THE ARSENAL OF OTTOMAN MODERNITY: WORKERS, INDUSTRY, AND THE STATE IN LATE OTTOMAN ISTANBUL

A dissertation presented

By

Akin Sefer

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In partial fulfillment of the requirements for the degree of
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ABSTRACT OF DISSERTATION

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This dissertation analyzes the connections between modern-state formation, industrial capitalism, and class formation in the late Ottoman Empire, focusing on the Imperial Arsenal of the Ottoman navy, the largest military-industrial site in Ottoman Istanbul. Based mostly on research in the Ottoman and British archives, it argues that capitalist class formation characterized the history of Ottoman modernity in the long nineteenth century. I begin with an analysis of how domestic and global processes pushed the Ottoman government to reorganize the production process in the Imperial Arsenal. Attempts to bring labor under industrial discipline, first by restructuring the traditional sources of labor, and then by militarizing the entire labor force through the employment of naval conscripts, faced persistent resistance by both Muslim and Christian subjects of the Empire, which eventually curtailed these reforms. I then analyze the role of the Industrial Revolution and the increasing political and economic connections with Britain in the transformation of the Imperial Arsenal, through technology and labor transfer. Technological transformation, under the supervision of British engineers, brought the migration of large numbers of European workers, mostly consisting of British mechanics, to the Arsenal in the mid-nineteenth century. I discuss how the experiences of migrant workers and their contentious relations with the Ottoman government integrated them into the making of capitalist class relations in this period. In addition, I demonstrate how resistance against militarization and contentious relations between civilian workers and the Ottoman state pushed the latter to launch vocational schools in the Arsenal with the aim of creating an industrial working class out of the poor children in Istanbul, who would replace first foreign, then all civilian workers. In the final chapter, I discuss how the Arsenal became a “modern factory”, committed to (re)produce not only the capitalist relations of production but also state-society relations in line with the modernist ideals of the state elites to convert Ottoman subjects to industrial citizens in the Tanzimat Era.
To Bengü
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time, she has always been there with her never-ending love, encouragement, and support.

Dedicating this dissertation to her could hardly be enough to thank her for what she has done for us. Nedim Barış, our dear son who joined us at the time I began writing this dissertation two years ago, has been a constant source of joy and love, making me survive this process. I only hope he will forgive me for the time I had to spend away from him throughout this period.
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NOTES ON TRANSCRIPTION, TRANSLATION, DATES, AND ABBREVIATIONS

Quotes in Ottoman Turkish throughout the text are transcribed according to modern Turkish orthography, in line with the guidelines of the International Journal of Middle East Studies. I give the English translation of each quote in Turkish in the first appearance of it.

Since Ottoman official sources mostly used Hijri and/or Rumi calendars, I provide their Gregorian equivalents in parenthesis.

Below are the most frequently used abbreviations throughout the text. The Bibliography gives the entire list of abbreviations of all archival catalogues cited in footnotes.

BOA: Başbakanlık Osmanlı Arşivi
DMA: Deniz Müzesi Arşivi
Env: Envanter
FO: Foreign Office
HAT: Hatt-ı Humayun
MKT: Mektubi
TNA: The National Archives
A View of the Imperial Arsenal, Late Nineteenth Century

1 Library of Congress, Prints & Photographs Division, Abdulhamid II Collection, LC-USZ62-80984.
INTRODUCTION

“Let us therefore, in company with the owner of money and the owner of labour-power, leave this noisy sphere, where everything takes place on the surface and in full view of everyone, and follow them into the hidden abode of production, on whose threshold there hangs the notice 'No admittance except on business'. Here we shall see, not only how capital produces, but how capital is itself produced. The secret of profit-making must at last be laid bare.”

The Imperial Arsenal (Tersane-i Amire), the main shipyard of the Ottoman navy, was the heart of Ottoman industrial production since the sixteenth century. In the long nineteenth century, this “house of industry” became a microcosm of Ottoman modernity; that is, the Ottoman experiences of the ever-lasting processes of rapid change and transformation in politics, economy, society, and culture. This dissertation is an analysis of these experiences in this microcosm, with a specific focus on workers and their relations with the Ottoman state that employed them. Based on this analysis, it argues that the making of Ottoman modernity was interwoven with the making of a specific relationship between the Ottoman state and its subjects. I call the making of this relationship “class formation”, since this process was mainly, if not exclusively, defined by relations of production. I call it a “capitalist” process, since the motives, policies, interests, and actions, all of which characterized this relationship, were wrought by the

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3 The word “arsenal”, or “tersane” in Ottoman Turkish, is a variant of the Arabic original “dār al-ṣinā’a”, being almost exclusively used for shipyards. For the spread of the term to Turkish and Western languages after the 12th-13th centuries, see Henry &Renée Kahane and Andreas Tietze, The Lingua Franca in the Levant: Turkish Nautical Terms of Italian and Greek Origin (Urbana: University of Illinois, 1958), 429.
global processes that defined capitalism in the nineteenth century: modern state-formation and industrialization.

This dissertation reveals the transformation of class relations in the Imperial Arsenal in the context of the nineteenth-century formation of modern capitalism, with a focus on the impacts of modern state-formation and industrialization on class formation. Within the limits of this study, by modern capitalism I refer to a global historical process through which a) materials, technologies, labor, and products were increasingly commodified in parallel to the global expansion of market relations, b) production was reorganized with the main goal of making higher profits on a continuous basis, as funding the innovation and expansion of capital became central to capitalist competition, c) subjects or citizens, gained (collective and individual) rights that expanded their power “to make economic decisions in a relatively autonomous and decentralized way,” in this case, particularly regarding their involvement in the production process.4

Centralized states were increasingly embedded in modern capitalism through modern state formation, that is, the growth of the political and economic power of central authorities at the expense of local power-holders; the rationalization, institutionalization, and expansion of bureaucracies; and the increasing involvement of these states in the everyday life of their subjects by means of legal, economic, and socio-cultural policies and practices. Their increasing involvement and intervention in, and impact on the transformation of class relations made state-formation essential to the making of modern capitalism. At the same time, by means of industrialization, that is, the technological and economic transformation process triggered by the Industrial Revolution, production and the circulation of commodities grew exponentially on a

global scale, consolidating the capitalist mode of production. Throughout these processes, modern capitalism drastically transformed social relations along access to, and control over, the means of production, circulation and consumption of commodities.

The Ottoman state initiated comprehensive reforms to adapt to these global processes in the long nineteenth century. Major policies were introduced especially under the reign of Selim III (r.1789-1807), whose reform program, the “New Order” (Nizam-ı Djedid), aimed at the increasing centralization of state power in the military, the economy, and the bureaucracy. These reforms largely failed after Selim III was overthrown by the imperial guards (the Janissaries) in 1807. New attempts to introduce large-scale reforms had to wait for the abolition of the Janissaries in 1826, which paved the way for more fundamental steps to expand the control of the central authority. Thereafter, the Ottoman state elites initiated a new series of reforms, a process they called the “Tanzimat-ı Hayriye” (Auspicious Reorganization), within the context of internal and external threats in the second quarter of the nineteenth century. The Tanzimat was symbolized by the Sultan’s commitment to the rule of law, bureaucratic centralization, and the equality of Muslim and non-Muslim subjects by means of edicts issued in 1839 and 1856. In

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7 The abolition of the Janissaries in 1826 was a turning point not only for the reorganization of Ottoman military and bureaucracy but also in the history of the relations between urban working classes and the Ottoman state, since in parallel to the increasingly blurring lines between urban workers and the Janissaries, the latter had become the most organized (and powerful) group to represent the interests of urban working classes against the state by the nineteenth century. See Cemal Kafadar, “Janissaries and Other Riffraff of Ottoman Istanbul: Rebels without a Cause?,” *International journal of Turkish Studies* 13, no. 1-2 (2007); Mehmet Mert Sunar, “When Grocers, Porters, and Other Riff-Raff Become Soldiers” Janissary Artisans and Laborers in the Nineteenth Century Istanbul and Edirne,” *Kocaeli Üniversitesi Sosyal Bilimler Enstitüsü Dergisi* 17, no. 1 (2009); Donald Quataert, “Ottoman Workers and the State, 1826-1914,” in *Workers and Working Classes in the Middle East: Struggles, Histories, Historiographies*, ed. Zachary Lockman (Albany: SUNY Press, 1994).
addition to an increasing commitment to modern state-formation, this era also was marked by state-led efforts to establish several factories in order to adapt to the Industrial Revolution, which started to expand from Britain to the rest of the world in this period.

