



Making Things to Serve Sultans, Viziers and Army Commanders (1450–1800)

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Ottoman documents on manufactures for court and army concentrate on governmental initiatives. However, the time has come to view these branches of production in a broader, comparative perspective, focusing on the demands of the sultan's officials and the actions of skilled persons working for the apparatus of empire.

As for the production of military hardware, the demands of eighteenth-century warfare fell most heavily on the more prosperous workshops; and the lack of working capital became a permanent worry after the Russo-Ottoman war of 1768–74. However, until about 1750, the sultans' military machine was still ahead of the Russians in the supply of armaments and foodstuffs. Technology and the lack of manufacturing skills, thus, were not at issue when Ottoman armies suffered defeat.

Historians concerned with court and state manufactures in early modern Europe often feel that they need to restore legitimacy to a type of enterprise that during the last 30 years or so has generally suffered from a 'bad press'. In the neoliberal environment which we inhabit, economists and economic historians have decried state manufactures as inefficient, unresponsive to technological innovation and even as especially amenable to political

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‘influence’ or corruption. In contradistinction, in recent years a tendency has emerged that regards court- and state-sponsored enterprises as positive because their contribution towards the emergence of a labour force skilled in manufacturing, especially in environments where nothing of the kind had existed before. Moreover, the privileges-accorded entrepreneurs in this state-dominated sector often created a climate propitious to innovation, as non-privileged manufacturers became aware of new methods and techniques. In addition, the economic performance of court and state manufactures was quite often significantly better than their detractors had assumed. Broadly speaking, these points function as arguments for ‘bringing the state back’ into the history of manufacturing.¹

Many scholars working on the early Ottoman Empire, by contrast, have but rarely felt the need for ‘bringing in’ an entity that in the historiographical world in which they operate has never been ‘out’ in the first place. Partly, this preponderance of the state is a result of the sources, in their overwhelming majority the work of officialdom. Current or former officials have even authored most narrative sources, including the many chronicles penned between the 1500s and the late nineteenth century; if these bureaucrats had not made a living by the use of their pens, Ottomanist historians would be in no better case than their colleagues working, for instance, on mediaeval Southeast Asia.²

In addition, the interest of twentieth- and twenty-first-century historians in the Ottoman state is an outcome of the political situation during the last century: following the collapse of the empire after the First World War, the Republic of Turkey came into being as a result of a ferociously fought war against Greece, and indirectly England, with France and Italy playing more episodic roles as adversaries of the Turkish nationalists. As the fighting had destroyed people and infrastructure, the newly formed state—and the military as its most powerful sector—became almost the sole actor not only in politics but also in manufacturing, with civil society quite weak until the last decade of the twentieth century. In Turkey, Ottoman history thus became the history of the Ottoman state, and scholars regarding this situation as unsatisfactory have had a difficult time convincing their readers that there was indeed a world outside of the state and military apparatus.

¹ The term was coined by Evans, Rueschemayer and Scoopol.

² The term ‘Ottomanist’ denotes scholars who have worked/work on Ottoman history after the demise of the empire in 1922–23.

On the other hand, the time has certainly come to introduce the substantial historiography on Ottoman court and state manufactures to non-Ottomanist researchers working in a comparative mode. For once, scholars interested in the Ottoman world find that they are in good and numerous company; for, after all, production intended for the ruler/elite and the attendant courts, armies and navies has existed, and exists, in quite a few polities the world over.³ Even in early modern England, where luxury manufactures specific to the court were extremely rare, naval arsenals and the shipbuilding that was the basis of English/British world power were invariably under the direction of officers and other appointees of the crown.

Viewed from this perspective, the Ottoman case is in no way exceptional: we find both the production of luxury goods for the palace and an active and quite well-documented manufacture of arms and ships. However, while historians dealing with early modern Europe have been much interested in ‘spin-offs’, put differently in the unintended side effects of court and state enterprises upon nascent industrialisations, in the Ottoman world this issue is only relevant to a limited extent. As recent scholarship has shown, when engineering became a separate profession in the late 1700s and early 1800s, specialists in naval and military engineering were significantly in advance of their colleagues in charge of civilian projects, thus providing models for the latecomers to emulate.⁴ Only in this specific sector, Ottoman state-sponsored enterprise resulted in ‘spin-offs’ from which civilian production could benefit.

State Demands and the Market: The Interplay of Centralised and Decentralised Production

In reaction against the state-centred focus characterising a large section of Ottomanist historiography, the present summary discusses the interplay between the demands of the sultan’s officials on the one hand and the actions of skilled persons on the other, the latter usually from the subject population and in search of markets for their work. For many artisans/artists (*ehl-i hiref*), even if employed by the army or palace, worked for outsiders as well. In many cases, they would have been unable to subsist

³ These introductory lines take up discussions from the symposium ‘State Manufactures in a Global and Comparative Perspective’ (Florence, September 2014).

⁴ Martykánová, *Reconstructing Ottoman Engineers*.

otherwise, as their regular salaries, comparable to the pay received by soldiers, seriously contracted in times of inflation. When working for the sultan in jobs requiring specialist knowledge, it was customary for highly skilled artisans and artists to make gifts to the ruler, for which they could expect a counter-gift. In spite of the salaries granted and received, the relationship between the sultans and the artists/artisans they employed thus was not fully commercial.

A few high-ranking officials including viziers might act as patrons of luxury goods, or at least they mediated between the sultan and the writers and/or artists producing illustrated manuscripts.⁵ Certainly, the means of these officials were smaller than those of the sultan; even so, the latter could often afford a significant range of fancy goods. While only a tiny fraction of the luxuries once owned by Ottoman dignitaries are still in existence, chance survivals such as the two ‘salons’ (*başoda*) from the house of an eighteenth-century Christian notable from the town of Kastorya, today in northern Greece, show that there were wealthy provincial families able to afford richly decorated interiors. Similarly, ornamented chambers were in use among the notables of Damascus and Aleppo as well.⁶ Patronage by non-royal elite figures must thus have been more substantial than present-day collections indicate. Our views are one-sided as more often than not, surviving pieces of artwork used by non-royals have come down to us because of later confiscation and appropriation by the Ottoman palace. Things that the sultan did not need or want often no longer exist.

However, we need to insist on the uncertainties of palace employment; and as noted, many skilled artisans/artists looked out for supplementary sources of income. Where miniature painting is concerned, Tülay Artan has pointed out that certain painters even combined their artwork with a courtly or military-administrative career.⁷ Regrettably, we do not know whether such people were in high regard because of their official positions, or whether their painter colleagues regarded them as dubious amateurs. Artan moreover has questioned the established distinction between miniature painters in the employment of the palace and their colleagues working for the bazaar. She has suggested that when palace

⁵ Fetvacı, *Picturing History at the Ottoman Court*: 21.

⁶ Fotopoulos and Delivorrias, *Greece at the Benaki Museum*: 408–11; and Gonella and Kröger, *Angels, Peonies, and Fabulous Creatures*.

