

ENLIGHTENING THE OTTOMANS: TOTT & MUSTAFA III

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The Ottoman military reforms which began with Mustafa III (1757-1774) and ended in the elimination of the Janissaries in 1826 by Mahmud II (1807-1839) represented a complete overhaul of a cultural system in the same amount of time as, even less than, the reforms of Peter the Great and Catherine II of Russia, to cite another example. In trying to write a narrative of the military history of the period, I have been forcibly struck by the inadequacy of representation of the process of reform in the histories of the era. Obviously that has to do with perceptions of reasons for success and failure on the battlefield, but it also has to do with certain assumptions about the role of culture, more particularly religion, in the military context, and about the sources we choose to use as historians as evidence in describing complex processes of societal reorganization.

Our information concerning eighteenth century Ottoman military organization is drawn largely from foreign observers, from travellers to military adventurers such as Baron François de Tott (1733-93), the Hungarian/French diplomat and technical advisor to Mustafa III and Abdülhamid I (1774-89). Tott's *Memoirs*, published in both French (1784-85) and English (1785), were an immediate European best-seller, one of the books which influenced Talleyrand to promote Napoleon's invasion of Egypt.¹ Scholarly work pursued since that time on

¹Henry Laurens, *Les origines intellectuelles de l'expédition d'Égypte: L'orientalisme Islamisant en France (1698-1798)* (Istanbul, 1987), particularly chapter 11. The *Memoirs* had a long publishing history: A four volume edition was published in French in Amsterdam in 1784-5 (*Mémoires de baron de Tott sur les Turcs et les tartares*); a second French edition appeared in 1786, with a critique by Louis Charles de Peyssonnel (1727-90) called *Lettre de M. Peyssonnel* included. Two English editions by two different publishers appeared in London in 1785 (Jarvis and Robinson - The Robinson version, reprinted by Arno Press in New York in 1973, is the edition cited here). The Robinson version was published in a second edition in 1786, with the English version of Peyssonnel's criticism as an appendix. The *Memoirs* also appeared in Dublin in 3 volumes in 1785, and in a German translation in Frankfurt, in 2 volumes, in 1787-8. It was reviewed in the *Mercur de France*, v. 127 (Dec. 1784), 152-79 by M. Mallet du Pan; the *Journal encyclopédique* published extracts and a review in Jan.-Feb. 1785, i, 239-56; 418-39 and ii, 62-74, and comments on the *Lettre de M. Payssonnel* in Oct. 1785, vii, 73-9. The English reception appeared in *Gentleman's Magazine* 55 (1785), 372-4, with extracts, 632-6. Peyssonnel also made it into the English press, in *Gentleman's Magazine* 56 (1786), 411. For more on Peyssonnel, see below. His *Lettre* was also published separately as *An Appendix to the Memoirs of Baron de Tott*, London, T. Hookham, 1786 (used here). For further on Tott's missions, see *Recueil des instructions données aux ambassadeurs et ministres de France depuis les traités de Westphalie jusqu'à la révolution française*, vol. 29, Turkey. (Paris, 1969), 422-26. For Tott's biography, see *Archives biographiques françaises*, (microfiche 994, nos. 145-61) for a number of obituaries, the most complete by H. R. J., Duthilloeul, *Galerie douaisienne*, 1844; also, *Nouveau Larousse illustré*, (Paris, 18--?), vol. 7, 328. Both note that he was made *maréchal de camp* in 1781, and commander of Douai after 1786, but the revolution caught him as others, and he sought refuge in Hungary, where he died in 1793.

Ottoman military reform has relied almost exclusively on Tott's observations, in spite of the availability of other sources, some of which I will discuss in this paper. Recently, interest in Tott has revived, with the result that we now have a rich archive of published information both in English and Turkish on the activities of Tott as part of the French military mission in the empire.²

I propose to discuss the *Memoirs* of François de Tott as an enlightenment text and a historical source, and to offer some alternative ways of addressing military information systems, or, more precisely, the nature of the transfer of "technology" among disparate cultures. In writing the military history of the latter-day Ottomans, I confront Tott again and again because the fame and authority of his work in his own era still convinces present-day historians of its authenticity. As Berkes notes sarcastically:

It is not difficult to find between the lines of De Tott's reminiscences that intricate and melodramatic struggle which was to become the touchstone of subsequent Western literature on the Ottoman Empire. The Davids and Goliaths of De Tott's accounts bear but little resemblance to their prototypes; the "good" men are those whose loyalty to the medieval economic ethics makes them fair game for exploitation, or whose admiration for Western achievements make them useful subjects for the abracadabra suggestions of a French spy; the "bad" men are those "ignorant and prejudiced fools" who, for all their stupidity, managed to catch De Tott virtually in the act of seditious espionage.³

Tott's anecdotes concerning his attempts to reform the Janissary artillery corps, in particular, have rarely been effectively examined. Now that more sufficient information is accessible concerning the technical aspects of the French-

²Auguste Boppe, "La France et la 'militaire turc' en XVIIIe siècle," *Feuilles d'histoire* (1912) 386-402, 490-501 was the seminal article on the French technical missions to the Ottomans in the latter half of the eighteenth century. Many of his assertions have been verified in the last decade by several, independent studies in Hungary, France and Turkey: Mustafa Kaçar, "Osmanlı İmparatorluğu'nda Askerî Teknik Eğitimde Modernleşme Çalışmaları ve Mühendishanelerin Kuruluşu (1808'e Kadar)," *Osmanlı Bilimi Araştırmaları* [III] (1998), 69-137, which includes a number of Ottoman reform documents in facsimile and transliteration. His work relies heavily on the French diplomatic archives, also used in Frédéric Hitzel's *Relations interculturelles et scientifiques entre l'Empire ottoman et les pays de l'Europe occidentale 1453-1839*, PhD 1995 (Université Paris-Sorbonne), but especially his *Le Role des militaires française à Constantinople (1784-1798)* MA 1987 (Université de Paris-Sorbonne). I have not had access to either of these unpublished theses, but Kaçar has, making his article well-worth reading. Ferenc Toth, studying the Hungarian and French parts of Tott's life, has published on Tott and Voltaire, including some correspondence between the two: "Voltaire et un diplomate française d'origine hongroise en Orient," *Cahiers d'études hongroises* 7 (1995), 78-86. His research has verified that Tott's assignment, after his return to France, was to assess the possibility of an invasion of Egypt, twenty years before Napoleon actually did so (p. 81). Not to be forgotten is Kemal Beydilli's massive and exhaustive study of the School of Engineering itself (Mühendishane), an essential part of the French mission: *Türk Bilim ve Matbaacılık Tarihinde Mühendishane, Mühendishane Matbaası ve Kütüphaneleri 1776-1806* (İstanbul, 1995).

³Niyazi Berkes, *The Development of Secularism in Turkey* (Montreal, 1964), 68-9. He exaggerates perhaps.

Ottoman collaboration, it behooves us to seek further explanations for the Ottoman failure to keep pace, as a framework for the discussion of eighteenth century Ottoman military reform, and in order to go beyond the oft-repeated Oriental stereotypes. Evidence drawn from the Prime Minister's Archives in Istanbul, from Ottoman chronicles, and from Russian and other contemporary European observers besides Tott, supports the supposition that the maintenance and renewal of the artillery corps and its weaponry were an ongoing part of a general Ottoman understanding of the role of artillery on the eighteenth century battlefield. An openness to adaptation of new weapons, intrinsic to military success, is just as apparent in the Ottoman military context as elsewhere. Cultural stances such as those of Tott, however, imbued with enlightenment thought, were incapable of recognizing that Ottoman hostility to change was intimately bound up with structures of power within the capital and the political dynamics of state formation, within which the evocation of Islam served as the public context of the debate. Thus, a historiography based on such works, which equates European technicalism and rationality with progress and state formation, has left little room for discussing the role played by indigenous reformers who understood the necessity of importing, or manufacturing what they saw as distinct military techniques, but who wished to maintain a cultural system from which they benefited, and only belatedly recognized the social costs of adoption of western-style military systems.⁴