These reforms had an immediate imprint on production and labor in the Imperial Arsenal, which employed thousands of workers, during this period. On the one hand, in the face of growing problems with their access to capital and labor, naval elites attempted to create a regular, skilled, disciplined, and profitable labor force in the Arsenal, first by reorganizing the labor force during the New Order, and then by attempting to militarize the labor force through the modern conscription system, introduced and systematized as part of the Tanzimat reforms. At the same time, in parallel to militarization efforts, state elites began transforming production, in order to adapt to the growing dominance of steamships and iron-shipbuilding in the age of industrialization. Particularly after the Crimean War (1853-56), which was marked by the military alliance between the Ottomans, Britain and France against Russia, the production processes in the Arsenal increasingly adapted to industrial capitalism by means of closer connections that brought British labor and technology, as well as loans, to the Ottoman Empire.

The capitalist transformation of naval production particularly intensified under the rule of Sultan Abdulaziz (r.1861-1876), who launched ambitious projects to create one of the largest navies in the world as soon as he came to power. Foreign loans were hardly enough to fund these projects, however. Therefore, within the context of the partial failure in the militarization of the labor force, growing discontent between civilian workers (including the British) and the Ottoman state, and the rise of urban poverty, naval elites took more radical steps to reorganize production and labor, alongside their increasing commitment to mechanization and ironclad construction. In

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8 For other state establishments that were either founded or mechanized during this period, see Edward C. Clark, "The Ottoman Industrial Revolution," *International Journal of Middle East Studies* 5, no. 1 (1974).
this period, the government integrated child labor into capitalist production by recruiting poor children to military-vocational classes in the Arsenal, which were launched to decrease the Arsenal’s dependence on first British, then all civilian workers in the production process. In addition, by means of several instructions and regulations, naval elites attempted to transform the Arsenal into a modern factory, where labor and production were hierarchically organized, from top to bottom, in a capitalist framework.

By the early 1870s, the Imperial Arsenal had become a modern industrial complex, consisting of several factories, workshops and shipbuilding yards. It employed thousands of workers, who were spatially and administratively organized in line with an increasingly complex division of labor. This labor force, though, was not as homogenous as had originally been envisioned by the state elites, reflecting the history of struggles around the organization of the labor force in the past decades. It included a wide spectrum of “regular workers”, which included naval conscripts, local and foreign wage workers, and children in both civilian and military status, all of whom would be complemented by workers with a more temporary status, including convicts.

Since I will focus exclusively on a military-industrial site, it is perhaps not surprising to see that Ottoman integration to these processes, within the scope of this site, was largely precipitated by naval competition-particularly against the Russians, in addition to other European powers. Indeed, in the eighteenth century, limited reforms following the naval disaster wielded by the Russians in 1770 were expanded and systematized only after the Ottomans were defeated again by the same power in 1792. The next wave of reforms was launched largely in response to the major disaster at Navarino against the allied fleets in 1827. These were compounded by threats within the Empire that also involved naval conflicts, such as the Greek War of Independence and the rebellion of the Egyptian governor Mehmed Ali Pasha in the 1820s and the
'30s. The burning of an Ottoman fleet by the Russians at the beginning of the Crimean War (1853-56), in addition to the successes of steam-powered fleets of Britain and France against Russia during the war, further convinced and pushed Ottoman elites to create a competitive navy by committing to industrialization and expanding the control of state power in the production process.

Workers and Historiographies

Ottoman and Middle Eastern studies of working class history, until very recently, have remained largely focused on workers’ collective action, labor movements, and political organizations. Since workers’ collective struggles and organizations became more visible in primary sources only in the late nineteenth and early twentieth centuries, historians’ focus was largely limited to this period. In the last two decades, in line with the larger trends in labor history on a global level, marked particularly by the influence of subaltern studies, historians shifted their attention to complicate this earlier historiography, by expanding their focus to social and cultural experiences of workers in the Middle East. As a result, they have studied workers’ history from

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10 For an influential study in this regard, see Dipesh Chakrabarty, Rethinking Working-Class History: Bengal, 1890-1940 (Princeton, N.J.: Princeton University Press, 1989). For examples of studies inspired by this approach, see Stephanie Cronin, ed. Subalterns and Social Protest: History from Below in the Middle East and North Africa (London; New York: Routledge, 2008).

11 For a collection in the 1990s that demonstrates this transition as well as the impacts of cultural studies on historians that had focused on movements and collective action, see Zachary Lockman, Workers and Working Classes in the Middle East: Struggles, Histories, Historiographies (Albany: State University of New York Press, 1994).
different perspectives, particularly emphasizing the importance of gender, ethnicity, religion, and migration in working class history. These recent efforts have begun to demonstrate the significance of workers’ experiences in larger historical processes, ranging from the 1908 Revolution and the rule of the Committee of Union and Progress to World War I, the dissolution of the Empire and the establishment of post-Ottoman nation states. Nevertheless, Ottoman/Middle Eastern labor history continues to remain marginalized in history-writing, leading a historian to conclude, very recently, that “[f]or all but a few dedicated historians of the Middle East, working-class history has become an artefact of the past.” The reason for this, he suggests, is the fact that the rise of political Islam and popular support for authoritarian regimes have overshadowed class analysis on behalf of cultural and intellectual histories, which seek to understand these recent phenomena, especially by means of records on and/or created by middle classes in the region.

An equally important reason for this, I believe, has been the fact that most new studies of Ottoman/Middle Eastern labor history could not go beyond the framework imposed by limited archival materials and shaped largely by the earlier studies to which they were responding. These studies have understandably been interested in correcting, expanding, and complicating our historical knowledge as produced by earlier historians. They have done so primarily in two ways: They have either continued to focus on the histories of collective struggles, movements and

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14 Ibid.
organizations;\textsuperscript{15} and/or reacted to the traditional focus on collective action and class analysis by exploring the non-economic relations and experiences of workers.\textsuperscript{16} Although these studies have largely achieved the goal of challenging and revising the earlier findings of labor historiography, and have successfully revealed the analytical uses of new perspectives in understanding the complicated histories of Ottoman working classes, they have yet to overcome the above-mentioned neglect of working class experiences and their importance in history.

This seems to be due to at least two factors, both of which have emanated from their dialogue with earlier historiography: First, most of the recent studies have limited their scope to understanding the complexity of collective action and/or to subaltern experiences, without connecting them to macro-historical processes.\textsuperscript{17} Second, they have kept their analytical focus limited to the last fifty years of the Empire, in parallel to the temporal focus of traditional

\textsuperscript{15} For examples, see Yavuz Selim Karakışla, Women, War and Work in the Ottoman Empire: Society for the Employment of Ottoman Muslim Women, 1916-1923 (İstanbul: Osmanlı Bankası Arşiv ve Araştırma Merkezi, 2005); Y. Doğan Çetinkaya, 1908 Osmanlı Boykotu: Bir Toplumsal Hareketin Analizi (İstanbul: İletişim, 2004); Kadir Yıldırım, Osmanlı'la İşçiler (1870-1922): Çalışma Hayatı, Örgütler, Grevler (İstanbul: İletişim, 2013); Can Nacar, "Labor Activism and the State in the Ottoman Tobacco Industry," International Journal of Middle East Studies 46, no. 03 (2014). See also Eleni Gara, M. Erdem Kabada\,y, and Christoph K. Neumann, Popular Protest and Political Participation in the Ottoman Empire: Studies in Honor of Suraiya Faroqhi, (İstanbul: İstanbul Bilgi Üniversitesi, 2011).


\textsuperscript{17} This is despite the fact that the leading historian of the field, Donald Quataer\,t, whose studies continue to influence the new generation of labor historians (including this one), paid a special attention to connect the experiences of working-classes to larger historical processes, in his both earlier and more recent studies. For examples see Quataer\,t, Social Disintegration and Popular Resistance in the Ottoman Empire, 1881-1908: Reactions to European Economic Penetration; Donald Quataert, Miners and the State in the Ottoman Empire: The Zonguldak Coalfield, 1822-1920 (New York; Oxford: Berghahn Books, 2006). For more recent attempts along this line, see Y. Doğan Çetinkaya, The Young Turks and the Boycott Movement: Nationalism, Protest and the Working Classes in the Formation of Modern Turkey (I. B. Tauris, 2013); Can Nacar, "The Régie Monopoly and Tobacco Workers in Late Ottoman Istanbul," Comparative Studies of South Asia, Africa and the Middle East 34, no. 1 (2014).
historiography. This latter tendency has also been encouraged in recent decades by the increasing availability of and access to the archival records concerning this period. Indeed, aside from the rich sources in the Ottoman state archives, non-official sources ranging from periodicals to memoirs, diaries and visual materials are much richer when it comes to studying the late nineteenth and early twentieth centuries. Such sources have encouraged historians to look away from official sources in order to weave a more comprehensive and non-official narrative of working-class experiences in the late Ottoman Empire.

