker has applied Tilly’s theory to formulate his version of the “Military Revolution” thesis, arguing that “because gunpowder weapons were expensive to produce, maintain and supply, only the most wealthy and prosperous political entities were able to afford a gunpowder train large enough both to defend their lands and to attack their enemies,” facilitating the formation of centralized states, as better-resourced monarchs outcompeted the feudal magnates within their realms to consolidate state power.² As these newly centralized states competed for geopolitical power, the tactical pressures of battle demanded they further centralize, expand, and consolidate state capacity to martial an ever-increasing supply of resources for warfighting and military innovation, translating these pressures into drivers of state formation.

As one of the three early modern states dubbed the Islamic “gunpowder empires” alongside the Safavid and Mughal empires, the Ottoman empire would seem to exemplify this dynamic, given the centrality of gunpowder weapons to its conquests suggested by this moniker, and the geopolitical rivalries it faced on at least two fronts simultaneously for much of its existence.³ As such, to what extent did the organizational demands of adopting handheld firearms, and their social and political implications, drive the formation of state capacity of the fifteenth to seventeenth century Ottoman Empire? Though the widespread adoption of handheld firearms by Ottoman forces and their production demands did drive state formation, they always operated alongside other factors and undermined state capacity in the long-term overall, by empowering the Janissaries to pursue parochial interests that burdened

¹ Charles Tilly, ed., *The Formation of National States in Western Europe*, (Princeton: Princeton University Press, 1975), p. xiv, quoted in Arjun Chowdhury, “The Self-Undermining State,” in *The Myth of International Order: Why weak states persist and alternatives to the state fade away*, (New York: Oxford University Press), 2017, 18.

²Kelly DeVries, “Gunpowder Weaponry and the Rise of the Early Modern State,” *War in History* 5, no. 2 (1998): 128, <http://www.jstor.org/stable/26004330>.

³Rhoads Murphey, “Material Constraints on Ottoman Warfare: The Immutable Context.” In *Ottoman Warfare, 1500-1700*, (London: Routledge, 1999), <https://doi.org/10.4324/9780203015971>, 13.; For much of its history, the Ottoman Empire faced geopolitical rivals on multiple fronts, from the Habsburgs and their Catholic allies in the West, to Shi’ite Safavid Iran in the East, and later with the collapse of the latter, the expansion of the Russian empire into the Caucasus region from the North.

their capacity for fighting, and forced the Porte to rely on *sekban* militias loyal only to the economic gains such firearms brought them.

Contrary to their reputation, handheld firearms did not constitute the sole decisive factor on early modern battlefields, at least for the Ottomans. Surveying several major Ottoman victories traditionally attributed to their deployment of gunpowder weapons, military Ottomanist Gábor Ágoston writes in his article, “War-winning weapons? On the Decisiveness of Ottoman Firearms from the Siege of Constantinople (1453) to the Battle of Mohács (1526):”

However, firearms [...] seldom decided the outcome of military engagements. It was a combination of many factors, including the Ottomans' ability to consistently outnumber their enemies in deployed troops and firearms [...] This, in turn, reflected the strength of the Ottoman administrative-fiscal and logistical systems, which maintained, paid, and supplied one of the largest armies in central and southeastern Europe, Asia Minor, and the Middle East.⁴

Here, Ágoston argues that firearms served only one factor that, combined with others such as superior numbers and logistics, determined the Ottomans' victorious outcomes. For instance, in the 1453 Siege of Constantinople, “careful planning, resourceful leadership, numerical superiority [...] better logistics [...] and lack of Byzantine relief forces all proved crucial in the eventual Ottoman victory,” illustrating how organizational, logistical, and numerical superiority and the lack of Byzantine reinforcements produced this Ottoman victory alongside effective deployment of gunpowder artillery.⁵ Though the 1514 Battle of Çaldıran witnessed the effectiveness of Ottoman firearms against a Safavid army without any, both this battle and the 1526 Battle of Mohács featured massive Ottoman numerical superiority, alongside crucial tactical mistakes by their Safavid and Hungarian opponents respectively, as factors behind these victories. Ottomans' deployment of gunpowder weaponry served alongside these competing factors to produce victory as the use of firearms was not always exclusive to Ottoman armies across every battle; Mohács featured extensive use of such weaponry on both sides.⁶ Numerical superiority in firepower also produced victory at Marj Dahiğ in 1516 against a Mamluk army also heavily-armed with gunpowder weapons.⁷ At Raydaniyya in 1517, defectors informed the Ottomans of the Mamluks' battle plans securing that victory.⁸ Contrarily, Mehmed II's (r. 1444 – 1446, 1451 – 1481) 1456 Siege of Belgrade saw him defeated by John Hunyadi's 28,000-strong force of mostly ill-equipped peasants inexperienced in warfare, against his 50,000-strong besieging army that boasted a first-rate artillery force for its time, demonstrating how numerically and qualitatively superior firearms did not guarantee victory.⁹