Military adventurers and advisors to the Ottomans abounded in the late eighteenth century, partly because, after almost three decades of European and continental wars, the western powers had made peace. Men like the Hungarian Totts, father and son, found employment in foreign lands, selling their diplomatic and military expertise to the courts of Europe. Tott's service to the Ottomans began in 1770, but his experience of the Middle East was already lengthy. His father was a Brigadier in the French army, who spoke French, Turkish, and Polish, as well as Hungarian. He served as an advisor to French Ambassador Vergennes at the embassy in Istanbul in the 1730s and 1740s, when he was accompanied by his son, our Tott, who was to serve as a French consul in Ottoman territories in the 1760s and 1770s. Tott the younger's memoirs begin in 1767, when he left Paris for the Crimea. His connection to Mustafa III began in 1770, as an advisor on the project to rebuild and rearm the Dardanelles fortresses after the defeat of the Ottoman navy by the Russians at Çeşme, and continued for

⁴This is the main idea behind David B. Ralston's *Importing the European Army: The Introduction of European Military Techniques and Institutions into the Extra-European World, 1600-1914* (Chicago, 1996). Chapters 3 and 4 deal with the late Ottoman and Egyptian military reform contexts.

the next five years. Thereafter, Tott travelled all over the Middle East, on behalf of the French government, observing the political and economic life of Cairo, Aleppo, Thessalonica, and Tunis, among other places, before returning to France, and writing his *Memoirs*.

Tott's arguments about Ottoman intransigence, religious obscurantism, and general obtuseness concerning military change have remained mostly unchallenged for their accuracy.⁵ This is what he has to say about the Ottoman artillerymen of the period:

To the haughty ignorance of the generals was added the stupid presumption of the subalterns; and the Turks, who took the field with a prodigious train of artillery, but which consisted of pieces ill mounted, and full as badly served, slaughtered in every action by the cannon of their enemies, could only avenge themselves for their disasters by accusing the Russians of cowardly artifice. They overpower us, said they, by the superiority of their fire, which, in fact, it is impossible to approach; but let them leave their abominable batteries, and encounter us like brave men hand to hand, and we shall soon see whether these infidels can resist the slaughtering sabre of the true-believers. This multitude of wretched fanatics even reproached the Russians for having attacked them during the holy season of Ramadan.⁶

Tott organized and trained a number of artillerymen in Istanbul between 1770-72, at the same time that he was involved with efforts to improve the casting of cannons in the foundry, insinuating that the Ottomans were using an iron-making furnace process to cast brass cannon.⁷ He knew very little about such

⁵Even among Ottoman historians, egregious examples abound: "In fact, the isolation of the Ottoman ruling class from Europe, its inherent conservatism and pride, its scorn of all things infidel, its continued worship of everything that had brought the Ottomans greatness in the past, prevented it from accepting the new weapons." (Stanford Shaw, *Between Old and New: The Ottoman Empire Under Sultan Selim III 1789-1807* (Cambridge, 1971), 139.) Many have examined the influence of foreign and non-Muslim expertise on the transfer of military technology in the sixteenth and seventeenth centuries, specifically in the casting and firing of weapons. The eighteenth century remains fairly uncharted territory, chiefly because of the omnipresent explanations derived from Tott's text. Still, we lack a basic history of the Janissary Artillery Corps based on the Ottoman archives. See Gábor Ágoston, "Ottoman Artillery and European Military Technology in the Fifteenth and Seventeenth Centuries," *Acta Orientalia Academiae Scientiarum Hungaricae* 47 (1994) 15-48; and "Gunpowder for the Sultan's Army: New Sources on the Supply of Gunpowder to the Ottoman Army in the Hungarian Campaigns of the Sixteenth and Seventeenth Centuries," *Turcica* 25 (1993) 75-96; Rhoads Murphey, "The Ottoman Attitude Towards the Adoption of Western Technology: the Role of the Efreni Technicians in Civil and Military Applications," in *Contributions à l'histoire économique et sociale de l'empire ottoman*, Jean-Louis Bacqué-Grammont and Paul Dumont, eds. (Leuven, 1983), 287-97.