This dissertation aims to expand the scope of these efforts to the industrial workers in the nineteenth century, whom labor historians have paid little attention to, as proven by the above-cited studies. This was mainly a result of the fact that the recent resurgence of Ottoman labor history came at a time when the role of industrial working classes and factories in the world economy started to dramatically decline on behalf of white-collar workers and service sectors, one of the factors that pushed the field into a sense of “crisis” especially at the turn of the millennium. In response to this development, labor historians particularly in Europe and the US have started to shift their attention to the history of these workers and sectors, away from the workers in traditional industries and/or from class analysis. This emerging interest is not surprising, given that workers in large-scale industries did not constitute a majority even in industrialized Europe in most of the nineteenth century. However, this shift could not promise to end the marginality of Ottoman labor historiography, since it was a remedy to a crisis that emanated from an “over-emphasis” on these workers particularly in European and American working-class historiography. The problem in the historiography of Ottoman/Middle Eastern

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18 For a representative collection on labor historians’ response to this crisis by means of revisionary perspectives, see Lenard R. Berlanstein, ed. Rethinking Labor History: Essays on Discourse and Class Analysis (Urbana and Chicago: University of Illinois Press, 1993).
working classes was that even during the period when such studies of industrial workers were more popular, Ottoman historians could not produce a substantial history on these workers, since archival resources were either unavailable or largely inaccessible before the 1990s.

There was, perhaps, one additional reason why Ottoman industrial workers have remained marginal to the interest of labor historians: the condescension of Ottoman/Middle Eastern historiography toward the Ottoman experience with industrialization, and thus toward the workers of industrial establishments in the nineteenth century. Particularly throughout the mid-nineteenth century, the Ottoman state launched an ambitious campaign to industrialize production by steam power, by establishing several factories, the most symbolic of which was an industrial “model farm” in Istanbul. Although, most of these factories initially served to provision the military, producing a range of goods from uniforms to weapons, state elites were also hoping such efforts would eventually trigger an “Ottoman Industrial Revolution”.19 The official campaign largely collapsed in the second half of the century, due to factors that ranged from bureaucratic problems and the scarcity of locally produced raw materials, to the decreasing competitiveness of these industries following the trade agreements with Britain and other European countries, which largely eradicated the barriers against imports of industrialized goods for these countries.20 This failure led Middle Eastern historians to view these attempts as a lost cause against a process of “deindustrialization” triggered by the integration to global capitalism

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19 As Clark suggested, this hope was mostly due to the success of a similar state-led campaign in Egypt, under the governor Mehmed Ali Pasha. See Clark, “The Ottoman Industrial Revolution,” 72. For an overview of Ottoman industrialization attempts during the Tanzimat Era, see Rifat Önsoy, Tanzimat Dönemi Osmanlı Sanayii ve Sanayileşme Politikası (Ankara: Türkiye İş Bankası Yayınları, 1988).

20 Still, aside from some military factories, including those in the Arsenal, some parts of the manufacturing sector, particularly some textile industries largely run by private employers, were able to survive this competition by adapting to capitalist economy in this period. See Donald Quataert, Ottoman Manufacturing in the Age of the Industrial Revolution (Cambridge, UK: Cambridge University Press, 2002). See also Roger Owen, The Middle East in the World Economy, 1800-1914 (London; New York: I. B. Tauris, 1993), 92-95.
in the nineteenth century.\textsuperscript{21} Apparently under the influence of this paradigm, as well as the traditional assumption that identified “the working-class” with industrial workers, Ottoman historians have had little interest in the experiences of workers in these factories, most likely due to the assumption that the failure of these factories also made the emergence of a working-class movement out of the ranks of these workers impossible.

An important outcome of this condescension has been that those historians who were interested in Ottoman labor before the late nineteenth century studied the histories of crafts and crafts people with almost no dialogue with the findings and perspectives of labor history and studies. Eventually, this temporal rupture seems to have led to a compartmentalization between the historical studies on Ottoman working classes, which largely focus on workers and their experiences after the 1870s (in parallel to the increasing frequency of collective action, including strikes) on the one hand, and on the other, studies that largely focus on craftsmen, their experiences, and their guilds before the late nineteenth century. In other words, what has started, if unintentionally, as a temporal division of labor within the field threatens to turn into a more categorical differentiation, between histories of artisanal labor that identify, at best, with social history or “history from below”, and those that identify with labor and/or working-class history.\textsuperscript{22}


\textsuperscript{22} Recent studies only prove this compartmentalization. Whereas the above-cited recent collections on Ottoman/Middle Eastern “labor history” mostly start with one or two articles on the last quarter of the nineteenth century, studies on Ottoman craftsmen mostly end in this period, mostly with an account of the state of guilds in the late Ottoman Empire. For examples, see Suraiya Faroqhi, \textit{Artisans of Empire: Crafts and Craftspeople under the Ottomans} (London: I. B. Tauris, 2009); Suraiya Faroqhi, ed. \textit{Bread from the Lion's Mouth: Artisans Struggling for a Livelihood in Ottoman Cities} (New York; Oxford: Berghahn Books, 2015). A very important contribution that makes an exception to this trend is John Chalcraft’s study on nineteenth century craftsmen and guilds in Egypt. Although it largely deals with the then-mainstream argument on the declining role of craftsmen and guilds in capitalist period, it does not lose...
Ironically, at a time when Thompson`s influence on the field has been most powerful, the old paradigm that excluded artisanal labor from working-class history has been reproduced in a new form. This division threatens not only to undermine the recent renaissance of Ottoman labor history. A perception of discontinuity and rupture between the histories of “craftsmen” and “workers” may also add further to the dominant lack of interest in labor history in understanding the larger, long-term processes in Ottoman/Middle Eastern history. Focusing on the early and mid-nineteenth century industrial workers from a labor history perspective, this dissertation aims to go beyond the dichotomy of craftspeople and workers, by analyzing the continuities, ruptures, and fluidities between those who were employed as “craftsmen” and those as “arsenal workers” throughout the transformation processes in the Arsenal.

In this way, the findings of this dissertation will also contribute to our knowledge of Ottoman craftspeople in the nineteenth century. Recent historiography on the impact of global capitalism on the artisans of the Empire has successfully challenged the earlier assumptions that the irresistible competitiveness of European producers after the Industrial Revolution led to the elimination of artisanal sectors and thus to the disappearance of guilds. These studies have especially shifted the emphasis from the waning of guilds to how craftspeople in many sectors


23 On the influence of E.P. Thompson on recent studies on Ottoman-Turkish labor history, see Y. Doğan Çetinkaya, "Sefaletten İhyaya": Türkiye İşçi Sınıfı Tarihi ve E. P. Thompson," Tarih ve Toplum Yeni Yaklaşımlar, no. 17 (2014).

24 In effect, the studies of the late Donald Quataert, from the 1980s onwards, provide labor historians with a base to build on in this regard, since he was careful enough not to fall into this temporal trap. His review of Ottoman labor history until the 2000s, for example, acknowledges the contributions made by historians of craftsmen to understanding the Ottoman history of labor. Quataert, "Labor History and the Ottoman Empire, c. 1700–1922." However, perhaps due to the little engagement of the latter group of historians with labor history, above-cited recent reviews on Ottoman labor history largely exclude the recent contributions on Ottoman crafts and craftsmen from the historiography of Ottoman/Middle Eastern working classes.
challenged and adapted to changing relations of production, circulation and consumption.\textsuperscript{25} Still, however, this framework has limited the experiences of working classes largely to their adaptation or resistance to economic competition within the context of increasing capitalist relations with Europe. Since working classes, in this framework, did not have a role other than becoming the object of macro-historical processes (even when they successfully resisted or adapted to them), historians’ recent efforts to highlight the agency of working classes could not modify the macro-historical paradigms, which continue to ascribe the power to change the course of history to Ottoman state elites and Western/European capitalism.\textsuperscript{26}

In this dissertation, I do not deny the role of political-economic processes and actors at both global and imperial levels in shaping the transformation processes in the Imperial Arsenal, but I understand this role not in the form of a “penetration” of global forces, but rather as the “making” of capitalist relations by highlighting the agency of working classes in these processes. I demonstrate that during the long nineteenth century, particularly after the increasing impact of the Industrial Revolution on naval competition, the Ottomans opted to adapt to global capitalism as a response to their own problems in competing with other naval powers. And the level of their

\textsuperscript{25} See Quataert, \textit{Ottoman Manufacturing in the Age of the Industrial Revolution}, and Faroqhi, \textit{Artisans of Empire: Crafts and Craftspeople under the Ottomans}.