⁴Gábor Ágoston, “War-Winning Weapons? On the Decisiveness of Ottoman Firearms from the Siege of Constantinople (1453) to the Battle of Mohács (1526),” *Journal of Turkish Studies* 39, (2013): 142-143.; Eric McGeer, “The Defence of Constantinople,” in *The Cambridge Companion to Constantinople*, ed. Sarah Bassett, (Cambridge: Cambridge University Press, 2022), 128.

⁵Ágoston, “War-Winning Weapons?,” 132.

⁶Ágoston, “War-Winning Weapons?,” 135.

⁷Ágoston, “War-Winning Weapons?,” 140.

⁸Ágoston, “War-Winning Weapons?,” 142.

⁹Ágoston, “War-Winning Weapons?,” 138-139.

Importantly, Ottomanist Géza Dávid writes in his chapter in *The Cambridge History of Turkey*, “Ottoman Armies and Warfare, 1453–1603,” that most Janissaries wielded firearms only “by the second half of the sixteenth century,” sometime after the Ottomans had achieved all their major conquests.¹⁰ As such, the Ottomans had not exploited handheld firearms technology to the fullest until after their most significant expansions, limiting their contributions towards Ottoman empire-building to simply one among many factors as opposed to a decisive one. These qualifications to Ottoman firearms’ tactical advantages demonstrate them as less than overwhelmingly decisive on the battlefield and limit the extent their introduction drove the Ottomans’ state formation, by establishing upper bounds to the tactical pressures incentivizing the Ottomans to develop the state capacity for producing and maintaining such weapons, even if they retained significant tactical value.

The Ottoman shift towards an infantry-based army of musketry during the Long Habsburg-Ottoman War of 1593-1606 demonstrated that firearms nonetheless remained advantageous enough to apply sufficient tactical pressure to drive the fiscal-administrative expansion needed to service such centrally commanded infantry armies. However, this pressure hardly fueled the ensuing state formation alone. In his article, “A Contribution to the Military Revolution Debate: The Janissaries Use of Volley Fire During the Long Ottoman-Habsburg War of 1593-1606 and the Problem of Origins,” historian Günhan Börekçi writes how one account of the 1605 Siege of Esztergom “clearly describes the musketeer Janissaries practicing volley fire” in battle well before the first known instance of western armies deploying the tactic in action in 1620.¹¹ As a tactic, volley fire solved the limitation of muzzle-loading muskets and arquebuses whereby enemies could advance during their long reloading intervals, arranging musketeers into rows that fired in rotation. Each row took its turn to fire as a wave, then reloaded kneeling down to allow the rows behind their turn until they had completed reloading to fire again and so forth, enabling a constant barrage at the enemy.¹² Given that volley fire operated most effectively when employed by mass columns of highly-trained, motivated, and disciplined infantry under centralized command, its adoption heavily incentivized states to develop the fiscal-administrative infrastructure needed to service these expansive armies of highly professionalized troops to optimize volley fire’s tactical effectiveness.

As such, proponents of the “Military Revolution” thesis regard the adoption of volley fire as central evidence demonstrating the pursuit of fiscal-military state formation in response to battlefield pressures.¹³ However, in his article, “Firearms and Military Adaptation: The Ottomans and the European Military Revolution 1450-1800,” Ágoston writes that “[Adoption of volley fire] might, at least partly, be explained by the swelling of the corps and the resulting decline of the janissaries’ fighting skills and discipline, which in turn required constant drills to keep their skills up to date and to enhance corps coherence.”¹⁴ Contextualized alongside another passage stating that

¹⁰ Géza Dávid, “Ottoman Armies and Warfare, 1453–1603,” in *The Cambridge History of Turkey*, ed. Suraiya N. Faroqhi and Kate Fleet, vol. 2: 276–319, The Cambridge History of Turkey, (Cambridge: Cambridge University Press, 2012), doi:10.1017/CHO9781139049047.014, 284.