⁶Tott, v. 2, pt. 3, 9-10. He goes on to say that Mustafa III asked him about the different types of ordnance the Europeans were using, so "I sent that prince the *Memoirs* of Saint Remy; he could only examine the plates, and these he had carried after him, when he went abroad, by one of his attendants." He refers to the "Bible" of the artillery corps, S. de St. Rémy, *Memorial de l'Artillerie*, 2 vols. (Paris, 1693; Amsterdam, 1702)

⁷Tott, v. 2, pt. 3, 114, on the "ignorance of the Turks" of casting and foundry.

matters, judging from his own comments: "I had never seen any foundry and my taste for the arts, which I had always made my amusement, had never led me to attempt what could amuse nobody." In another place, he noted: "The *Memoirs* of Saint Remi [sic] and the *Encyclopédie* were my constant guides." He was successful at last, "... casting 20 pieces of cannon, with a success which surprized and enchanted the Turks ... and astonished nobody so much as myself."⁸

From the vantage point of two hundred years, the archness of the narrative seems obvious, but few of his contemporaries wondered at the accuracy of Tott's description. In the sole critique of the *Memoirs*, that of Louis Charles de Peyssonnel, himself a French appointed consul in the Crimea and then in Smyrna/Izmir in the same period, later author of an important treatise on Black Sea commerce, Tott is reproached for misrepresenting the case. On these very passages, Peyssonnel commented:

The Turks have no iron cannon, and do not know how to make them, or disdain to; all their artillery is of brass ... if some pieces of iron are found in their places of war, and merchantmen, they have been taken from the enemy...It is as much more surprising that in their foundries they should have only furnaces particularly appropriate to the casting of iron, as a prodigious number of brass pieces have been brought, and come every day from their foundry at Tophana, at Constantinople, of middling, large and enormous bores, very fine, very good, and long since brought to perfection, after the proportions and models of the European artillery. Rows of them have been continually seen all along the flat of Tophana, often two and three deep, and these sometimes of double and treble ranks; and one cannot, without injustice, accuse the Ottomans of a total ignorance in the art of founding cannon.⁹

Peyssonnel was sceptical enough here as to wonder if Tott could be the author: "I cannot believe it to be throughout, such as it is published, by Baron de Tott, because there are faults that could not have been committed by a man of his education and parts."¹⁰

⁸Tott, v. 2, pt. 3, 116-9.

⁹He added: "It is difficult even to conceive how they have been able to succeed to make so fine an artillery, with furnaces that it would be impracticable to use in making small field pieces, which they have neglected to attempt, and with which Baron de Tott was desirous of furnishing them." (*Appendix*, 118-21). Peyssonnel was a diplomat and orientalist of equal or greater standing than Tott, author of several works on the ethnography and trade of the Black Sea. To Tott's contempt for the supposed complete lack of architects, masons, stone-cutters, blacksmiths and locksmiths among the Turks (Tott, v.2, pt. 3, 118), Peyssonnel countered: "...[Let] us invoke the august shades of the emperors Selim, Soliman, Bajazet, Achmet, Mahmud, who have left superb mosques, *Khans*, *Bezestins*, and several other monuments of their grandeur and magnificence. All these Princes certainly never sent to Europe for any one to come and build those noble edifices: they have all been raised by architects and workmen of the country." (221)

¹⁰Peyssonnel, *Appendix*, 3.

Why were the *Memoirs* such a best seller? One biographical entry from the 1850s on Tott reflects that its success was due to the "abundance and novelty of the notions and opinions that he presented about the history, customs and institutions of the Turks." Tott's *Memoirs* preceded other narratives such as Anquetil-Duperron, Savary and Volney, and "...while rightly accused by contemporaries of charlatanism, should be credited with dispelling with exactitude ...and often with impartiality" the European myths concerning the Ottoman Empire.¹¹ Other reviews at the time of its publication were less sanguine about impartiality: " ...in these Memoirs of his transactions, [Tott] has given many melancholy instances of the ignorance, cowardice, tyranny, injustice, and supineness of the Turks, as well as many striking proofs of the unlimited confidence reposed in him by his employers"¹²