⁷ Artan, ‘Arts and Architecture’: 412.

patronage gradually fell away after the death of Ahmed I in 1617, and more dramatically after the virtual transferral of the court to Edirne in the second half of the seventeenth century, competent painters worked for a paying clientele in Istanbul. Upon occasion, even foreign ambassadors commissioned Ottoman artwork.⁸

Other ‘state-sponsored’ manufactures operated in the military and naval sectors. Furthermore, in the fifteenth and sixteenth centuries, the construction sites of the major sultanic pious foundations such as the mosque complexes of Mehmed the Conqueror (Fatih) or the Süleymaniye functioned as public enterprises very much resembling campaigns. Large sums of money were at issue; and Sultan Ahmed I (r. 1603–17) attracted criticism because he had not made any booty from which to finance the major mosque complex that he put up towards the end of his reign. As a legitimising response, one of his courtiers made much of his monarch’s generosity in sponsoring such an elaborate structure.⁹

But even if in sultanic construction projects, central supervision played a major role, such worksites were not necessarily monolithic. Rather, controls were more or less stringent, depending on whether the workshop produced most inputs under direct official supervision, or alternatively, the responsible project directors purchased semi-finished products according to need. Under certain circumstances, artisans thus might adopt innovations in style or technology upon their own initiative. In the firearms sector especially, people that had mastered a certain technology often seem to have passed on their knowledge outside of the closed circle of ‘state-sponsored’ workmen.

Every historiography is a child of its time; thus, in the 1960s and 1970s, with the Turkish state a dominant factor in the economy, historians such as Ömer Lütfi Barkan and Halil İnalcık emphasised central control over production, not only through direct interventions by the sultans’ bureaucrats but by more indirect means as well. In this context, they stressed the large complexes of pious foundations which Ottoman monarchs established or permitted their relatives to establish, the administration remaining in the hands of court-appointed officials. At the same time, these foundations had a significant impact upon urban production and trade, as they rented out shops and workshops and covered markets to finance religious, educational

⁸ *Ibid.*: 451.

⁹ Murphey, ‘Mustafa Safi’s Version of the Kingly Virtues’.

and charitable activities. For Barkan, the major sultanlic foundations resembled the ‘mixed’ state–private enterprises of his own days, in which the state often had the upper hand.¹⁰ By contrast, İnalçık stressed the role of sultanlic pious foundations in capital formation; but this author clearly sensed that accumulation of productive capital was not the strongest point of the Ottoman socio-political system.¹¹

In the last 20 years or so, however, historians have gone beyond these general assumptions by investigating, often in fine detail, centrally controlled manufactures producing goods required by the court and the military. Thus, we now possess studies on the naval arsenal, the cannon foundry, the manufacture of gunpowder and most recently the mint.¹² Art historians have concentrated on the production of luxury goods for sultans and other elite personages, with special attention to illustrated manuscripts. In these studies, they often discuss how private sponsorship and that of the sultans interacted. Pious foundations, by contrast, today appear mostly in the context of Islamic law. In conformity with present-day ideologies, their role in facilitating government interventions has become a secondary point.

In the present article, we highlight the interaction of Ottoman central control and private, often market-oriented, initiatives, introducing a group of monographs that analyse the highly centralised workshops previously referred to, including the mint. However, at least in the eighteenth century, the latter could not have functioned without the input of individual *sarrafs*, money changers about to turn into bankers. As for the ‘men of skill’ working for the sultan, they sometimes served the court and sometimes satisfied market demand. Thus, the faience manufacturers of Iznik, who have become the subject of important art historical monographs, not only made panels for the sultans’ mosques and palaces, but also plates and bowls for well-to-do customers.¹³ The woollen cloth manufacturers of Salonika, once a focus of scholarly interest but today somewhat neglected, are a

¹⁰ Barkan, ‘Şehirlerin Teşekkül ve İnkişafı Tarihi Bakımından’.

¹¹ İnalçık, ‘Capital Formation in the Ottoman Empire’; İnalçık, ‘The Ottoman Economic Mind’.

¹² Ağoston, *Osmanlı’da Strateji ve Askerî Güç*; Bacqué Grammont, ‘La fonderie de canons d’Istanbul et le quartier de Tophane’; Bölükbaşı, *18. Yüzyılın İkinci Yarısında Darphane-i Amire*; Bostan, *Osmanlı Bahriye Teşkilâtı*; Gölen, *Osmanlı Devleti’nde Baruthane-i Amire*; Tunç, *Tophane-i Amire ve Osmanlı Devletinde Top Döküm Faaliyetleri*.

¹³ For instance, Denny, *Iznik: The Artistry of Ottoman Ceramics*.

nearly ideal example of decentralised workshops trying to cope with the demands of a distant centre. And to conclude our overview, we briefly dwell upon the gunsmiths that produced the muskets indispensable to any army of the 1500s or 1600s; remarkably and for reasons that remain unclear, this branch of production seems to have mostly escaped the control of Ottoman bureaucrats.

Centralised Production with a Twist: The Naval Arsenal

In early modern polities including the Ottoman Empire, naval arsenals, cannon foundries, gunpowder manufactures and fortresses all required technologies rather more advanced than most non-military industrial enterprises; and the naval arsenal of Istanbul is a good example of this tendency.¹⁴ Located on the Golden Horn in the suburb of Kasımpaşa, this enterprise produced warships, at first mainly galleys, which in the Mediterranean context were easier to manoeuvre than sailing ships. But from the second half of the seventeenth century, the Ottoman navy finally switched to galleons and other vessels using only sails, which permitted the deployment of more firepower. However, given the advantages of the galley, especially in shallow waters, this change took several decades to complete. During the Cretan war against Venice (1645–69), Ottoman naval commanders cautiously experimented with this novelty; but afterwards, they provisionally returned to galleys. Only after 1682 did viziers and naval commanders switch over to sailing vessels in earnest, perhaps the need to train soldier-sailors to handle guns of a type not used on galleys slowed down the changeover.¹⁵

Both free workers and slaves laboured in the arsenal, the latter often former captives taken at sea or captured in raids against the coasts of southern Italy. People from this latter region so often wound up in servitude because Naples and Sicily were part of the kingdom of Spain, with whose rulers the Ottoman sultans had no formal peace treaty before the late 1700s.¹⁶ In addition to its productive functions, the arsenal housed oarsmen propelling the galleys. Perhaps in order to make communication among these unfortunates difficult and thus prevent uprisings, it was common to

¹⁴ Bostan, *Osmanlı Bahriye Teşkilâtı*.

¹⁵ Bostan, *Kürekli ve Yelkenli Osmanlı gemileri*: 114–16.

¹⁶ Marmara, *Istanbul Deniz Zindanı 1740*.

‘mix’ enslaved captives, draftees that for instance the Istanbul boatmen needed to supply, and common criminals. For when in the 1500s, frequent naval battles resulted in serious losses of manpower, the authorities began to sentence people to servitude on the galleys who otherwise might have been executed.

As the campaign season began in May and ended in November, the Ottoman navy lay in port during the winter. In this ‘dead season’, the galley slaves received only minimal supplies, which they supplemented by earnings in petty crafts and trade; petty theft was by no means unknown either. Michael Heberer von Bretten, who served as a rower on Ottoman galleys for several years during the 1580s, has left a vivid description of slaves knitting woollen stockings; interestingly, this same craft was also common among the galley slaves of the French king in Marseilles and Toulon.¹⁷ Slaves who served as assistants in shipbuilding also lived in the naval arsenal.