¹¹ Günhan Börekçi, “A Contribution to the Military Revolution Debate: The Janissaries Use of Volley Fire During the Long Ottoman-Habsburg War of 1593-1606 and the Problem of Origins,” *Acta Orientalia Academiae Scientiarum Hungaricae* 59, no. 4 (2006): 411, <http://www.jstor.org/stable/23658758>.

¹² Börekçi, “A Contribution to the Military Revolution Debate,” 410.

¹³ Gábor Ágoston, “Firearms and Military Adaptation: The Ottomans and the European Military Revolution, 1450-1800,” *Journal of World History* 25, no. 1 (2014): 98, <http://www.jstor.org/stable/43286061>.

¹⁴ Ágoston, “Firearms and Military Adaptation,” 98.

“realizing Istanbul's need for infantry troops, the Janissaries themselves seized the moment and used it to enlist their sons and relatives into the corps. Selling Janissary certificates - that is, ‘entry tickets’ to the corps - became a lucrative business for janissary officers.”¹⁵ Ágoston’s quote illustrates how the adoption of volley fire did not necessarily indicate warfare-driven state formation taking place. The Janissaries exploited the massive manpower demands accompanying the shift to an infantry-based army to induct their relatives into their corps by selling them forged Janissary certifications underneath the Porte’s nose.¹⁶ As the *devşirme* increasingly struggled to recruit enough Janissaries to meet growing demand, the state increasingly recruited through the recommendations of Janissary commanders, who naturally picked their own relatives and personal retinue, creating conditions enabling Janissaries to pass off the relatives they sold forged certificates to as recruited through such avenues.¹⁷ As such, the interests of the increasingly monied Janissaries in filling their corps’ expansion with social connections drove the expansion of military personnel accompanying the shift to an infantry-based army and the corresponding fiscal-administrative expansion as much as the tactical pressures of handheld firearms.¹⁸ These tactical pressures thus hardly consisted of the sole or even primary factor behind the shift to a musketry-based army, even if the much shorter training durations of musketry provided a technological advantage in personnel logistics through enabling combat performance to remain satisfactory despite the lax recruitment standards.¹⁹

¹⁵ Ágoston, “Firearms and Military Adaptation,” 123.

¹⁶ In the wake of Selim II (r. 1566 – 1574) and his brother’s competing enlistment of droves of *levend* militia and landless *Sipahi*, the latter dispossessed by their father Suleyman I’s transition to the *iltizam* tax-farming system the away from the *Timar* land grant system of land tenure, on the promise of admitting them into the tax-exempt *askeri* class upon coronation as princes competing for support for their succession claims, his defeated brother’s supporters resorted to pillaging to satisfy their frustrated expectations in the wake of their patron’s defeat. With the countryside plagued by banditry often conducted by the very *Sipahi* previously charged with policing, Selim II increasingly resorted to sending janissaries to enforce law and order in rural areas, where they complemented their salaries with the fines they collected for legal violations, which they then accumulated to purchase and establish local land and businesses and shore up their income against the rising inflation of the late sixteenth and seventeenth centuries from the influx of Spanish American silver. This marked the beginning of the janissaries developing vested interests that diverged from their once exclusive loyalty to the sultan, to the extent that most refused recall orders from the countryside. As such, previous prohibitions on janissary commerce became much less enforceable, resulting in janissary families seeking to induct kin into the corps for the lucrative opportunities membership could now bring.; See Ágoston, “Firearms and Military Adaptation,” 98.

¹⁷ Ágoston, “Firearms and Military Adaptation,” 118.; Gilles Veinstein, “On the Ottoman Janissaries (Fourteenth-Nineteenth Centuries),” In *Fighting for a Living: A Comparative Study of Military Labour 1500-2000*, ed. Erik-Jan Zürcher, (Amsterdam: Amsterdam University Press), 2013. <http://www.jstor.org/stable/j.ctt6wp6pg.7>, 120.