\textsuperscript{26} This over-emphasis on craft people’s responses to European capitalist forces is largely due to the influence of “world-systems” perspective in Ottoman/Middle Eastern historiography. In this perspective, the socio-economic, cultural and political processes have been defined, made and structured not by nation-states, but a larger framework that we call the “world-system”, with its specific institutional mechanisms and a historical background that can be traced back to the 16th century, and in which societies can be classified with regard to their production processes as the core (dominated by monopoly/oligopoly capitalism) and the periphery (dominated by free-market capitalism which inevitably cannot resist the economic pressure of the core), with in-between societies which are characterized by the mixture of both, but do not form a separate production process. See Immanuel M. Wallerstein, \textit{World-Systems Analysis: An Introduction} (Durham;London: Duke University Press, 2004). For an exemplary study of Ottoman history through this analysis, see Reşat Kasaba, \textit{The Ottoman Empire and the World Economy: The Nineteenth Century} (Albany: State University of New York Press, 1988). Indeed, this approach is also evident in Quataert’s-still influential- study in 1983, see Quataert, \textit{Social Disintegration and Popular Resistance in the Ottoman Empire, 1881-1908: Reactions to European Economic Penetration}. 
adaptation was largely determined by their own internal dynamics, including their relations with the working classes. The engagement with other European powers, particularly Britain, was not merely a relation of dependency (which was evident in technological, political/military and financial support especially by Britain during this period), but one that consisted of horizontal relations as well, as exemplified by trans-imperial connections and migrations that shaped the relations between the Ottoman state and its workers in the Imperial Arsenal.

I argue that modern state formation, a global process, distinctively shaped the experiences of workers and labor relations in the Arsenal. In the long nineteenth century, the Ottoman state was subject to a dramatic transformation by means of several new institutions, laws and regulations, and the reorganization of the existing ones to create and consolidate a modern, centralized state structure. Throughout this transformation, the Ottoman state gradually occupied an immense role in the daily life of its subjects, attempting to convert them into proper “citizens”. Until recently, mainstream historiography depicted this transformation as a top-down process led by a group of reform-minded bureaucrats under the pressure and/or influence of European powers, symbolized by the Tanzimat Edict of 1839 and the Reform Edict of 1856, and largely limited to the period dominated by these bureaucrats until the mid-1870s, which marked the beginning of more absolutist policies under Sultan Abdulhamid II (r.1876-1909).27 This dissertation builds on the efforts of Ottoman historians to challenge this depiction. Recent studies have demonstrated that the process of state formation in the Ottoman Empire can be traced back to the early-modern era, and the transformations in the late Ottoman Empire neither started in the

1830s nor ended in the 1870s. This claim does not deny the peculiarity of this period within the long nineteenth century, however. The Tanzimat Edict of 1839 was more than a mere recognition of the rule of law and the state’s responsibility to protect the basic rights and equality of its subjects regardless of their religious backgrounds. It symbolized the arrival of a historical moment when the Ottoman elites committed the state to the massive integration of the Empire into modern capitalism by reorganizing politics and the economy. Thus, throughout the dissertation, acknowledging the distinctive significance of this period for the transformation of the Imperial Arsenal, I will refer to this era simply as the “Tanzimat Era”.

In the chapters that follow, I will show the distinctive impacts of this commitment on the lives of working classes, with a specific focus on relations of production in the Arsenal. By analyzing the attempts of the ruling elite to put the Arsenal and its workers into an “order”, I will show that this initiative began in the late eighteenth century, as a result of internal and external factors. In the mid-nineteenth century, these efforts intensified, by means of policies that characterized the Tanzimat Era on a larger level, particularly through modern conscription, the introduction of modern schools, mechanization, and the increasing presence of the state in the everyday life of its subjects through laws and regulations. In my treatment of these processes, I will show how these policies were initiated by the bureaucratic elites that controlled the means of production in the Arsenal. I will also highlight that they were initiated in response to both domestic and global processes since the late eighteenth century, and that workers played a central

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28 See Rifa’at A. Abou-El-Haj, Formation of the Modern State: The Ottoman Empire, Sixteenth to Eighteenth Centuries (Syracuse, NY: Syracuse University Press, 2005). For a representative collection on the history of the Tanzimat, which includes the contributions of revisionary approaches, see Halil İnalcık and Mehmet Seyitdanlıoğlu, eds., Tanzimat: Değişim Sürecinde Osmanlı İmparatorluğu (Ankara: Phoenix, 2006).
role not only in the formation of these policies, but also in complicating and transforming these policies during this period.

The Global in the Imperial Arsenal

This dissertation highlights the significance of both internal and global processes in shaping the nineteenth century experiences of modernity. In this way, it confirms the existence of an “Ottoman” modernity, acknowledging the fact that the sweeping global processes of industrialization and modern-state formation in the nineteenth century took different forms and led to distinctive experiences in different local contexts. In my analysis of this interaction between the local and global processes, I use a world-historical approach at two different levels.

On the one hand, although this study focuses on a micro-setting, it attempts to show how doing so is not contradictory with a world-historical approach. On the contrary, analyzing global processes in a micro-setting is indispensable for a complete understanding of both local and global processes.29 Throughout the following chapters, this approach will demonstrate how the lives of working classes in a particular setting were embedded in more empire-wide and world-wide structures, patterns, and processes. This method of analysis does not merely show the concrete impacts of these macro-processes on the micro-experiences of working classes. By highlighting how workers’ relations and struggles shaped the “Ottoman” moment of modernity, this method also underlines the significance of micro-level analysis to understand the historical trajectories of global processes and the various ways these processes were (re)produced in local

settings. In this sense, the Imperial Arsenal offers an invaluable opportunity. Since it was the most critical military-industrial site, located in the capital of the Empire, the nineteenth-century processes of modern state-formation and industrialization were experienced in visible and powerful ways. Although this distinctive feature of the Imperial Arsenal should caution us against overgeneralizations, these findings should also prove the methodological possibilities of studying Ottoman history by adopting a perspective that is both global and local.

On the other hand, I will demonstrate the interactions between the local and global processes by means of an emphasis on movements and connections across and within political boundaries. Recently, labor historians have increasingly adapted to the so-called “global/transnational turn” in historical studies by focusing on the mobility of workers, commodities, and capital as fundamental to any analysis of their relations and experiences at the workplace and their everyday life, their identities, cultural representations, collective actions, and their politics.\(^{30}\)

Indeed, a perspective that puts these mobilities and movements at the center of historical analysis can give labor historians opportunities to reveal the decisive roles of working classes in the making of global processes.\(^{31}\)

In addition, this turn has also been characterized by broader definitions of capitalism and class, which have encouraged labor historians to look beyond the era of industrialization in studying capitalism and the working classes. They have attempted to do so particularly by

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\(^{30}\) See Michael P. Hanagan, "An Agenda for Transnational Labor History," *International Review of Social History* 49, no. 3 (2004). For a recent collection of essays with this approach, see Leon Fink, *Workers across the Americas: The Transnational Turn in Labor History* (New York: Oxford University Press, 2011). See also a comprehensive report on a recent conference that brought together labor historians, including those working on the Ottoman Empire, with this perspective, M. Erdem Kabadayî and Kate Elizabeth Creasey, "Working in the Ottoman Empire and in Turkey: Ottoman and Turkish Labor History within a Global Perspective," *International Labor and Working-Class History* 82 (2013).