Here is an example. Tott describes a demonstration of 50 gunners Tott organized and trained at Kağıthane (on the Golden Horn) in front of the sultan and 10,000 spectators. The artillerymen were able to achieve a discharge of 5 rounds a minute, after which the following exchange took place: the *Defterdar* (Chief Financial Officer) asked Tott what the rammers were made of? (The Baron recognized a set-up). He replied: "Hair." The *Defterdar* then asked "What sort of hair?" to which Tott answered "Pig's hair." This response engendered a huge cry from the crowd: "God forbid!" Tott then bested his audience by asking a painter in the crowd what they used to paint the mosques, which of course was pig bristles, which left hair on the walls. "If then bristles do not defile your mosques, it cannot surely be improper to make use of them against your enemies!" The multitude exclaimed "Praise be to God!"¹³ Surely another reason for the popularity of the *Memoirs* was its entertainment value. It is full of such anecdotes, which generally credit Tott and discredit his interlocutors. As Larry Wolff recently reminded us, the *Travels and Surprising Adventures of Baron Munchausen*, the fictional version of a Tott-style figure, was published by Rudolf Erich Raspe in the very same year as Tott's *Memoirs*.¹⁴ Nor should it come as a surprise that the only full

autobiography of another French military advisor to the Ottomans, the Comte de Bonneval (Humbaracı Ahmed Paşa, 1675-1747), credited with rebuilding the Ottoman Mortar Corps, is a fiction, anonymously published in 1750.¹⁵ Might Tott have considered such models in constructing his version?

Other sources of information on Ottoman artillery of the period, some documentary, some anecdotal, need further mining. Sadullah Enverî, battlefront bureaucrat and chronicler, on campaign with the grand vizier south of the Danube in 1772, has a revealing story to tell about the discipline and training of Ottoman gunners during the extended truce in the middle of the Russo-Ottoman War 1768-1774. Disorder and confusion had led to a loss of control over the number and experts of the artillery over the previous two years. Grand Vizier Muhsinzade Mehmed, concerned about this, organized a review. He and other high officials observed the firing of the cannon. Numerous cannon were fired three to four times, with ill processed gunpowder and ill mounted guns. During the whole exercise, the *Topçubaşı* was covered with shame, and the gunners themselves were quaking in fear. On the fourth try, they hit the target, and were suitably rewarded by the grand vizier. Mehmed Muhsinzade ordered daily practice as the norm, and continued to supervise it himself now and then. By Enverî's reckoning, the gunners became proficient, and the regiment flourished. The men were incited on a daily basis to learn the rules of rapid-fire target and mortar fire. With endless encouragement, masters (*usta* - the expert gunner) emerged from ignorant novices in all classes.¹⁶ Enverî makes no mention of either Tott or the new cannons he produced, which reputedly were sent to the battlefield early in 1774. Following the final defeat of the 1768-74 Russo-Ottoman War at Kozluca, in July 1774, a Russian despatch noted the capture of 32 pieces of brass cannon, "all founded under the inspection of Mr. Tott."¹⁷

¹¹ *Archives biographiques françaises II*, (New Providence, N. J.: 1993-), fiche no. 994, 159. The author refers to A. H. Anquetil-Duperron, *Législation orientale* (Amsterdam, 1788); Savary, linguist, and author of numerous works, and C. F. C. Volney, *ideologue*, and in this context, author of *Considérations sur la guerre des Russes et des Turcs* (London, 1788), three of the great French orientalis of the late eighteenth and early nineteenth centuries. Summary translation of text is mine.

¹² *Gentleman's Magazine* 55 (1785), 373.

¹³ Tott, v. 2, pt. 3, 85-90.

¹⁴ Larry Wolff, *Inventing Eastern Europe: The Map of Civilization on the Mind of the Enlightenment* (Stanford, California: 1994), 359 and elsewhere. The snide comments could equally be driven by Tott's own sense of failure at the Ottoman court. (Idea suggested to me by Ferenc Toth in correspondence.)

¹⁵ *Memoirs of the Bashew Count Bonneval, From his Birth to His Death: Shewing the Motives Which induced him to Quit the Service and Dominions of France ...* (London: Printed for E. Withers, 1750); also published in French. It was part of the large publishing industry in Europe at the time of "spy novels," "secret histories," etc., in which facts and fiction were practically inseparable.

¹⁶ Sadullah Enverî, *Tarih*, Istanbul University Ms T 5994, copied in 1780, covering the years 1768-1774, folios 271 and following.

¹⁷ "Diplomaticheskaja perepiska angliiskikh poslov i poslannikov pri russkom dvorie," *Sbornik Imperatorskago Russkago Istoricheskago Obshchestva*, v. 19, 419, correspondence from Sir Robert Gunning in St. Petersburg to the Earl of Suffolk. Tott's version: v. 2, pt. 3, 97, goes as follows: Mustafa III was pleased with the results of his efforts, and ordered 50 gunners and 50 four pound cannons sent to the battlefield, but Tott adds, in disgust, that the cannon were sent with rammers but without carriages, and were ultimately abandoned in the sand at Varna on the Black Sea.