¹⁸ By the mid-seventeenth century, the Janissaries has obtained permission to pursue commercial ventures on the side, to support the spouses and families that the Porte had by now granted them the freedom to have. These ventures included bachelor rooms, inns, public baths, market stalls, and coffeehouses, and entrenched the Janissaries’ political influence by establishing a financial dimension to their clout. Despite its concerns that coffeehouses could easily become institutions for incubating political dissidence against the state, the Porte merely “began to close down a few [coffeehouses] as a deterrent to the others” instead of banning them outright, attesting to how large their capacity to exert political pressure over the Ottoman state had further grown with the addition of their financial interests. See Ali Çaksu, “Janissary Coffee Houses in Late Eighteenth-Century Istanbul.” In *Ottoman Tulips, Ottoman Coffee: Leisure and Lifestyle in the Eighteenth Century*, by Dana Sajdi, (London: I.B.Tauris & Co Ltd, 2007), <http://dx.doi.org/10.5040/9780755608393.ch-005>, 125.

¹⁹ The Ottoman state increasingly recruited older boys averaging sixteen years old that could quickly become old enough for combat, reflecting how recruits could complete musketry training within months, as opposed to years with janissary archery.; See Ágoston, “Firearms and Military Adaptation,” 118.

Furthermore, Ágoston points out that Janissary expansion pre-dates the Long War, suggesting incentives other than the competitive pressures of firearms innovation – such as the manpower demands of occupying vast new conquests in Iraq and the Levant – drove this expansion, even if the Long War did accelerate this trend.²⁰ Considered against all this, the practice of volley fire drills did not necessarily reflect state formation centrally driven by evolving combat environments, but could also reflect the need to maintain cohesion and discipline among the vast influx of inexperienced personnel into the janissary corps. This duality of causation renders these drills equally the effect and cause of state formation. as Servicing the influx of manpower both necessitated and was necessitated by the purposes volley fire served in maintaining troop quality, and the organizational demands imposed on the state by the optimization of musketry tactics. As such, that volley fire drills played both chicken and egg in the relationship between gunpowder warfare and state formation due to its multiple causality qualified the limits of the former in driving the latter as merely one causal factor among others, instead of serving a central one.

The vast expansion of their corps in the wake of the Long War granted the Janissaries, already influential enough to “prompt” Suleyman I (r. 1520 – 1566) to “prematurely” abandon the 1529 siege of Vienna; an increasingly mutinous mood over dwindling supplies had been growing, giving the Janissaries even more leverage over the Ottoman state as the most critical supplier servicing its increasingly demanding manpower needs.²¹ In his article on how Janissary influence obstructed Ottoman efforts at tactical and administrative military reforms in the seventeenth century, “Strong Armies, Slow Adaptation: Civil-Military Relations and the Diffusion of Military Power,” political scientist Burak Kadercan writes that the Janissaries’ “recruitment, socialization, and career advancement strategies produced a strong corporate identity within the Janissary corps” resulted in an often tight solidarity that held even against the sultan, on occasion, when they felt he threatened their interests.²² Here, Kadercan explains how the *devşirme*, their own dedicated institutions such as their exclusive barracks, and the career opportunities within their own dedicated officer corps produced solidarity among Janissaries; this unity could manifest intensely enough to defy even the very sultans in whose service they organized their existence around when they perceived the state might threaten their privileges.²³ The shift to an infantry-based army only exacerbated the weight of their influence as the Janissaries exploited the Ottoman state’s increased manpower demands with their expanded numbers to veto tactical reforms. The adoption of bayonets, which would have overhauled their traditional training regime, was blocked in such a fashion, and the Military Administration was routinely gouged for more privileges, such as during their 1656 revolt in Istanbul in demand of higher wages.²⁴ As Janissaries inducted more and more members without state approval, state budgets became increasingly overburdened by their salaries, which

²⁰ Ágoston, “Firearms and Military Adaptation,” 112.

²¹ Burak Kadercan, “Strong Armies, Slow Adaptation: Civil-Military Relations and the Diffusion of Military Power,” *International Security* 38, no. 3 (2013): 134, <http://www.jstor.org/stable/24480558>.

²² Mesut Uyar and Edward J. Erickson, *A Military History of the Ottomans: From Osman to Atatürk* (Santa Barbara, California: Praeger Security International/ABC-CLIO, 2009), p. 39, quoted in Kadercan, “Strong Armies, Slow Adaptation,” 134.

²³ Kadercan, “Strong Armies, Slow Adaptation,” 133-134.