\(^{31}\) For a recent study that demonstrates the role Ottoman working classes in the making of global radicalism in the long nineteenth century, see Ilham Khuri-Makdisi, *The Eastern Mediterranean and the Making of Global Radicalism, 1860-1914* (Berkeley: University of California Press, 2010).
incorporating the experiences of workers before the Industrial Revolution and in non-industrialized societies into the analysis of the history of capitalism. This has also started to expand the scope of research on the working-classes to include all forms of labor under capitalism, including coerced forms of labor, from chattel slavery to military labor, that had theoretically been excluded for being antithetical to capitalism, despite the historical evidence for their place in the making of capitalism.\footnote{Marcel van der Linden, \textit{Workers of the World: Essays toward a Global Labor History} (Leiden: Brill, 2008). For a debate on the “Global Labor History” approach, see the responses to the article written by M. van der Linden, the leading proponent of the approach in the same issue of ILWCH: "The Promise and Challenges of Global Labor History," \textit{International Labor and Working-Class History} 82 (2013).}

By means of these methodological perspectives offered by the “global” turn, this dissertation will demonstrate that the movement of ideas, technologies, and people between the Ottoman Empire and Europe, and the interactions between the Ottomans and the Europeans, are central to the making of Ottoman modernity in the nineteenth century. From the employment of naval conscripts in factories to the vocational schools, from labor management to British workers, connections and mobilities between Europe and the Ottoman Empire at various levels profoundly shaped the history of modernity in the Ottoman Empire. The dissertation especially underlines the role of political and economic connections between the British and the Ottoman Empire in the modernization of the navy through technology transfer, and the movements and experiences of British workers in the development of class relations in the Tanzimat Era. In addition, I will show that the history of workers in the Imperial Arsenal during the formation of capitalist relations was not limited to industrial mechanization, nor to the so-called “free” wage workers. Indeed, aside from highlighting the co-existence of various forms of labor, from conscripts to convicts, from coerced wage-workers to those who came by contract, the dissertation will also show the fluidity
between these forms of labor, underlining the historical ambiguities and complexities of a categorization between “free” and “unfree” forms of labor.\(^{33}\)

**Class Formation**

This brings us to the question of class formation, a concept that needs further elaboration as it is central to the argument of this dissertation. Following E. P. Thompson, I will take class as a “historical relationship”, the experience of which “is largely determined by productive relations into which men are born-or enter involuntarily.”\(^{34}\) In particular, when I refer to class formation in this dissertation, I refer to the historical formation of a specific relationship, in this case, between the Ottoman state elites and the working classes, throughout the transformation of the relations of production within a capitalist context.\(^{35}\) In line with my broader understanding of working classes to include coercive forms of labor, I do not limit the articulation of class interests to strikes and open collective action, especially in a context in which wage labor was not the dominant form of labor relations. Thus, we should look more into the alternative, more mundane, forms of struggle at the everyday level, and understand these struggles as integral to the history of class formation.\(^{36}\) In this sense, I see the forms of struggle that ranged from desertion to stealing chips,

\(^{33}\) Recently historians have started to pay more attention on the role of coercion in the history of labor on a global level. For examples, see the articles in Alessandro Stanziani, ed. *Labour, Coercion, and Economic Growth in Eurasia, 17th-20th Centuries* (Leiden;Boston: Brill, 2013).


\(^{35}\) This perspective does not equate class and class formation to the relations of production, as Wood underlines: “The concept of class as *relationship* and *process* stresses that objective relations to the means of production are significant insofar as they establish antagonisms and generate conflicts and struggles; that these conflicts and struggles shape social experience ‘in class ways,’ even when they do not express themselves in class consciousness and clearly visible formations; and that over time we can discern how these relationships impose their logic, their pattern, on social processes.” Ellen Meiksins Wood, *Democracy against Capitalism: Renewing Historical Materialism* (Cambridge, UK: Cambridge University Press, 1995), 82.

\(^{36}\) For the political significance of everyday forms of struggle, see James C. Scott, *Weapons of the Weak: Everyday Forms of Peasant Resistance* (New Haven; London: Yale University Press, 2008); Stephen P. Frank, *Crime, Cultural Conflict, and Justice in Rural Russia, 1856-1914* (Berkeley: University of
from coming late to work to petitioning and seeking the intervention of foreign embassies, as integral to the history of class formation as strikes and collective action. In this way, this dissertation also acknowledges that the history of class formation cannot be constrained to a single model, and varied in different contexts.  

My focus on the relations of production does not necessarily mean limiting class and the history of working classes only to these relations. Social and labor historians’ work on the significance of cultural experiences and everyday life successfully demonstrated that class formation both shapes and is shaped by experiences and processes on non-economic terrains, from gender and language to space and migration. In effect, in different parts of this dissertation, the reader will see that I borrow the analytical perspectives laid out by these studies to understand how political and cultural processes and identities impinged upon the relations between the Ottoman state and the workers in the Imperial Arsenal.

In doing so, I also intend to avoid the polarizations that characterized the historical studies of the end of millennium, on behalf of a more inclusive approach, such as that offered by Eley and Nield, who use the term “structural regularities” to underline “the persistence of class as a

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For a collection of essays that recognizes this variation even within the industrialized world, see Ira Katznelson and Aristide R. Zolberg, Working-Class Formation: Nineteenth-Century Patterns in Western Europe and the United States (Princeton: Princeton University Press, 1986).

pre-discursive or non-discursive formation” produced as a result of “the production of inequalities under capitalism.” However, this does not mean returning to the orthodox historiographies of labor that excluded cultural relations and processes. Eley and Nield also argue that by understanding social relations and processes by means of analyses on material and cultural “registers”, and by drawing connections between these registers, we can transcend the polarized historiographical positions between materialist and cultural schools/approaches. In other words, although analyzed in different terrains, there is no hierarchical-determinist relation between the structural and cultural/discursive processes. Following this perspective, although this dissertation focuses largely on the making of class relations on a material register, it also acknowledges the significance of culture and everyday life. Indeed, more research is necessary to enrich and complicate the narrative presented here by a specific focus on the everyday life of workers, particularly outside the Arsenal. I believe the findings of this study will also be useful for future studies that will attempt to understand how, for example, gender, ethnicity, religion, migration, regional belongings, and urbanization shaped the experiences of working-classes in the nineteenth century Ottoman Empire.

I do not, thus, argue that the process I narrate in this dissertation is an exhaustive description of working-class experiences, nor that it could completely represent the experiences of other workers in the Ottoman Empire in this period. This dissertation is not a history of the making of the “Ottoman working-class”, since I believe that the current state of research on Ottoman working classes, outlined above, does not allow us to write such a history at this point. I also do not argue that class formation is the only or dominant form of relationship that characterized Ottoman modernity. Acknowledging the limits of this study, I believe that the

findings of this dissertation could serve, at best, to shed light on the early phases of capitalist
class formation, and perhaps of the formation of “the working-class” in the Ottoman Empire; to
argue that social relations in Ottoman society entail capitalist class formation, even if it may not
be dominant to characterize these relations at this stage; and to demonstrate that Ottoman
modernity cannot be completely understood without a comprehensive analysis of class formation.

Overview of the Dissertation

The dissertation traces the history of transformations in the Imperial Arsenal from the late
eighteenth to the late nineteenth century in five chapters, organized in a chronological-thematical
order. The first chapter serves as the ground on which the rest of the dissertation is built. It
describes the historical trajectories of global shipbuilding and the Imperial Arsenal, but also
particularly focuses on the policies of the “New Order”, which would shape the nineteenth
century history of the Arsenal. I discuss how the increasing concerns with the scarcity of raw
materials overlapped with political concerns to constrain immigration to the capital. The socio-
economic pressures created by this context led the Arsenal administration to reorganize labor, by
creating and maintaining a regular force of skilled carpenters, augerers, and caulkers, by
systematizing the previously occasional practice of obligating guildsmen in Istanbul to work in
the Arsenal, and by continuing to draft labor from the provinces and/or from convicts. The last
part of the chapter gives an overview of the transformation of the Imperial Arsenal in the mid-
nineteenth century, inviting the reader to understand how this transformation took place in the
rest of the dissertation.

Chapter II describes how an important element in modern state-making, modern
conscription, was designed and employed as a tool in the state’s struggle to decrease its
dependency on civilian wage workers by creating a labor force that would be more compatible
with the requirements of capitalist production, marked by increasing level of competition, productivity, and efficiency. Modern conscription promised to give the Ottoman ruling class a pool of workers who could be trained to possess industrial skills and who could then be employed for long periods, with wages far lower than the market, and in a more reliable disciplinary scheme. The government especially wanted to adapt the advantages of this modern form of “tributary labor” to the new system, by integrating non-Muslims who were seen as being more qualified for naval crafts. However, reactions of Ottoman subjects curtailed the efforts to fully militarize the labor force, and led to the shortening of the military service, which eventually undermined the initial plan to both convert and utilize the conscript’s labor power for industrial production.

Chapter III shows how the Industrial Revolution and the increasing political-economic connections with Britain transformed the Imperial Arsenal. It underlines how British workers, who migrated in parallel to the increasing demand for skilled labor mostly as a result mechanization of production, became part of the formation of capitalist class relations through their specific experiences and relations to the Ottoman government. Their increasing presence in the Arsenal turned a new page in the history of the relationship between the Ottoman state and the workers. Against the withholding of wages and dismissals, largely caused by the government investment in capital improvements at workers’ expense, British workers engaged in various forms of resistance, ranging from exits and turnovers to petitioning and strikes. In addition, the chapter highlights how their experiences at the Arsenal were deeply connected to their everyday life in Istanbul during this period.