During the sixteenth century, Muslims predominated among free arsenal labourers; but by about 1650, the workforce was predominantly Orthodox.¹⁸ Perhaps we can explain this change by the closure of the Venetian naval arsenal on the island of Crete, which occurred in the early 1600s. Apparently, many jobless arsenal workers found employment in Istanbul, over time some of them probably turned into Ottoman *zimmis* or non-Muslim subjects.¹⁹

Large quantities of semi-finished goods arrived in Kasımpaşa, often from fairly distant regions, by means of a rather elaborate procurement system. Sailcloth, mostly of cotton, came largely from Western Anatolia, a situation which explains why in the 1500s the sultans forbade the exportation of raw cotton. But after 1600, with production probably increasing, this prohibition first became intermittent and ultimately disappeared.²⁰ As cash to finance semi-finished goods was always in short supply, the central government tried to discharge its debts by instructing tax farmers to pay the producers and deduct the money thus expended from the payments they would need to make at the end of the year. In practice, this arrangement resulted in a no-interest loan to the Ottoman treasury.

¹⁷ Heberer von Bretten, *Aegyptiaca Servitus*: 245.

¹⁸ Çizakça, ‘Ottomans and the Mediterranean’.

¹⁹ Dursteler, *Venetians in Constantinople*.

²⁰ Faroqhi, *Towns and Townsmen of Ottoman Anatolia*: 135–37.

Whatever the mode of financing, the arsenal thus relied on sailcloth produced outside of its own direct purview.

The production of hemp and the preliminary treatments required to make this material suitable for cordage took place in the provinces too, particularly in and around the town of Samsun on the Anatolian Black Sea coast.²¹ In certain areas, people had to furnish fixed quantities of hemp, at low prices or even in lieu of taxes, an obligation that cultivators tried to avoid if possible. Either a special official or else the local district judge were in charge of purchases, and if sixteenth-century complaints reflect reality, honesty was not the defining quality of these officials. Hemp was also the subject of private trade; for in Istanbul, there were many shipowners and fishermen generating substantial private demand for hemp and cordage. For the time being, however, we do not know very much about the interface between government procuring systems and private trade.

But the most important procurement problem surely concerned timber. In the 1600s, north-western Anatolia still had a substantial forest cover, and the area surrounding the Bay of İzmit grew tall straight trees very suitable for masts. Certain areas only served the navy. But given the high-level private demand for timber in Istanbul, smuggling was a serious problem.²² From the subjects' point of view, the administrators in charge of timber procurement for the naval arsenal were a source of trouble, because of their attempts to expand the area set aside for the arsenal, without taking into account the rights of the local population to timber and firewood.

A high level of supervision was current in the arsenal of Istanbul: in the early 1600s, the adjacent area, known as the Arsenal Garden (Tersane bahçesi) actually became the site of a minor imperial palace, where the court spent a good deal of time, especially during the first half of the eighteenth century. Ottoman sources apparently did not claim that strengthening control over the naval arsenal and the nearby—and somewhat unruly—town quarter of Kasımpaşa was the motivation for locating the palazzo on this site; however, such a concern may have been of some importance nonetheless.

By contrast, for semi-finished goods, the administration relied on small independent producers, whose work it could not supervise, and quality control devolved upon a limited group of merchants and officials. In the

²¹ *Ibid.*: 130–31.

²² *Ibid.*: 78–81.

1500s and 1600s, this system worked well enough. For even after major disasters such as the Battle of Lepanto (1571), the sultan had new ships built with great rapidity, and we do not hear that sailcloth, cordage or timber caused bottlenecks severe enough to hold up the enterprise.

Centralised Production: The Cannon Foundry and the Manufacture of Gunpowder

Another centralised workshop was the cannon foundry which in its eighteenth-century incarnation still towers over the Tophane quarter and the adjacent waters of the Bosphorus. On the production of cannons, the work of Gabor Ágoston has dispelled the notion common in much previous Orientalist scholarship, that the Ottomans were technologically inferior to European armies already from the late Middle Ages. More particularly, the sultans' commanders supposedly continued to use very large guns when the latter were becoming obsolete in European armies.²³ By contrast, Ágoston has shown that while Ottoman military authorities certainly produced large guns, these were often mainly for display; and according to Evliya Çelebi (1611–after 1683), it was a source of pride that no one but the Ottoman monarch possessed cannons of great size.²⁴ On board ship, however, several smaller guns normally flanked the largest specimen. In the case of mortars too, the Ottomans did not greatly differ from their European opponents, producing a variety of bombshells, from large to very small items.

As noted, Evliya Çelebi has produced a detailed description of the cannon foundry; and despite present-day historians' reservations concerning the author's often rather cavalier use of his sources, this account emphasises aspects that official documents almost never discuss, including the significance of ritual at the worksite. Apparently, the manufacturers tried to counter the risks inherent in their work by elaborate prayers and invocations of God. Given the risks involved in foundries of any kind, rituals were important outside of the Islamic world as well. In 1798–99, the German poet Friedrich von Schiller wrote a poem in which the founding of a bell took centre stage, with the ritual functions of the artefact—the announcement of peace in a war-torn world—the *raison d'être* of the entire enterprise.²⁵

²³ Ágoston, *Guns for the Sultan*: 61–95.

²⁴ *Ibid.*: 74.

²⁵ Tunç, *Tophane-i Amire ve Osmanlı Devletinde Top Döküm Faaliyetleri*. For the text of Schiller's long poem, see <http://www.kombu.de/glocke.htm> (accessed on 8 August 2014).

In Evliya's time, there was still no centralised gunpowder workshop (*baruthane*); and manufacture took place in an array of smaller workshops, although the central armoury (*cebebane*) was responsible for coordination. Thus, information often is available mainly for campaigns or insecure situations in the borderlands, when the bureaucrats serving the central administration recorded the amounts of gunpowder that the armies would receive. Or else remarkable calamities might make it into the record, such as the explosion of the Buda manufactory in 1578, with thousands of lives lost; in response, the sultan had the provincial governor executed.²⁶ Moreover, as an adjustment to changing battlefield techniques, in the late 1500s and throughout the 1600s, the descendants of cavalrymen no longer in active service might retain their privileges by supplying saltpetre to the Ottoman armies. In the 1500s and 1600s, the sultan's armies were autarchic with respect to gunpowder; and they became so again after the technical innovations of the late eighteenth century.

As a centralised institution, the *baruthane* is a product of the eighteenth century; but even in the 1700s, the manufacture of gunpowder continued on provincial sites too, especially in places near the frontier. Thus, during the Iranian wars following the overthrow of the Safavids, there were attempts, perhaps but moderately successful, to establish a gunpowder manufacture in the border fortress of Van.²⁷ Gunpowder might travel over fairly long distances, with even some Egyptian gunpowder arriving in the Istanbul arsenals.²⁸ Moreover, in the Ottoman capital, private gunpowder mills operated as well, though often seriously challenged by officialdom; among other items, they produced explosives for fireworks.

Debates concerning the Ottoman use of gunpowder resemble the discussions about cannons, to which we have previously referred. Ágoston has stressed that throughout early modern Europe, the composition of gunpowder was highly variable, and that in the late 1600s, French and Ottoman gunpowder contained identical proportions of saltpetre, charcoal and sulphur.²⁹ But in quantitative terms, the Ottoman armies of the eighteenth century fell behind; and in the late 1700s, the government imported gunpowder even from distant Sweden, until the restructuring of the local industry finally solved the problem.