²⁴ Kadercan, “Strong Armies, Slow Adaptation,” 135.

only worsened Janissary discipline as the Porte struggled to pay them fully or punctually.²⁵ Janissaries even managed to employ their clout to increasingly avoid combat, with the share of their membership serving on campaign declining to seventeen percent by the Russo-Ottoman War of 1710-1711, and those that did fight performed badly given the corps' resistance to tactical reforms.²⁶ Sultans who pushed for reform too hard risked dethronement and even assassination, as Osman II (r. 1618 – 1622) discovered with his beheading by a Janissary revolt for his reform attempts.

This willingness to act as kingmakers not only hamstrung the Porte's capacity to maintain centralized control over the Janissaries and deploy them effectively in combat, but also undermined its fiscal capacity as the state now refused to entertain Janissary financial interests at the risk of armed revolt. The deterioration of the Janissaries, from elite professional slave-soldiers to fraternal pressure group, started with their expansion to supply increasing demand for musketry and highlighted the potential for firearms to undermine state capacity depending on their interaction with pre-existing institutions, nullifying the gains in state formation they otherwise drove.

Forced by Janissary insubordination to search for alternative pools of infantry recruits, the Ottoman state found one in the *sekbān* militias, a solution that soon merely replaced one problem with another. In his book, *The Ottoman Empire: Conquest, Organization, and Economy*, Ottomanist Halil İnalcik writes of the employment of *sekbān*:

After their contract of service had expired, the *sekbān*, usually under the same *bölük-başı* [heads of militia companies], looked for new employment in the service of pasha or the begs. If none was available, they roamed about the countryside, exacting money and provisions from villages and towns without defense. In this case, the *sekbān* were pursued by the government forces as *celālī* [...] the *celālī* disorders recurred, especially during periods of war, because the sultan always needed *sekbān* as *tüfeng-endāz* [musketry] soldiers.²⁷

²⁵ Kivanç K. Karaman and Sevkett Pamuk, "Ottoman State Finances in European Perspective, 1500–1914." *The Journal of Economic History* 70, no. 3 (2010): 612, doi:10.1017/S0022050710000550.; The extent of the Janissaries' influence was great enough that by the turn of the eighteenth century, they had pressured the state into allowing a waiting list of "Janissary candidates" for prospective inductees. Teenage boys who worked as shampooers and male sex workers for the Janissaries could register on this waiting list to receive the privilege of eating and living in the Janissary barracks to better service their clients. Serkan Delice writes that these youths would live on the barracks under the patronage of an older, fellow Janissary who they would stay with and service until they had matured enough to grow sufficient facial hair to style a mustache. The Janissaries could exert their influence to compel the state into maintaining recruitment even as the 'applicants' outstripped demand in order to establish a waiting list, only to use this waiting list to grant access to the barracks for services such as live-in sex work, attesting to the degree their influence over the Porte had grown.; see Serkan Delice, "The Janissaries and their Bedfellows: Masculinity and Male friendship in Eighteenth-Century Ottoman Istanbul," in *Gender and Sexuality in Muslim Cultures*. ed. Gul Ozyegin, (London: Routledge, 2016), <https://doi.org/10.4324/9781315583945>, 125.

²⁶ Gábor Ágoston, "Military Transformation in the Ottoman Empire and Russia, 1500-1800," *Kritika: Explorations in Russian & Eurasian History* 12, no. 2 (2011): 306, <https://search.ebscohost.com/login.aspx?direct=true&AuthType=shib&db=30h&AN=61339908&site=ehost-live&scope=site>.

²⁷ Halil İnalcik, "The Socio-Political Effects of the Diffusion of Fire-arms in the Middle East," in *The Ottoman Empire: Conquest, Organization, and Economy*, (London: Valorium Reprints, 1978), 201.

Here, İnalçik describes how the *sekban* militias – wage-earning musketry militias usually recruited from the peasantry contracted to serve as military personnel by the state – refused to disarm with their contract’s expiration, searching for employment under a pasha or beg, or resorting to banditry if they could find none. Contextualized against the ongoing *Celali* Revolts, these *sekban* now contributed to the very rural banditry problem arising from the rebellions the state had previously contracted them to suppress. The peasants that comprised these militias found military employment and banditry more lucrative than peasant life and farming during the hardships of the Little Ice Age, one major factor underpinning these rebellions.²⁸ Yet, as İnalçik mentions in his quote, the state continued to recruit *sekban* despite their tendency to participate in the *Celali* rebellions upon discharge because the manpower demands of musketry warfare and the unreliability of the Janissaries. *Sekban* appealed to the Porte as a vast, quickly mobilizable pool of relatively cheap peasant musketeers, even if this perpetuated a self-enforcing loop by suppressing *sekban* who joined the *Celalis* with more *sekban* who would later do the same. The Porte continued hiring *sekban* as a stopgap despite the negative feedback loop this perpetuated, which attested not just to the dearth of reliable sources of disciplined military personnel, but also the capacity of firearms to undermine state capacity by creating this shortage in the first place. By giving the Janissaries a pretext to enhance their bargaining powers *vis-à-vis* the state and driving it to give firearms to those of tenuous loyalty who might wield them against the state itself, firearms exposed how vulnerable Ottoman military institutions were to disruptions to the balance of power between the Porte and its Janissaries.