Documentary evidence indicates that experimentation with training as well as casting had continued throughout 1772 and 1773, during which time Mustafa III expressed a second desire for a new Corps of Rapid-Fire Artillerymen,¹⁸ which now acquired the name of *Sür'atçis*, reflected in the official order for its establishment issued in January, 1774.¹⁹ The order includes 11 articles and an explanatory note worth summarizing: "Even though the imperial arsenal is known for its perfection in the arts of war," it began, "...in recent times, other states have invented and developed small, well crafted cannon capable of rapid fire, reaching an understanding of the science through experimentation.... The Ottoman state likewise wishes to organize a company of rapid-fire artillerymen, and is issuing this imperial order to that effect...."²⁰

The eleven articles describe the organization of the troops and their officers, and the amount of the pay, but also mandate the issuing of distinct uniforms, incorporate language about the inspections of arms and uniforms, daily roll calls, and patrol and guard duty. Tott notes in his *Memoirs* that he received the blessing of the religious officials, encouraged payment of salaries on time, tried to argue the rationalization of punishment, and "inspir[e] a sense of honour, which no soldier ought to be without, though even the word is unknown to the Turkish language."²¹ The *Sür'atçis* were reorganized immediately after the war, in January 1775, under the leadership of Seyyid Mehmed Emin Agha, again on the advice of Tott, this time with 10 guns and eighty soldiers and officers.²² Tott left Istanbul in early March, 1775, but this particular corps continued in that form until September of 1776.²³

¹⁸Documents reviewed in the Cevdet Askeriye collection of the Prime Minister's Archives in Istanbul include: CA 30301, November 1772, an order for gunpowder for the drill of cannons; CA 15612, March 1773, 50 *sür'atçis* ordered to the battlefield, with supplies; CA 29732 May 1773, a request for supplies for 110 artillerymen remaining in Istanbul; CA 20344, July 1773, a requisition for the monthly rations money for 50 *sür'atçis*, the preceding sample representing only the tip of the iceberg. Tott's narration of this second initiative begins on v. 2, pt. 3, 136.

¹⁹Text included in an account book devoted to this corps, Maliyeden Müdevver Collection (MM) 4844, pp. 8-9; French translation in Boppe, 391-3. Tott notes that Mustafa III had already spent 25,000,000 sterling (*kuruş*) on the war, and came up with 12,500 *kuruş* for the new troops only with difficulty. (v. 2, pt. 3, 136). As estimates about annual expenditures consider 15,000,000 *kuruş* an average before and after the war, this seems about right.

²⁰MM 4844, 9. The Ottoman document and its transliteration is included in Kaçar's article, along with a description of the Rapid-Fire Artillery Corps, 78-81.

²¹Tott, v. 2, pt. 3, 136-43. Honor exists in at least two Ottoman words, *nam* and *şeref*, both in use in the eighteenth century.

²²MM 4844, 33-7.

²³Boppe, 396.

Tott held various other consular posts in the Middle East, but never served the Ottoman government again. A short piece of gossip in *The Gentleman's Magazine* of 1786 begins by informing its readers that Baron de Tott has been committed to the Bastille, "where it is in general believed he will be made a sacrifice, notwithstanding his great interest at Court, to the resentment of the Porte," reflects some of the suspicion which must have confronted Tott upon his return to France. Such individuals were undoubtedly compromised by service to two masters. The same *Gentleman's Magazine* notice goes on to say that as consul in the East, Tott had been rather foolish, "... well paid by both French and Turks," and that perhaps he "... fell between two stools." "Instead of paying attention to the French commerce, it is said, he was more deeply engaged in making his court to a Greek lady, married to a very unfortunate but very honest Frenchman," none other than his fellow diplomat, Peyssonnel, who "was the victim of the Baron de Tott, to please his mistress."²⁴ The last word belongs to Voltaire, who made mention of Tott several times in his voluminous correspondence with Catherine the Great: in 1773, he warned Catherine "... that if the Ottomans were not driven from Europe now, de Tott ... would fortify them for the future. I am a little afflicted, as a Frenchman, to hear that there is a chevalier de Tott who is fortifying the Dardanelles." Voltaire elsewhere dubbed him "Protector of Moustapha and the Koran."²⁵