Chapter 4 discusses the integration of child labor into the capitalist relations of production in the Imperial Arsenal throughout the nineteenth century. In doing so, it underlines the commodification of children’s labor power, and analyzes the central role the naval-vocational
schools played in this process by converting the urban poor into modern industrial workers by subjecting them to military discipline. It demonstrates how the availability of the urban poor, the increasing dependence on British and non-British wage labor, the success and failures of the process of the militarization of labor, and the dramatic transformation of industrial production all played significant roles in integrating children into making of capitalist class relations. It also connects this process to the modernist ideals and policies of the state elites in this period.

Chapter 5 analyzes the production politics that came into being in response to the formation of a heterogenous labor force throughout the transformation processes discussed in earlier chapters. It does this particularly by focusing on the regulations and instructions issued in the early 1870s. In parallel to the increasing division of labor and the desire of the state elites to control the labor process, the Arsenal administration attempted to consolidate capitalist relations by a top-down supervision of the labor process, by time-discipline, and by spatial-administrative reorganization of the labor force. In addition to these policies, and with a view to halting the problem of turnovers and increasing workers’ loyalty to their workplace, the administration also implemented policies that aimed to bind civilian workers to the Arsenal, the major one being the institutionalization of social security benefits in the mid-1870s. In an epilogue to the chapter, I describe the state of the labor force by the early 1870s, including their ethnic-religious distribution by means of an onomastic analysis.

Sources on the Imperial Arsenal

Although it was the most important military-industrial establishment in the Ottoman Empire, the attention the Imperial Arsenal drew in Ottoman historiography does not match its significance for the Ottomans. Efforts in the twentieth century to comprehensively describe the historical development of the Ottoman Arsenal date back to Alpagut’s study that was published post-
mortem in 1941, even though studies by academic historians have remained limited to date. These pioneering studies that serve as works of reference for more recent works on the Arsenal, including this one, largely focused on describing the institutional characteristics and transformation of the Arsenal, mostly as part of the history of the Ottoman navy. A major reason for this was the limits of archival study in this period. These studies, including the monographic study of İdris Bostan, were largely based on the Prime Ministry Ottoman Archives, the main archive for documents produced by the central state, which became increasingly accessible to historians only with the growing efforts at classification in the 1990s. The other main archive that keeps the internal records of the Arsenal (and the navy) mostly after the late eighteenth century is the Naval Museum Archives in Istanbul, administered by the Turkish Naval Forces, where admission has been more restricted and classification efforts have proceeded slowly, making some of the documents used in this dissertation accessible only recently.

As a result, thanks to the increasing use of foreign records, as well as local archives, historical knowledge of Ottoman shipbuilding and the Ottoman navy increased dramatically, yielding important monographic studies in the last two decades. This dissertation contributes to

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41 Tuncay Zorlu, *Innovation and Empire in Turkey : Sultan Selim III and the Modernisation of the Ottoman Navy* (London; New York: Tauris Academic Studies, 2008); Şakir Batmaz, "II.Abdulhamit Devri Osmanlı Donanması" (PhD Diss., Erciyes University, 2002); Nurcan Bal, "XIX. Yüzyılda Osmanlı Bahriyesi'nde Gemi İnşa Teknolojisinde Değişim: Buharlı Gemiler Dönemi," (MA Thesis, Mimar Sinan Fine Arts University, 2010); Yusuf Alperen Aydn, “Osmanlı Denizciliği (1700-1770)” (PhD Diss., İstanbul University, 2007); Levent Düzçü, "Yelkenliden Buharlya Geçişte Osmanlı Denizciliği (1825-1855)" (PhD Diss., Gazi University, 2012); Sinan Yakay, *Karadeniz Ereğli'de Tersancılığın Tarihi ve
these recent efforts that largely were limited to institutional and technological transformations of the Arsenal by analyzing this history “from below”. I use sources located in the Prime Ministry Ottoman Archives, the Naval Museum Archives, and the British National Archives at Kew. Since the Imperial Arsenal is a military institution, and the non-state sources on mid-nineteenth century Ottoman workers are scarce, it is not surprising that most of the relevant sources especially regarding the workers of the Arsenal were located in these state archives, which means that most of these sources are officially biased. Still, I believe a social history perspective can transcend these biases on behalf of recovering the voices and experiences of workers, sometimes between the lines, sometimes in the silences, sometimes through the contradictions, heterogeneities, and/or discontinuities in bureaucratic discourses. In this way, this dissertation aims to show that official documents could be a particularly rich source for understanding how workers’ agency and state policies shaped each other throughout a historical process, revealing the historical course of the relationship between the workers and the Ottoman state elites. Furthermore, the state archives are also rich in terms of reflecting the original voices of working classes, especially regarding petitions. Still, where these official sources proved not sufficient to understand this relationship, I have resorted to diaries and newspapers, particularly for the chapter on British workers.

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CHAPTER 1

A HISTORICAL PROFILE OF PRODUCTION AND LABOR IN THE IMPERIAL ARSENAL

Constantinople had only a few docks for shipbuilding, when Selim I ordered his Grand Vizier Piri Pasha the construction of a large naval arsenal in Kasımpaşa. More than half a century had passed after the conquest of the city in 1453, but the center of shipbuilding was still located in Gallipoli. The news of an impending crusade against the Empire, led by the Venetians and the Pope, were circulating in the capital city. Selim I, the ambitious sultan who replaced his father in 1512, was well aware that he needed a powerful navy in order to protect the city and the Empire against the naval giants of the time, the Venetians. Haunted by this nightmare, he ordered Piri Pasha to build an arsenal on the Golden Horn, in order to create a large and powerful navy. From 1515 onwards, this new arsenal became the epicenter of Ottoman shipbuilding. Selim could not survive to see the completion of his dream, which would come to life during the long reign of his son. Only two years after Süleyman (the Magnificent) was enthroned, in 1522, the Ottomans conquered Rhodes following a months-long siege, with a navy made of 300-700 ships, most of which were built in the new arsenal.\footnote{Bostan, Osmalı Bahriye Teşkilâtı: XVII. Yüzyılda Tersâne-i Âmire, 3-4.} It was merely the first of the Ottomans` glorious naval victories in the Mediterranean in the sixteenth century, which would lay the ground for their naval supremacy in the eastern Mediterranean and maintain it for a long time afterwards. And although the Ottomans began to lose this supremacy in the eighteenth century, the Tersane-i Amire remained one of the largest and most important arsenals among its counterparts in the Mediterranean, until the demise of the Empire after World War I.
In this chapter, through a description of the historical changes in the profile of the labor force and the production process, I will argue that the decreasing accessibility and availability of raw materials and cheap labor pushed the naval administration to reorganize the production process in order to rationalize it, by increasing its consistency, efficiency, and productivity. In other words, the state of the provision of raw materials and labor was critical to understand why the Ottoman elites were forced to introduce a “new order” into the production process beginning in the late eighteenth century. The problem of providing both materials and labor was not merely an outcome of a series of internal developments that increasingly made it impossible and/or illegitimate to provide the material and labor needs of the state by coercive means. The increasing integration of the Ottoman Empire into global capitalism was accompanied by the competitive pressures on the Ottoman navy, especially after the Industrial Revolution that increasingly introduced steam-power and iron into the shipbuilding process. Such pressures would turn into a survival threat especially in the second quarter of the nineteenth century.

These reforms mostly started during the era of Selim III (r.1789-1807), who launched a comprehensive campaign for reforms under the title of the *Nizam-ı Djedid* (New Order). The *Nizam-ı Djedid* did not only consist of reforms in the restructuring of administration, bureaucracy and economy in the Empire. If the campaign has mostly been associated with the new land army that eventually incited the rebellion of the Janissaries in opposition to this army, a perhaps equally important transformation took place in the navy, especially in the Arsenal. Reforms were not limited to the physical modernization of the Arsenal and the construction of new and more powerful galleons. The New Order started a new page in the history of the Arsenal by attempting to create a regular, disciplined and skilled labor force, characteristics which were seen as indispensable to achieve ultimate efficiency and productivity in the shipbuilding process. Although the New Order, as a program, officially came to an end following the deposition of its
most ambitious proponent, the reforms it started along this line shaped the following history of
the Imperial Arsenal, if only by simply pointing out a vision that would mark the labor policies of
Ottoman ruling classes in the nineteenth century. Before analyzing the history of these policies in
the rest of this dissertation, we first need to have a clear idea of why the New Order was a break
from the past, laying out a new vision for Ottoman statesmen. After all, before beginning to read
a new page in history, should we not first ask why it was written?