Moreover, İnalçik writes that the pressures of the *Celali* rebellions drove the Porte to encourage “the pasha and begs governing the provinces” to enlist into their “household forces” as many *sekban* as they could muster, even though this enabled many pashas to join the *Celalis* themselves; the excessive taxation imposed to sustain these forces resulted in their dismissal from office, leading elite officials to join the *Celali* ranks.²⁹ This dynamic attested to how the Porte’s increasing desperation to find a dependable source of musket-bearing troops empowered provincial notables to field their own private armies, further diluting state capacity through military decentralization. These private armies’ potential to threaten the central government already struggling against insurrection and janissary insubordination forced the latter to tolerate their appropriation of military capacity as the recruitment supply of last resort, relying on them as nominal extensions of the military even though their loyalties ultimately

²⁸ The coincidence of the Little Ice Age and the inflationary pressures of Spanish American silver inflows created a web of intertwined crises, where peasants malnourished by the dwindling harvests resulting from the cooling climate left for the cities to find better economic opportunities, leaving the remaining ones increasingly overtaxed by the *timariots* and *sipahi* looking to shore up their wealth against inflation, itself exacerbated by the Porte’s debasement of silver coinage to mint sufficient currency to meet expenditures the wake of this inflation. Dwindling numbers of peasants working the fields and increased urban demand from peasant flight into the cities only heightened inflation, as did the concurrent but ill-timed demographic expansion. Together with the Porte’s decision to make irregular wartime taxes permanent to sustain budgets strained by the ongoing crises, peasants now found employment as *sekban* more economically viable than agricultural work, and refused to disarm when their service contracts ended. Keeping their weapons, they either searched for work as the private troops of provincial notables, or joined in droves the very banditry the Porte previously deployed them to end, as even this proved more lucrative than agrarian life in the seventeenth century context. These factors, among others, resulted in the social unrest and intrastate conflicts known as the *Celali* rebellions.; see Renée Worringer, *A Short History of the Ottoman Empire*, (Toronto: University of Toronto Press, 2021), 190-197.

²⁹ İnalçik, *The Ottoman Empire*, 201.

remained with their grandee households.³⁰ The private armies of these notables became the final resolution of the Ottomans' military manpower shortage started by the shift towards an infantry-based army in response to the tactical impact of firearms, diffusing state capacity among these grandee households, rendering the Porte beholden to their vested interests, and compromised its ability to implement policy with centralized resolve. That handheld firearms proved crucial in this transition from patrimonial rule to decentralized monarchy demonstrated their potential to equally drive the consolidation and disaggregation of state capacity, depending on the institutional and social contexts they interacted with, rendering them a double-edged sword for the interests of state formation.

One area where increasing firearms adoption did develop state capacity was the Ottoman state's increasing demand for handheld firearms, which drove its direct intervention into the firearms industry to secure a steady supply of firearm components, though only in complementary ways. In his book, *Guns for the Sultan: Military Power and the Weapons Industry in the Ottoman Empire*, Ágoston writes that the Ottomans declared the firearms and munitions industries state monopolies, intervening in various manufacturing areas, particularly in saltpeter production.³¹ The Porte "tried to place villages with saltpeter deposits under the treasury's supervision" to maintain its monopoly, assigned the local *beglerbeg* or *sanjakbeg* to oversee production, which mainly took place in state-run workshops or ones integrated into the *iltizam* tax-farming system, or by villagers conscripted in return for tax exemptions.³² The Porte also managed iron, lead, and copper mines that supplied munitions and firearms manufacturing through state-appointed superintendents or the *iltizam* system, as was the case with the many state-established gunpowder and firearms manufactories across the empire.³³ These industrial interventions attested not only to the Porte's administrative reach for securing provision of these crucial resources, but also their roots in the *timar* land grant system.³⁴ In his article, "Ottoman Military Organization in Southeastern Europe, c. 1420 – 1720", Ottomanist Rhoads Murphey writes:

But thereafter [Murad II's (r. 1421 – 1444, 1446 – 1451) death], the resources available to the state through land registration and control over the revenues deriving from land, coupled with a developing bureaucratic apparatus capable of effectively assessing and extracting the Empire's agricultural, mineral, and

³⁰ İnalçik, 201.