²⁶ Gölen, *Osmanlı Devleti'nde Baruthane-i Amire*: 17–18.

²⁷ Genç, *Lale Devrinde Savaş*: 131–32.

²⁸ Gölen, *Osmanlı Devleti'nde Baruthane-i Amire*: 20.

²⁹ Ágoston, *Osmanlı'da Strateji ve Askerî Güç*: 148–49.

As for the dispersion of gunpowder production in different places and workshops, with variations in quality as a result, Ágoston has pointed out that the Ottomans were in the same position as their northern and western rivals. Put differently, the coexistence of centralised and dispersed workshops, a major topic of this article, was not a serious problem for the sultan's armies. At the same time, Ágoston has shown that the technology gap often attributed to the Ottomans by European observers occurred later and was much less serious than often claimed. Concordantly, Virginia Aksan, another contributor to the debate, has focused not on technology at all, but on the fact that the Ottoman elite was unwilling to fully integrate the numerous Albanian, Caucasian or Kurdish fighters, many of them mercenaries, on whose military labour the army had come to rely. In addition, sultans and viziers for a long time proved unable to compensate for the janissaries' loss of fighting power.³⁰ Findings concerning the role of private manufacture and relative parity between the Ottomans and their European opponents well into the 1700s are part of the 'anti-Orientalist' discourse, the centrepiece of present-day Ottomanist historiography.

An Interlude: Technology Transfers

In the last quarter of the eighteenth century, however, the balance of power had changed and a series of defeats, especially against Russia, induced the Ottoman sultans and their senior servitors to seriously revamp the armies and especially the technological training of the higher officers. This question has long been a favourite of historians working within the paradigm of 'imperial decline, followed by a limited revival due to increased contact with Europe', which was dominant during the 1950s and 1960s.

But in recent years, historians have attempted to deal with the question using other approaches less tainted by association with 'Orientalism'. Historians of Ottoman science have pointed out that certain members of the religious cum juridical establishment (*ulema*) were quite willing to take an interest in scientific 'imports' from Europe.³¹ Thus, Gelenbevi İsmail Efendi (1730–91) combined a career as a religious scholar with a teaching position at the Mühendishane-i Bahr-i Hümayun, the school for naval engineers that the Grand Admiral Gazi Hasan Paşa had founded,

³⁰ Aksan, 'Breaking the Spell of the Baron de Tott'.

³¹ Umut, 'İsmail Gelenbevi at the Engineering School'.

with the Baron de Tott as *spiritus rector* (1775). İsmail Efendi may have had influential patrons who helped him obtain this position. But once in office, he threw himself into the study of the European-style mathematics that naval engineers and artillery specialists would require.³²

In his thesis on Gelenbevi İsmail Efendi, Hasan Umut has rightly pointed out that engineering schools were something of a novelty in eighteenth-century Central Europe as well; and he has focused on the establishment of the ‘new’ profession of engineering and the emergence of an ‘intercultural’ scientific community. For a short while, it seemed as if some members of the religious cum juridical establishment would join this community, before the bifurcation of education after the mid-1800s cut off this possibility.³³ Dealing with a period that is partly contemporaneous with the lifespan of İsmail Gelenbevi, Darina Martykánová in her dissertation on the emergence of the Ottoman engineering profession, in both its civil/civilian and its military branches, has taken a similar approach.

Certainly officialdom was always somewhat sceptical towards non-Muslim engineers; for as noted, originally engineering had been a military activity, and it was the role of the army to defend—and if possible expand—the realm of Islam. However, with the growing need for engineers to produce roads, water systems and other non-military public works, engineering became a profession accessible to people of different faiths, often graduates of a limited number of schools.³⁴ At the time when the present overview comes to an end in the late eighteenth and very early nineteenth centuries, a process thus had begun which by the late 1800s was to result in a degree of common consciousness among Ottoman engineers. Whatever their religion, the latter now saw themselves as differing in their roles and identities from their French or German colleagues, or even in opposition to the foreigners. However, the wars of the early twentieth century soon tore apart this emergent community.

The Mint

Monographs covering the Ottoman financial bureaucracy have a lengthy history. However, the role of the mint as an enterprise is quite marginal to these studies. Apart from the various catalogues of coin collections

³² *Ibid.*: 51–55.

³³ For religious scholars’ teaching geometry, see Martykánová, *Reconstructing Ottoman Engineers*: 104.

³⁴ *Ibid.*: 3–14, 140–43, 180–85.

and the fundamental studies of Ottoman money by Halil Sahillioğlu and Şevket Pamuk, the basis for our discussion is, therefore, the very recent study by Ömerül Faruk Bölükbaşı, based on his doctoral dissertation.³⁵

The author has set himself the task of figuring out how in the roughly 100 years between the mid-1700s, when the mint became a treasury in its own right, and the currency reform of 1844, Ottoman officials and their aides produced the local coinage in the physical sense of the term. For this purpose, the author has focused on the people serving the mint in various capacities and the manner in which they secured the gold and silver necessary for their work. In addition, Bölükbaşı has discussed the interventions of the newly formed ‘treasury of the sultanic mint’ in the politics and economic life of the empire, put differently its role in procuring more or less short-term revenues. As these latter issues are not really germane to our topic, we will deal only with the first section of Bölükbaşı’s work.³⁶

At the top of the Ottoman mint, there was a set of bureaucrats chosen from among the scribes of the sultan’s council (*divan-ı hümayun*) headed by the supervisor of the mint (*darbhane nazırı* or *darbhane emini*); in the 1700s, these people were appointed for a year, although the appointment was extendable. The *darbhane nazırı* was a member of the highest level of the bureaucracy; and some former holders of the office even rose to the position of grand vizier. Under this, all-Muslim corps of officials there served various non-Muslims, who in the eighteenth century were normally Armenians. While of a much lower rank in comparison to the Muslim administrators, the latter exercised considerable power when as co-called purchasers (*mübayaacı*) they visited shops, markets and fairs to purchase gold and silver for the mint, at prices determined by the sultan’s administrators. Presumably they could count on official backing if confronted with owners unwilling to sell at the prices offered; and if in a provincial venue, a person claimed that the *mübayaacı*s [the purchasers working for the Ottoman sultans] had acquired gold or silver by illegal means, the complainant had to take his case to Istanbul. Thus, the level of protection these purchasers enjoyed appeared as a virtual immunity.³⁷ In a

³⁵ Bölükbaşı, *18. Yüzyılın İkinci Yarısında Darphane-i Amire*; Pamuk, *A Monetary History of the Ottoman Empire*; Tabakoğlu, ‘Bir İktisatçı-Tarihçi Olarak Halil Sahillioğlu’.

³⁶ Bölükbaşı, *18. Yüzyılın İkinci Yarısında Darphane-i Amire*: XVII–XVIII.

³⁷ *Ibid.*: 75–76.

different perspective, the sultan's bureaucrats may have used non-Muslims to deflect the hostility, which might arise from the purchase of gold and silver at prices that the owners considered unacceptable.