Artillery reform continued without Tott, under Selim III, beginning in March 1793, following the even more disastrous campaigns of the second Russo-Ottoman War of 1787-92. By 1806, the number of artillerymen stood at 4,910.²⁶ Selim III's reforms are well-known and need not be detailed here.²⁷ Of the reform treatises submitted to Selim III, one acknowledged Tott's service, recommended the further use of advisors and the reorganization of rapid-fire regimental cannon corps.²⁸

²⁴*Gentleman's Magazine*, v. 56, pt. 2, 704. While the events remain mysterious, they evoke a possible reason for the animosity between the two men. How often the narratives of history are so much more satisfying than any stories we can concoct!

²⁵Larry Wolff, *Inventing Eastern Europe: The Map of Civilization on the Mind of the Enlightenment*. (Stanford, California: 1994), p. 218.

²⁶This phase is extensively discussed by Shaw, 122-7, although he apparently did not have access to MM 4844. The new organization is described in Mahmud Raif Efendi, *Osmanlı İmparatorluğu'nda Yeni Nizamların Cedveli* (Istanbul, n.d.) which includes a facsimile of the original French edition (*Tableau de nouveaux reglemens de l'empire ottoman*) published in Istanbul in 1798.

²⁷Especially in Shaw, *Between Old and New*, but also Enver Ziya Karal, *Selim III'ün Hattı Hümayunları: Nizamı Cedit 1789-1807 2. baskı* (Ankara, 1988). It was first published in 1946.

²⁸E. Z. Karal, "Nizam-ı Cedid-e Dâir Lâyihalar," *Tarih Vesikaları* I (1941/42), 419, from the recommendations of Abdullah Molla Efendi.

Juchereau de Saint-Denys, military observer of the 1807-8 revolutions which brought down Selim III, traced the development of the Ottoman artillery from Tott to his own day, noting that while field artillery and rapid-fire discipline had been inaugurated in the Ottoman forces by Tott, it was under Selim III that the manufacture of small calibre cannons (4, 8, and 12 bore) became a regular part of the arsenal. Further, Saint Denys notes that in adopting new styles, the Ottomans were not slavish in imitating only the French models, but incorporated both Russian and Austrian versions when they saw their advantages on the battlefield.²⁹ It should be remembered that when Mahmud II moved against the Janissaries resisting his reforms in 1826, it was the artillery corps which remained loyal and helped him to eliminate the final obstacle to the creation of his modernized army.³⁰

Writing around a resilient set of stereotypes, like those constructed from Tott and his contemporaries, especially the one which blames religious obscurantism for the lack of innovation, has proved difficult, and brings me to propose different ways to take up the question of military reform in the Ottoman context. One way is simply to fill in the blanks, as I have illustrated here, with some counter-narratives. While the evidence often proves fragmentary, significant amounts of surviving eighteenth century texts remained underutilized. A second approach would consider the nature of evolving social contexts, and re-examine the tired "who stood to lose" question by turning it on its head and asking "who stood to gain" by the perpetuation of an outmoded system. I think the "Ottoman identities" debate among nineteenth century colleagues leads the way in that. It might surprise us how many there were, Muslim and non-Muslim alike.

A third approach might be to broaden the geographic range of analysis, by comparing neighbors of the Ottomans, such as the Russians and the Austrians. The world history industry, for example, which is currently thriving in the United States, has vigorously taken up the question of cultural exchange and technology transfer. This has challenged many to rewrite the narrative of military superiority as the *prima facie* cause of the success of the European maritime powers. The *Journal of World History* recently published a forum on "Military Affairs in the early Modern World," which included two articles, the first by William R.

²⁹ A. Juchereau de Saint-Denys, *Révolutions de Constantinople en 1807 et 1808*. 2 v. (Paris: 1819), v. 1, 66.