³¹ Gábor Ágoston, *Guns for the Sultan: Military Power and the Weapons Industry in the Ottoman Empire*. (New York: Cambridge University Press, 2005), 104.

³² Ágoston, *Guns for the Sultan*, 105

³³ Ágoston, *Guns for the Sultan*, 129, 170.

³⁴ The *timar* land-grant system of land tenure served as the Ottoman Empire's means of supporting its *sipahi* cavalrymen without maintaining them as a permanent standing army weighing on the state treasury. Intended to allow a *sipahi* to support himself in place of a salary, a *timar* granted a *sipahi* the right to tax the peasants that lived on that land, and a portion within this allotment for his own personal farming use, to support himself as compensation for military service to the Ottoman state. In return, the *sipahi* was expected to serve on the Sultan's campaigns when called upon for service, and provide a pre-established amount of troops, weaponry, and supplies proportionate to their *timar* revenue. If a *sipahi* did not answer summons to serve on campaigns, the Ottoman state might strip him of his *timar*, and by extension, his livelihood, while commendable performance on the battlefield might earn him additions to his *timar*-holdings. Outside of campaigns, *sipahi* were expected to expend their resources on law enforcement over their *timars*. Notably, the *timar* land itself was considered *miri*, or state (sultanic) land – the *sipahi* neither owned the land nor held the right to expel the peasants who lived on it, since the latter held an ancestral right to farm this land. Rather, the Ottoman state itself owned the land, and merely granted a *sipahi* the power to collect taxes and enforce the law over the *timar* as his jurisdiction.; see Worringer, *A Short History of the Ottoman Empire*, 59.

commercial wealth, provided the capacity to lessen dependency on military provision from private sources and to mobilise modestly proportioned armies by drawing on the state's own agents, both the seasonally mobilised *timariots* and permanent standing forces.³⁵

Here, Murphey describes how the need to lessen their dependence on feudal retainers and private sources for troops and provisions drove Murad II and his successor, Mehmed II, to establish land registers that underpinned the *timar* system, which the Porte also repurposed for extracting mineral wealth – such as the saltpeter and metals used to produce gunpowder and ammunition. As such, gunpowder weaponry, which the Ottomans adopted in the 1390's as artillery, constituted a noteworthy driver of Ottoman state formation alongside other factors driving centralization, such as intrastate competition. Moreover, that this institution-building pre-dates the widespread integration of handheld firearms into Ottoman forces limited the contributions of the shift to a musketry-based army towards state formation to enhancing the administrative capacity of pre-existing institutions, rendering them complementary to other drivers of state capacity.

The shift to a musketry-based army interacted with the Janissaries' outsized influence in Ottoman domestic politics to further empower their pursuit of personal interest. This intersection proved a significant detriment to the Porte's capacity to wage war, demonstrating the importance of institutional context in the relationship between military technology and state formation. That the Ottoman experience with handheld firearms diverged so much from the expectations of the "Military Revolution" thesis attests not just to their lack of primacy as drivers of state formation, but also questions the viability of the thesis in asserting that technological factors alone can drive state formation. Additionally, the organizational demands of deploying handheld firearms merely fueled the expansion of pre-existing institutions, attesting the relevance of historical timing in state formation; for perhaps musketry may have played a central role in the establishment of burgeoning Ottoman institutions, had their widespread integration into their military occurred a century earlier. Whether war made the Ottoman state or not, muskets and arquebuses hurt state capacity more than they helped.

³⁵ Rhoads Murphey, "Ottoman Military Organization in Southeastern Europe, c. 1420 – 1720," In *European Warfare, 1350–1750*, ed. Frank Tallett and D. J. B. Trim, 135–58, (Cambridge: Cambridge University Press, 2010), doi: 10.1017/CBO9780511806278.009, 141.

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