Even after the eighteenth-century centralising policies had taken effect, the supply of silver available to the mint largely depended on the cooperation of money changers (*sarrafs*); for quite a few foreign coins circulated in Ottoman markets. The *sarrafs* collected domestic and foreign coins arriving from the provinces as tax payments, and passed them on to the mint for re-coining. As the prices that the *sarrafs* received from these deals were lower than the market price of silver, they sought and found other ways of making profits. In addition, these businessmen were supposed to purchase underweight coins at market value and deliver them to the mint, although some of them used the money thus collected for speculative purposes. The system apparently worked well enough in normal times; however, during the Russo-Ottoman war of 1768-74, many taxpayers were unable to pay, with the *sarrafs* maintaining that under these circumstances they could not discharge their obligations to the treasury.³⁸

The mint not only depended on the cooperation of Istanbul's businessmen for its supplies of silver, but the institution also made extra money by selling precious metals to craftsmen such as the manufacturers of fine wire used by brocade weavers, to say nothing of goldsmiths and silversmiths.³⁹ Following a centuries-long tradition, the Ottoman government was ever suspicious of gold and silver stocks in the hands of its subjects and by means of the sultanic mint attempted to limit the amount of precious metal allowed to the empire's artisans. Time and again, the latter were forbidden to pass on gold or silver to those of their colleagues who—as everybody knew—operated on the margins or even outside the system of controls that the authorities had put in place.

But even in this sector, where state demands had high priority, local artisans and businessmen, especially if operating outside of Istanbul, found ways and means of circumventing regulations. As a testimony to this kind of inventiveness, we might refer to the many pieces of silverware that Orthodox donors, artisan guilds among them, dedicated to their churches especially in the late 1700s and early 1800s, at a time when the mint in Istanbul enjoyed unprecedented powers of control, and inspections must have proliferated.

³⁸ *Ibid.*: 87–92.

³⁹ *Ibid.*: 92–100.

Public Building Projects as Centralised Enterprises

As noted before, the construction of the Süleymaniye was a well-documented project, completed in seven to eight years during the mid-1500s.⁴⁰ We also possess a good deal of information on the construction of the Sultan Ahmed mosque, another gigantic complex that took only 11 years to build. In both cases, the period of construction is on record in the documents instituting the two sultans' pious foundation (*vakfiyye*); in the Ottoman world, all mosques and other charities took the legal form of a pious foundation.

Digging on the site of the Sultan Ahmed mosque commenced in the fall of 1609, with the foundation stone laid in early 1610. While the mosque opened in 1617, certain auxiliary buildings were complete only by 1620 well after the death of the young sultan.⁴¹ Throughout, the architect or rather—by his mediation—the sultan's treasury paid the expenses of construction. But this arrangement did not mean that all needs of the building site were centrally produced: smaller enterprises took part in the process as well, as officials purchased quite a few semi-finished materials such as nails, glass or bricks ready-made from Istanbul manufacturers. Officials even had invented different terms for bricks and roof-tiles derived from these two sources: either they were *miri*, put differently they belonged to the fiscal administration, or else they were *harici*, or to use a modern term, 'outsourced'.⁴² Once again, the construction site was a venture in which the dominant political authority used the services of many small enterprises. We know, more or less, how much money some of the latter received; but as we have only a very general notion of the contemporary price level, it is hard to tell whether working in an enterprise serving a sultanic construction site of the early 1600s was profitable or loss-making.

For the mid-eighteenth century, there exist accounts relevant to the construction of another great mosque, namely the Nuruosmaniye, remarkable because after the completion of the Sultan Ahmed mosque in 1617, no Ottoman monarch had established a major pious foundation in the central district of Istanbul. Ahmed III (r. 1703–30) was the only ruler to build at all, and the mosque put up in honour of his mother was on the

⁴⁰ Barkan, *Süleymaniye Cami ve İmareti İnşaatı*.

⁴¹ Nayır, *Osmanlı Mimarlığında Sultan Ahmet Külliyesi ve Sonrası*: 46.

⁴² *Ibid.*: 102.

distant Asiatic seaboard, in Üsküdar. Perhaps after both Ahmed III and the latter's predecessor had lost their thrones due to urban uprisings, Sultan Mahmud I (r. 1730–54) considered that the monarchy needed to be more present in the central sections of Istanbul. Probably not by chance, the new mosque thus lay across the street from one of the main gates to the covered bazaar. Sultan Mahmud died shortly before completion of the complex, and his brother Osman III (r. 1754–57) was on the throne when the mosque became operational in 1755.

In the diary covering the construction process written by an otherwise unknown scribe named Ahmed, we find a few remarks about the way in which officials were to treat construction workers, an issue barely mentioned in most other accounts. Thus, the author records that the *bina emini* or representative of the sultan on site had received orders to ensure that the workmen received their wages on time, and that nobody would dare to mistreat them claiming the particular urgency of the project.⁴³ We may conclude that administrators might withhold payment and push the workmen into labouring faster, with safety precautions falling by the wayside. Unfortunately, Ahmed the scribe has not referred to the involvement of outside enterprises in the procurement of semi-finished materials. Perhaps the sultan had decided to minimise 'outsourcing', or else the author had no interest in matters not directly controlled by his office.

In addition to complexes of mosques and other charities, the Ottoman authorities focused on fortresses. Some of the latter were part of a pre-Ottoman heritage; and Ottoman military men apparently did not regard fortifications adapted to the age of cannon fire as indispensable under every circumstance. In the steppe borderlands where Ottomans, Tatars, Cossacks and Poles or Lithuanians so often clashed, armies did not always carry cannons. Therefore, the Ottomans did not completely rebuild some of the mediaeval-style castles they had taken over, including the famous fortress of Akkerman on the Dniester, where the only adaptation to the gunpowder age consisted of thickening the walls.⁴⁴

Archaeological study has supplemented the analysis of archival documents. While Victor Ostapchuk and Svitlana Bilyayeva have published an extensive study of Akkerman (Bilhorod-Dnistrovskiy in Ukraine),

⁴³ Hochhut, *Die Moschee Nuruosmaniye in Istanbul*: 20.

⁴⁴ Ostapchuk and Bilyayeva, 'The Ottoman Black Sea Frontier at Akkerman Fortress': 142–45.

Hungarian scholars have not only worked on the more important castles in present-day Hungary but have also investigated the smaller forts (*palanka*).⁴⁵ These studies have brought to light not only the defensive concerns of their builders but also the ‘nitty-gritty’ of life in such places, including the availability of modest luxuries such as coffee cups and tobacco pipes. Unfortunately for our purposes, by the time Ottoman officials began compiling the great registers characteristic of the 1700s, the sultans had lost Hungary, so that in this case we cannot bring together archaeological and archival data in the same way as Ostapchuk and Bilyayeva have done.