The Shipbuilding Process in the Imperial Arsenal

Shipyards, in the early modern era, were important not simply due to their critical role in
protecting and advancing political and economic interests. They were the locus of industrial
production as they required the mobilization, concentration, and employment of a large amount
of supplies, together with a sizeable number of laborers drafted from different places. It was
hence not surprising to see that shipyards were often located in places where employers could
easily access at least the most basic material for shipbuilding, timber, as well as the most
important body of workers, the carpenters. Proximity to timber resources could be vital for a
shipyard, and “depletion of these resources correlated strongly with the downgrading or virtual
elimination of shipyards.”43 Thus, a shipyard had to develop an extensive and systematic network
to guarantee the provision of timber and other material resources, as well as of labor, so that it
could survive and compete against its rivals. This was more the case for naval arsenals than
private shipyards, as the former had to consider not only logistical concerns, but also political and
military interests, which sometimes could push the naval arsenals away from these resources.

The issue of accessibility, of both materials and labor, is critical to understand why the Ottoman rulers opted to wait for more than half a century before moving the naval shipbuilding to the new capital. Compared to Constantinople, other Ottoman arsenals, such as the ones located in Gallipoli (in Eastern Thrace), İzmit (in Eastern Marmara), and Sinop (on the Black Sea coast), were arguably better options for the provision of materials and labor, considering their proximity to forestry as well as to the towns marked by the dominance of fishery and merchant shipping, thus possessing a larger body of skilled and experienced shipbuilders. Although Constantinople had its own shipyard in Galata immediately after the conquest, it remained relatively unimportant, and mostly run by a small number of laborers who were brought from these coastal towns.44 Building a large arsenal in the capital required an established institutional system and networks by which these materials and laborers were mobilized and transported to the capital from these towns. For this to be achieved, the Ottomans first had to consolidate and institutionalize their own political control and legitimacy in these territories.

The reason as to why the Ottoman rulers envisaged Constantinople, rather than other arsenals, as the primary location of naval shipbuilding must have had to do less with the naval protection of the capital city than the desire to control the processes of provisioning and production. Before a naval expedition, building a large navy swiftly and in secrecy could prove vital for the campaign, and thus effective control of the center was indispensable, something which Selim I was acutely aware of and sensitive to.45 In effect, Katip Çelebi, writing in the eighteenth century, had a point when he suggested that the ships should be built in the Imperial Arsenal as much as possible. In this way, he argued, the more the ships would be built on time, the less the subjects, employed in the Arsenal, would be oppressed, alluding to the forced nature

44 Bostan, Osmanlı Bahriye Teşkilâtı: XVII. Yüzyılda Tersâne-i Âmire, 3.
of recruitment. Katip Çelebi was obviously well aware that the efficiency of production was closely related to the legitimacy of recruitment for the Arsenal. As the systematic mobilization of skilled and experienced shipbuilders of coastal towns, and their employment for long periods of time away from their homes and livelihoods, were central to the upkeep of a large arsenal in the capital city, the system had to proceed with as little coercion as possible for its survival. And this could be possible with an effective centralized control that ensured the efficiency of the production process, which would decrease the length of employment, and minimize the resistance against the recruitment process.

As the Imperial Arsenal continued to grow throughout the sixteenth and seventeenth centuries, Gallipoli’s significance gradually disappeared, alongside the other arsenals in the Empire. The establishment of an arguably well-maintained system for the provision of labor and materials for the Imperial Arsenal in Constantinople did not, however, eliminate the continual pressures over their accessibility, especially when the navy needed them at short notice. A war or rebellion around these territories as well as the reluctance and resistance of local communities to provide these laborers and materials at the expense of their own interests could curb the naval production process and thus easily create a crisis for the central government. We unfortunately lack detailed studies to comprehend the overall impact of the relations between the center and the peripheries on the naval production process during the early modern period. But even three centuries later, in the middle of the nineteenth century, a document was still underlining how the arsenals in Izmit and Gemlik, on the Sea of Marmara, were more convenient for the provision of materials and laborers, compared to the Imperial Arsenal.

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47 BOA.A.MKT.202/62, 10 Receb 1265 (1 June 1849)
The technical developments in shipbuilding throughout the seventeenth and eighteenth centuries further added to such pressures on the governments. In these centuries, the size of warships started to increase dramatically, in response to demands to take advantage of technical advances to carry more and more guns. Although there have been debates regarding which one triggered the other, it is certain that both the increasing integration of the world economy after the European discoveries by means of merchant shipping, and the increasing competition between the navies played their own roles in the history of shipbuilding.\textsuperscript{48} As a result, the size and technical qualities of especially ocean-going vessels continued to increase. And the more their size and technical requirements increased, the more their production was concentrated in larger, central shipyards, as these larger shipyards were “the most complex units of this period, combining shipbuilding and maintenance activities with a large number of related production processes preparing the necessary material inputs.”\textsuperscript{49} They had already developed the necessary social, economic and political networks and structures to procure the necessary supplies and to mobilize workers with necessary numbers and/or skills. As a result, governments gave priority to investing in the development of these shipyards, at times at the expense of the smaller ones.

An overall understanding of the shipbuilding process itself will give a better sense of why the problem of procurement, both of materials and labor, remained at the top of the concerns of shipyard employers, be they navies or private companies, during this era. From the sixteenth century up until the ironclad revolution of the mid-nineteenth century, naval shipyards all over the world primarily invested in building wooden ships, the most important of which were galleons, powered by sails, which gradually replaced oar-powered galleys in the seventeenth-eighteenth centuries. The sizes and importance of these ships varied mostly in parallel to the guns

\textsuperscript{49} Ibid.
they could carry: A three-decker galleon (ücü ambarlı) had 110-120 guns, whereas a two-decker (kapak kaldırır kalyon) carried 80-110. They were supplanted by frigates, corvettes, sloops, fire ships and other smaller vessels in a navy. Shipyards also built cargo ships, and mostly in private yards, merchant ships as well. Although the sail revolution in global shipbuilding started much earlier, thanks partly to the technologies that developed with the increasing presence of ocean-going vessels, the Ottomans started to systematically adopt galleons only in the eighteenth century, for reasons I will discuss shortly.

However, the sail revolution and other innovations in shipbuilding during this era did not change the shipyards’ dependence on the most important material for the construction of these ships until at least the late nineteenth century, that is, timber. Timber was used by various classes of carpenters in building not only the keel, hull, decks and masts of the ships, but also the inner parts that required more skilled craftsmanship. Ships were designed by architects (mimaran), who were trained and experienced in carpentry. The main body of carpenters that was specialized in shipbuilding was called the marangozan, a term that at least during this era was specifically used for shipbuilder-carpenters. In fastening planks to each other, they were helped by the class of augerers (burgucuyan), who also were involved in manufacturing augers in the Arsenal. A different class, called joiners (neccaran), were skilled carpenters who manufactured the inner furniture of ships, whereas cabinetmakers (tavşanan) and carvers (oymacıyan) were specialized in fine woodwork on these ships.

50 For a detailed description of the types of ships in the Ottoman navy in the late eighteen century, see Zorlu, Innovation and Empire in Turkey: Sultan Selim III and the Modernisation of the Ottoman Navy, 120-32.
51 Kahane and Tietze, The Lingua Franca in the Levant: Turkish Nautical Terms of Italian and Greek Origin, 291-92.
The second important task was to put oakum into the seams of the ship and then cover the surface with pitch (or tar). This was done to protect the hull of the ship from decaying and to make sure water would not get through the seams into the ship. This important task was done by caulkers (kalafatçıyan), who, at least in earlier times, and occasionally in the early nineteenth century, too, were divided between those who were specialized in oakum (üstüpüciyan), and those in pitch. In the shipyards, caulkers were the second largest group after shipwrights, as they were needed not only to construct the ships, but also repair them. Besides, for those ships sailing for a long voyage or expedition, they were indispensable regardless of the types of ships. Thus, depending on its size, a ship had to make sure to take a certain number of caulkers on board before sailing.