³⁰ By 1827, Mahmud II had increased the size of the force to 14,000 artillerymen, and 4,414 cannon-wagoneers, and they continued to be the most modernized of the Ottoman services. Stanford J. Shaw, *History of the Ottoman Empire and Modern Turkey* 2 v. (Cambridge, 1976-77) v. 2, with Ezel Kural Shaw, 25. The lurid tale of the end of the Janissaries by Godfrey Goodwin in *The Janissaries* (London, 1994), 213-33, is to be used with caution.

Thompson, who argued for broadening the debate beyond the issue of military prowess, to include "... the relative vulnerability of the targets of expansion; the interrelated need for local allies to make military victories on land possible, and the evolution of a global political economy."³¹ I have myself considered similar ideas elsewhere, arguing that frontier strategies (vulnerability), changing religious allegiances (local alliances), and logistics were just as important, if not more so, in the Ottoman-European confrontations, as the transfer of technology.³² The Ottomans, after all, held their own on the battlefields in eastern Europe until 1740.

In the second of two articles in the *Journal of World History*, Jonathan Grant has rewritten the history of the Ottoman domestic arms industry arguing that it remained competitive until 1740, and was reinvigorated at the end of the century by Selim III's investment in modernization with a team of foreign advisors. He bolsters his argument by locating Ottoman production on an international hierarchy, the so-called three-tier theory of military technology diffusion, first tier countries being the innovators; second tier, those who adapt, and third-tier countries who adapt, reproduce, but "...do not capture the underlying process of innovation or adaptation."³³ Such a hierarchy sounds suspiciously like a substitute for "first" and "third" worlds, but Grant's article is well worth exploring in spite of that limitation.

Scientists turned world historians, such as Arnold Pacey, offer yet another approach to the question of military technology diffusion. Pacey describes technology transfers as "interactions" between cultures "...like a conversation in which incomplete information sparks new ideas and what we can call 'responsive inventions'". Sometimes it is like a dialogue or dialectic in which recipients of a new body of knowledge and technique 'interrogate' it on the basis of their own experience and knowledge of local conditions. In these instances, the initial 'transfer of technology' itself is only the first stage in a larger process."³⁴ Such an approach acknowledges the resilience of cultural systems, and the way in which "change" and "innovation" occurs in the interplay between military technology and the political evolution of a particular environment.

³¹ "The Military Superiority Thesis and the Ascendancy of Western Eurasia in the World System," *Journal of World History* 10 (1999), 144.

³² "Locating the Ottomans Among Early Modern Empires," *Journal of Early Modern History* 5 (1999).

³³ The theory belongs to Keith Krause, in his *Arms and the State: Patterns of Military Production and Trade* (Cambridge, 1992), as noted by Jonathan Grant, "Rethinking the Ottoman Decline: Military Technology Diffusion in the Ottoman Empire, Fifteenth to Eighteenth Centuries," *Journal of World History* 10 (1999), 181. It deals with the navy as well as the land forces of the empire.

³⁴ Arnold Pacey, *Technology of World Civilization* (Cambridge, 1990), vii-viii.

Their surveys point to shared Indian, Persian and Turkish use of brass cannons, at the center of the criticism of Tott by Peyssonnel mentioned earlier. Brass was cheaper to produce in this context than in Europe, because of techniques perfected in India, and therefore continued to be used into the eighteenth century across the span of the "gunpowder empires," a term now legitimated by its overuse in world history textbooks. In fact, Pacey examines the long evolution of bronze to brass and cast-iron guns, accounting for their adoption in some territories, while not in others, based on availability of resources and the period in which the transfer of technical expertise occurred. Turkish musket barrels and Damascene swords, often made from imported Indian steel, by a process Europeans could not reproduce until the early 1800s, are another example. Europeans sought the barrel of Asian guns, while the Ottomans and Mughals prized the mechanically produced parts of the European versions.³⁵ There is a generosity of spirit inherent in describing such a dialogue that acknowledges the potential of every society to contribute to the general technology-gene pool of human history.

To conclude, I offer these theoretical templates as alternative methods of addressing reform in the Ottoman military context, as a way out of the value-laden conundrum represented by Tott. I ought to point out that such recent histories of technology as I have sampled invariably mention the simple lack of information available in English from the Ottoman sources, particularly for this chaotic period of change. While that is less true then it was even ten years ago, it is still our charge.

³⁵Pacey, 71-80.