In the early 1700s, the Ottoman administration still recruited workmen according to principles already in evidence during the mid-1500s: judges and local administrators received orders to draft artisans to work on a given project; and according to sultanic law, the men selected could not refuse to go.⁴⁶ At the end of the project, they might return home, although presumably, quite a few of them died before their release. Or else, given the hardships of travel, survivors might prefer to stay in the locality where they had laboured as draftees. Some Istanbul workmen might receive what amounted to an order of banishment to a remote border fortress. For in the eighteenth century, most members of the Ottoman administration had become convinced that the capital was overcrowded, and that it was necessary to reduce the population. Men living in the capital without their families appeared as particularly suspicious characters. On their return, young men sent to work on remote fortresses might fail to locate witnesses proving their status as Istanbul residents; at least legally, they might thus be unable to re-enter the city. Possibly, repairs to remote border fortresses served a double purpose: apart from the actual project, they could serve as a pretext to remove men considered undesirable by the authorities.⁴⁷

Centralised Control over Decentralised Workshops: The *Ehl-i Hiref*

Outside of the construction sector, the Ottoman palace seemingly preferred indirect forms of control. The sultans’ officials employed artists and artisans, often on an ad hoc basis; as noted, these people received quarterly

⁴⁵ Gerelyes and Kovács, *Archaeology of the Ottoman Period in Hungary*.

⁴⁶ Barkan, *Süleymaniye Camii ve İmaret-i İnşaatı*: 94–97.

⁴⁷ Farooqii, ‘Controlling Borders and Workmen, All in One Fell Swoop’.

payments, and thus they were available whenever the palace needed their services. In the early 1500s, many artists cum artisans were from the Iranian cultural world, though not necessarily ethnic Iranians. Selim I (r. 1512–20) after his victory over Shah Ismāʿīl (1514) brought a number of artists and artisans from Tabriz to Istanbul, where they seemingly trained local men, sometimes originating from the Balkans. For around 1500, the Ottoman elite highly appreciated the aesthetic norms current in the various Timurid palaces, particularly Herat and pre-Safavid Tabriz.⁴⁸ However, Iranian models remained influential in Ottoman luxury production well into the 1700s and beyond.

In the sixteenth century, the Ottoman palace began to sponsor a ‘design office’ (*nakkāṣhane*) whose masters invented decorative features that found application in various media, including textiles, books and faience.⁴⁹ At one time, the relevant artists apparently used a disaffected Byzantine church dedicated to St. John, one of the several churches known by this name and located near the sultans’ palace. Supposedly, the artists occupied the upper story and the sultans’ menagerie the lower one; if true, this situation may indicate that the prestige of the designers was not very high.⁵⁰ Whatever the truth, the closeness of the *nakkāṣhane* to the Topkapı Sarayı indicates constant referrals to palace authorities. However, Emine Fetvacı has shown that the sultan in person was not necessarily the patron; as noted in a different context, high court officials often served as intermediaries sponsoring the manufacture of valuable objects.⁵¹

Apparently, the design office did not demand dependent artisans to set up shop in the immediate vicinity. Presumably, when a given design reached, for instance, a master weaver of silk cloth, he would have had the freedom—and the responsibility—of adapting the design, so that the resulting fabric would hang properly.⁵² Perhaps fabrics, tile work, faience plates and manuscript illuminations all followed similar styles not merely because of orders ‘from above’ but also because elite customers wanted their possessions to exhibit the latest court styles. But on this issue, we do not have much information.

⁴⁸ Uzunçarşılı, ‘Osmanlı Sarayında Ehl-i Hiref (Sanatkârlar) Defteri’.

⁴⁹ Bağcı, Çağman, Renda and Tanındı, *Osmanlı Resim Sanatı*.

⁵⁰ Eyice, ‘Arslanhane’.

⁵¹ Fetvacı, *Picturing History at the Ottoman Court*: 59.

⁵² Rogers, ‘Ottoman Luxury Trades and Their Regulation’: 145.

Recent research has pointed to the probable role of highly decorated manuscripts in spreading the emergent imperial style in miniature painting.⁵³ Certainly, these manuscripts were in the treasury, but here they were accessible not only to the sultans but to high-level palace dignitaries too; and these were the ‘multipliers’ who spread the image of a highly organised, hierarchical and—by the same token—serving the Ottoman monarchs.

After a possible eclipse during the sultans’ sojourn in Edirne in the second half of the seventeenth century, the employment of artists and artisans by the palace (*ehl-i hıref*) seems to have revived and continued throughout the 1700s. However, a growing number of patrons and diversifying tastes might well have reduced the influence of designs created by court-sponsored artists. After all, by the eighteenth century, the trend was not towards the gigantic mosque complexes once sponsored by Mehmed II (r. 1431–81), Süleyman or Ahmed I, but towards a large number of smaller charities instituted by members of the elite, whose smaller size has often detracted from their variety and elegance. Even if their influence had declined, some *ehl-i hıref* served the sultans throughout the 1700s.

Centralised Control over Decentralised Workshops (Case No. 1): Manufacturing Tiles in İznik

It is still not clear why from the late 1400s onwards the small town of İznik became a centre of fine glazed faience. For while suitable clay was available a short distance away, clay was only a very minor ingredient in the white material from which the potters made İznik faience; much more important was ground-up glass, a recycled product available mainly in towns. Chargers, bowls and beakers were important products of this manufacture; in addition, Ottoman patrons also commissioned large panels with which, following the Timurid and Seljuk examples, they decorated mosques, other important charities and the sultan’s palace as well.

In sixteenth-century faience, most designs remained in fashion only for a few years, and their bewildering variety, as well as their sequence in time, forms the subject matter of the landmark study of İznik pottery by Nurhan Atasoy and Julian Raby.⁵⁴ Under Bayezid II (r. 1481–1512)

⁵³ Fetvacı, *Picturing History at the Ottoman Court*: 83.

⁵⁴ Atasoy and Raby, *Iznik: The Pottery of Ottoman Turkey*.

the ‘Master of the Knots’ was active, followed by the ‘Master of the Lotuses’, who worked under Selim I (r. 1512–20).⁵⁵ For the long reign of Sultan Süleyman, Atasoy and Raby have made out a vast number of designs, some of which flourished simultaneously, while others followed upon one another, remaining in favour for 15–25 years. Furthermore, in this period, Ottoman potters and their patrons much appreciated Chinese porcelain, mainly blue and white, which mostly arrived in the sultans’ territories by way of the Hejaz. After 1535, important painters who also worked in other media, such as Kara Memi, captured the favour of the court to such an extent that their drawings ‘invaded’ İznik pottery as well.

In the later sixteenth century, Atasoy and Raby have discerned ‘revivals’ of earlier styles; but at the same time, the so-called ‘florists’ flowers including tulips, hyacinths, *prunus* blossom and carnations were dominant design features. Moreover, during the second half of the century, potters developed a bright coral red, a colour previously unknown to faience artists. Difficult to manufacture, faience ornamented with red motifs disappeared during the early seventeenth century. When between 1638 and 1640, the powerful Queen Mother (*valide sultan*) Mahpeyker Kösem had her mosque decorated with a variety of faiences, those ornamented with red motifs were extremely rare.

Many unsolved questions surround the decline of the potteries after about 1600. Julian Raby has suggested that as Chinese import porcelain became more widespread, market demand for İznik faience contracted—and, in fact, broken Chinese cups have occurred in excavations in former Ottoman Hungary.⁵⁶ In addition, the palace demanded large quantities of tiles for the panels to ornament mosques and palaces, requiring potters to put aside work for the market.⁵⁷ The creativity of these artisans suffered, because the designs of panels often came from Istanbul, while the incredible variability of decorations on plates and bowls presumably owed much to the capabilities of local masters.⁵⁸ Official policy thus forced potters to concentrate on a few designs easy to reproduce, and thus stifled creativity. While potters in Kütahya made items ‘for the shallow pocket’ throughout the 1500s, 1600s and 1700s, production in İznik was already quite insignificant in the mid-1600s, when Evliya Çelebi visited the site.⁵⁹

⁵⁵ Atasoy and Raby, *Iznik: The Pottery of Ottoman Turkey*: 8–9.

⁵⁶ Atasoy and Raby, *Iznik: The Pottery of Ottoman Turkey*: 285.

⁵⁷ Atasoy and Raby, *Iznik: The Pottery of Ottoman Turkey*: 63.

⁵⁸ Nayır, *Osmanlı Mimarlığında Sultan Ahmet Külliyesi ve Sonrası*: 91.

⁵⁹ Atasoy and Raby, *Iznik: The Pottery of Ottoman Turkey*: 63.

Centralised Control over Decentralised Workshops (Case No. 2): Weavers in Salonika

Among decentralised workshops under central control, the best known case is that of the Jewish manufacturers of woollen cloth in Salonika. These artisans had provided the janissaries with uniform cloaks ever since their arrival in the late 1400s, when Ferdinand and Isabella of Spain, after conquering the last Muslim principality in 1492, set about enforcing religious uniformity and as a first step expelled the Jewish population.⁶⁰

Sultan Bayezid II accepted the new immigrants, probably because of the working capital as well as the technical and commercial know-how that the newcomers would bring to his recently enlarged empire.⁶¹ In particular, the manufacture of woollen cloth of a certain quality was not widespread in the sultan's territories; and janissary officers may well have regarded the rough woollens (*aba*) worn by peasants and shepherds as unsuitable for personages of rank. Mostly, the new arrivals settled in Istanbul and Salonika, setting up textile workshops within the walls of the latter city. From the early 1500s, the Jews of Salonika needed to deliver specified quantities of standard-quality woollens to the sultans' armies.

Ottoman official records reflect some of the difficulties involved: when plague epidemics were rife, not a rare misfortune, the weavers would try to leave the congested city and spread out over the countryside. Their survival being in the official interest as well, the administration in Istanbul normally permitted these moves. However, local administrators, presumably with the excuse that the weavers' dispersal would increase 'administrative overhead', demanded large sums of money before permitting the unfortunate manufacturers to leave Salonika.⁶² Furthermore, the attempt of the weavers to secure the intervention of the Istanbul authorities must have caused further delays.

During most of the sixteenth century, Salonika's manufacturers received some payment from the treasury; but they also needed to sell in the open market as this remuneration did not suffice for subsistence. Apparently, potential customers were mostly people 'of modest substance', as the poor

⁶⁰ For the first study using Ottoman documents, see Uzunçarşılı, *Osmanlı Devleti Teşkilâtından Kapukulu Ocakları*.

⁶¹ Veinstein, 'L'établissement des juifs d'Espagne dans l'Empire ottoman'.

⁶² Faroqhi, 'Textile Production in Rumeli and the Arab Provinces'.

could not have afforded anything better than rough woollens (*aba*), and the rich preferred silk fabrics opulently lined with fur.

However, by the late 1500s, Salonika cloth competed in the open market only with difficulty. After all, while the financial crisis from which the empire suffered during those years limited demand, the price of raw wool increased precipitously.⁶³ Growing demand was the major reason: for in the late 1500s and early 1600s, the manufacture of woollen cloth then flourishing in Venice relied largely on Balkan wool. Moreover, when this industry declined during the first half of the seventeenth century, Dutch and French buyers entered the market, so that prices decreased only to a limited extent.⁶⁴ A prohibition to export raw wool, which should have been advantageous to the Salonika manufacturers, existed mainly ‘on paper’. Remarkably, the government did not insist too much on enforcement, although export prohibitions had a well-established place in the ‘economic’ thinking of the Ottoman elite.⁶⁵ Additionally, around 1600 English woollens entered the Ottoman market in force; while these imports were not necessarily cheaper than Salonika cloth, they were often of reasonable quality and therefore ‘good value for money’, putting further pressure on local producers.

Lastly, the manufacturers had to contend with growing demand from the janissary corps, whose membership grew dramatically in the late 1500s; and an impecunious Ottoman treasury increasingly paid in depreciated currency and/or demanded deliveries of woollen cloths in lieu of taxes. Because of these combined pressures, after about 1650 Salonika woollens disappeared from the clothing chests of elite Ottomans. Sometimes manufacturers responded to the crisis by lowering the quality of their cloth. However, this reaction carried risks of its own; at one time in the 1600s, a Jewish dignitary was executed because of the low-quality textiles that the government had received.

More commonly, weavers fled to Izmir or to places in nearby Macedonia, where they were under no obligation to deliver woollen cloth. As a testimony to this migration, there survive the records of a court case involving the Jewish community of Salonika and that of Karaferye (today: Veroia or Veria) in northern Greece, where certain weavers after

⁶³ Braude, ‘International Competition and Domestic Cloth in the Ottoman Empire’.

⁶⁴ *Ibid.*: 446.

⁶⁵ Faroqhi, ‘Textile Production in Rumeli and the Arab Provinces’: 70.

their flight from Salonika were making cheap woollens for a popular clientele. The manufacturers of Salonika demanded that their opponents should return ‘home’ to shoulder their part of the manufacturing burden. In response, the weavers from Karaferye claimed that they had been living in this town from time immemorial, and their colleagues from Salonika had no claim on them at all. Finally, the Ottoman authorities permitted a small number of weavers to stay and ordered the others to return to their (alleged) hometown.⁶⁶ While the manufacture of woollens in Salonika was no longer viable after the mid-1600s or even earlier, some Jewish weavers continued to work as an appendage to the janissary corps until the abolition of the latter in 1826.

Decentralised—and Successful—Workshops Without Much Central Control

Evidently, in the case of Salonika’s woollen weavers, the supervision of small manufacturers by the sultan’s officials did very little to protect the industry. On the other hand, workshops in the small arms sector, where official involvement was minimal, did quite well. Unfortunately, limited bureaucratic input means that sources are very scarce.

Inscriptions and other decorations on surviving handguns (*tüfeng* or *tüfek*) and pistols have turned out to be a major resource for the craft historian.⁶⁷ Furthermore, some information emerges from the published and unpublished inventories covering Ottoman fortresses, dating to the years after 1450.⁶⁸ In Ottoman castles, handguns were in use already in 1455; and Christian garrison soldiers being quite common during this early period, we frequently find non-Muslim subjects of the sultans serving as handgunners. Among janissaries, the adoption of handguns went back even further, with the first instances on record in the reign of Murad II (r. 1421–51, with interruptions). In 1605, janissaries stationed in Hungary engaged in volley practice, a type of shooting often associated with the—much debated—‘European military revolution’ of the early modern period.⁶⁹

⁶⁶ Gara, ‘Çuha for the Janissaries’.

⁶⁷ Elgood is fundamental but does not deal with Anatolia, and but marginally with Istanbul.

⁶⁸ Ágoston, ‘Firearms and Military Adaptation: The Ottomans and the European Military Revolution, 1450–1800’: 94.

⁶⁹ *Ibid.*: 97–98.

Handguns were typically the work of private gunsmiths: regional styles from the Balkans have attracted particular attention.⁷⁰ The area of Boka Kotorska (around Kotor/Croatia, Cattaro in Italian) had a reputation for highly ornamented handguns known as *džeferdar* and documented since the late 1600s; some items bore dates and/or the names of the makers.⁷¹ Connections to Italy, especially the Venetian town of Brescia, were close; and some owners of firearms from the Balkans attached locks of European manufacture to their guns. Conversely, European owners of muskets were eager to acquire and use Ottoman gun barrels.⁷² Contemporary observers felt that the latter were of much superior quality, as the barrels consisted of sheets of metal coiled into spirals, a technique limiting the risk of explosion. Interestingly, Mughal sources have attributed this invention to the imperial workshops of Akbar.⁷³

Private gunsmiths being numerous, Ottoman subjects wanting handguns should have found them without too much trouble. Particularly the irregular soldiers (*sekban*, *sarica*, *levend*) hired for single campaigns and receiving no armaments must have relied on these private sources of supply. Moreover, quite a few users claimed that the guns made in smaller workshops were of superior quality. Serving—at least partly—as advertisements, the inscriptions mentioning gunsmiths' names and other particulars reflected a growing self-confidence on the part of the manufacturing artisans.

However, around 1600, the easy availability of handguns worried the authorities; for by now, the sultans' armed forces could not claim a 'firearms monopoly'. A spate of prohibitions against selling *tüfek* to the subject population was the result, together with much-advertised campaigns to collect those guns already in circulation.⁷⁴ However, these prohibitions were probably of limited effectiveness. Firstly, as noted, the Ottoman army employed irregulars needing to buy their own weaponry and secondly, handguns were quite easy to hide. Thus, in many regions, possessing not only swords and sabres, but firearms as well, became a significant part of male identity.

⁷⁰ Elgood, *passim*.

⁷¹ *Ibid.*: 72–89.

⁷² Ágoston, 'Firearms and Military Adaptation: The Ottomans and the European Military Revolution, 1450–1800': 106.

⁷³ Habib, *A People's History of India*.

⁷⁴ Inalcik, 'The Socio-political Effects of the Diffusion of Firearms'.

Conclusion

When compared to the polities of mediaeval Europe, the Ottoman administration of the late 1400s and especially the 1500s certainly seemed a model of centralism. This aspect has fascinated historians of the twentieth—and even of the twenty-first—century, because they often continue regard centralisation as the hallmark of the modern state. While a few pioneering scholars, particularly Rifa’at Abou-El-Haj, have emphasised the marked difference between ‘early modern’ and ‘modern’ centralisation, historians should take this difference more seriously than they have done to date.⁷⁵ Certainly, Ottoman documents encourage scholars to emphasise centralism, as they focus on the undertakings of the central administration and leave in the shadow the activities of less powerful figures, including merchants and artisans. At an earlier stage of research, it was common for historians to simply follow wherever their documents led them; and researchers with little knowledge of the historiography will adhere to this custom to the present day.

However, scholars with—hopefully—a greater degree of sophistication will formulate their own questions which at first glance cannot be answered by the documentation at hand. However, the latter sometimes provides clues to the informed reader. Put differently, it is important to focus on things that the authors of the texts at issue say in passing, but that the reader will miss if he/she does not approach the sources with pre-formulated questions in mind. My present search for the role of more or less independent artisans in the functioning of large centralised workshops is a modest attempt in this direction. I have also tried to highlight the role of such craftsmen (or in the case of the silk manufactures: craftspeople) in the complicated operation of supplying the palace with luxury goods.

For we still know very little about the entrepreneurs who might, voluntarily or not, contract to deliver semi-finished materials such as gold thread, silk yarns ready for weaving, but also hewn stones, bricks or faience tiles. Archival documents typically mention entrepreneurial artisans only if something went wrong. However, centralised worksites could not have functioned without these more or less independent producers. An example may prove the point: when from the 1600s onwards, independent kiln owners and faience masters found that official patronage had decreased and/or the

⁷⁵ Abou-El-Haj, *Formation of the Ottoman State*: 5–18.

government had limited their access to the market, many of them quite simply left the business. Sultans and viziers wishing to ornament high-profile mosque complexes could not change this situation; and they coped with it as best they could, often reusing older tiles. It would be most illuminating if one day, we were to find a source discussing how eighteenth-century personages actually felt about the reuse of artwork from a bygone age.

Furthermore, the roles of middlemen on different levels of society need further study as well. We may assume that modest silk weavers or tile manufacturers did not have direct access to the patrons that might order their work. Julian Raby has suggested that some of these middlemen, ordered to procure large quantities of decorated tiles, filled their storehouses with items in a more or less standardised stylistic idiom.⁷⁶ These middlemen/faience traders certainly helped diffuse the work of the İznik potters; however, at the same time, their demand for standardised decoration stifled the initiative of the manufacturers. We know very little about the role of such middlemen in other types of luxury production.

With respect to high-quality goods intended for the elite, twentieth- and twenty-first-century historians have argued, and continue to argue, about the models for the novelties that eighteenth-century Ottoman patrons, architects and practitioners of the decorative arts may have adopted or else rejected. In all probability, the availability—or otherwise—of small and poorly documented workshops capable of fulfilling the patrons' orders had a significant share in determining the choices of these high-level figures.

To show up the limits of our knowledge, we end this account with an at least partly unresolved question, dealing with the production of cannons and other armaments. On the one hand, Mehmet Genç has pointed out that the demands of eighteenth-century warfare fell most heavily on the more prosperous workshops.⁷⁷ Officials must have found it easier to make demands on a few large entrepreneurs than on a multitude of small ones; and they could justify this procedure by the need to protect the poor, always a potent element in any legitimising discourse.

As a result, lack of capital, a case for concern already in peacetime, became dire during and after the Russo-Ottoman war of 1768–74. Admittedly even before this confrontation, food and money to pay the

⁷⁶ Atasoy and Raby, *Iznik: The Pottery of Ottoman Turkey*: 287.

⁷⁷ Genç, 'Osmanlı Ekonomisi ve Savaş'; Genç, 'L'économie ottomane et la guerre au XVIIIème siècle'.

Ottoman soldiery was sometimes erratic. On the other hand, before about 1750, the sultans' military machine was still well ahead of the Russians in the supply sector, including both armaments and foodstuffs.

Technology thus was not at issue; and production continued both in centralised and in decentralised workshops. A noted authority on eighteenth- and nineteenth-century warfare has thus opined that the Ottoman defeat had nothing to do with the productive sector, but resulted from a reliance on army corps that were virtually militias and unable to withstand the massed artillery fire characteristic of warfare after 1750.⁷⁸ Later in the eighteenth century, the Ottoman supply system collapsed as well, but only after having held out for quite some time.⁷⁹ Therefore, many producers in the sultans' realm must have remained active in spite of the difficulties analysed by Mehmet Genç. At the present stage, I have no answer to this contradiction; and we must hope for the results of future research.

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⁷⁸ Aksan, *Ottoman Wars 1700–1870*: 134, 158, 169.

⁷⁹ *Ibid.*: 158.

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