In the age of galleys, another important task was to manufacture the oars, done by oarmakers. Gradually, throughout the eighteenth century, in parallel to the replacement of galleys by galleons, oarmakers were replaced by sailmakers and ropemakers, who produced sails and cordage. Flax and hemp were needed in order to produce sailcloth and ropes/cordage. In the sailing age, flax was indispensable, and as anchors became heavier in parallel to the size of ships, the cordage had to be as high quality as possible. The production of both these resembled each other, so their raw materials were delivered to "large scale naval shipyards where they were transformed by wage labor in specialized workshops into rope and sailcloth." In the Imperial Arsenal, a manufacture for sail making was built in 1709. Ropemaking particularly required large spaces for ropewalks, thus it had to be concentrated in large shipyards. Until 1827, ropes were thus made on what was called the Meydan (the square) in the Imperial Arsenal. After 1827,

52 Özveren, "Shipbuilding, 1590-1790," 68.
a new modern factory was built right across the Golden Horn, called the Rıstehane-i Amire (Imperial Yarn Factory), which produced sails and ropes for the navy.\textsuperscript{54}

Although metallic items did not play an important role in shipbuilding at least until the nineteenth century, they were still needed particularly to produce anchors, nails and carpentry tools. Iron ores, after mined, were held subject to different processes to manufacture the necessary items. At least until the eighteenth century, it was common to see these processes separated from each other: “All over Europe, smelting and refining were primarily confined to the countryside, but the manufacture of ironware remained an urban phenomenon, usually organized by guilds.”\textsuperscript{55} In the Arsenal, too, processed iron was mostly brought from the towns of Samakov and Samakocuk in the Thrace, and then converted to ironware by ironsmiths in the capital. However, it seems that the increasing mechanization of iron industry gradually removed this distinction, as blast furnaces started to require high capital investments, which paved the way for the increasing dominance of merchant capitalists, landed aristocracy, or directly of the central states.\textsuperscript{56} Thus ironworks were gradually and increasingly concentrated in single large industrial establishments. In the Imperial Arsenal, the first workshop for the manufacture of anchors was established in 1708, being replaced by a larger anchor house (lengerhane) with 20 furnaces, which at times provided raw iron for other purposes in shipbuilding, at the end of the century.\textsuperscript{57} A modern Ironworks was constructed within the Arsenal in 1852. Another Ottoman example was the Zeytinburnu Ironworks, which became the most important iron factory in the capital in the mid-nineteenth century.

\textsuperscript{54} See the epilogue to this chapter for details.
\textsuperscript{55} Özveren, "Shipbuilding, 1590-1790," 74.
\textsuperscript{56} Ibid., 78.
\textsuperscript{57} Zorlu, \textit{Innovation and Empire in Turkey: Sultan Selim III and the Modernisation of the Ottoman Navy}, 55.
The Mobilization of Labor

How was labor mobilized for the Arsenal, to build ships and to manufacture their items out of these materials? All over the world, the more certain shipyards became central to naval shipbuilding in these centuries, the more these navies became dependent not only on the workers brought from different cities, but also on those craftsmen who were settled around them and were organized into guilds. In fact, many of these shipyards had organized groups of merchants and craftsmen around them. They were among the most influential social actors in these cities, and, at times, could even pressure the governments or private employers when their interests were threatened due to particular policies. A telling example of this was the delayed adoption of sawmills in Britain, where hand sawyers reacted vociferously to the adoption of sawmills.58

Similar to these shipyards, the Imperial Arsenal in Constantinople developed its own milieu of craftsmen who were specialized in different aspects of shipbuilding, from caulkers to carpenters and ironsmiths.

At least in its first two centuries, the Imperial Arsenal had a considerable number of craftsmen who were regularly employed in the Arsenal. According to the wage registers of the first century of the Arsenal, studied by Çizakça, there were four main groups of workers: carpenters, caulkers, augerers, and mast-makers.59 At the beginning of the seventeenth century, according to Bostan, there were 838 people registered as regular craftsmen of the Arsenal. Caulkers were the largest group with 272 members, organized into six companies. They were seconded by skilled carpenters and joiners, with 233 neccars divided into four companies. Aside from these, there were also oar makers, block makers, towers, ironsmiths, and menders (meremmetçi)

and gunners who were part of these registered classes. Clearly, these represented only the most skilled segment of the labor force in the Arsenal. They were recruited mostly from the devshirme boys who were trained in such crafts, and were paid salaries (ulufe). Bostan shows that the Arsenal gradually abandoned this practice of registered craftsmen throughout the seventeenth century, and their total number was decreased to 118 at the end of the century.\textsuperscript{60}

The bulk of the labor force, which could amount to thousands during war times, even before the eighteenth century, had been made up of laborers who were temporarily employed in the Arsenal, in return for tax exemptions or wages. In the eighteenth century, however, the Arsenal became almost entirely dependent on this irregular labor force, rather than on regulars. According to a register from 1743, reproduced by Uzunçarşılı, the only group who were directly involved in shipbuilding within the registered employees of the Arsenal were the caulkers.\textsuperscript{61} This should be due to the fact that maintaining ships, at least until the Çeşme Disaster in 1770, was more important than building new ships. This could be understood with reference to the production cycles that characterized shipbuilding in the main competitor of the Ottoman arsenal. In the Venetian Arsenale, as Özveren shows, the number of carpenters fell dramatically in the second half of the sixteenth century, whereas caulkers and oar makers increased in number. This shows an important characteristic of shipbuilding and the periodic cycles in labor recruitment and organization. At times of economic growth or wartimes, as new ships were built, the need for shipwrights (carpenters) increased dramatically. However, during economic stagnation, the Arsenal became rather a place where not shipbuilding, but repair and maintenance dominated the production process. As a result, we tend to see more caulkers and other maintenance workers than

\textsuperscript{60} Bostan, \textit{Osmanlı Bahriye Teşkilâtı: XVII. Yüzyılda Tersâne-i Âmire}, 66-70.
\textsuperscript{61} Uzunçarşılı, \textit{Osmanlı Devletinin Merkez ve Bahriye Teşkilâtı}, 412.
shipbuilder carpenters. The primary focus during such periods was to maintain the existing fleet, rather than investing in the growth of the navy.\textsuperscript{62}

It is most likely that this was at least one of the reasons as to why the \textit{Tersane} gradually abandoned its policy of keeping regular/registered craftsmen and relied on irregular labor and outsourcing. After the victory in the second war in Morea, in 1715, the Ottomans maintained their strength in the following half a century, especially against the Venetians. In addition to the state’s fiscal problems in this century, this relative peace period most likely pushed the Ottoman naval administration to focus less on building new ships, equipped by new technologies, than on maintaining and repairing existing ones. Hence the overwhelming majority of caulkers among the remaining registered employees, as they were the central group of craftsmen for ship repair.\textsuperscript{63}

This is also partially why galleys (powered by oars) continued to occupy an important place in the Ottoman navy. The systematic adoption of galleons started in the late seventeenth century, but this transformation proceeded slowly. According to Zorlu, an important reason for this was the Ottomans` reluctance to adapt to a new and unknown technology at the expense of their powerful galley tradition, especially in the midst of their rivalry with the Venetians. Abandoning a powerful tradition by which they established their hegemony in the Mediterranean could put them at a disadvantage against their rivals, and testing this possibility was, obviously, not attractive. But he adds that another important reason for this slow transformation was something that characterized the pace of transformation in other countries as well: a dramatic change in shipbuilding had to be slow because it would require the replacement of a large body of

\textsuperscript{62} Özveren, "Shipbuilding, 1590-1790," 21. Indeed, Aydın’s study on galleons and galleon-building in this period also confirms the dominance of caulkers at the expense of carpenters among registered workers. See Aydın, “Osmanlı Denizciliği (1700-1770),” 57.
\textsuperscript{63} According to Aydın, in this period, the daily wages of irregular workers did not change for decades. Only during and after the naval campaign in 1770, which led to higher demand for labor, their wages were increased significantly. See ibid., 71-72.
workers, crew and materials with new ones, and/or the training of existing workers for new
technologies and new ships. This, in turn, would make it necessary to develop a new system of
procuring labor and materials. This was a process, and, if these technologies and production
techniques had to be imported, not an inexpensive one, as they had to be accompanied by a
number of experts. Therefore, it was not surprising to see major transformations in the last two
centuries of the Empire coming only after major catastrophes that ended up with the destruction
of existing fleets and only under the leadership of those ambitious sultans who committed
themselves to constructing a powerful navy.

The Ottomans almost completely abandoned their galley tradition in favor of sailing
vessels after the naval disaster wielded by the Russians in Çeşme in 1770, during which the latter
destroyed almost the entire Ottoman fleet, including eleven ships of the line. Reform was
inevitable. With the initiative of the new Grand Admiral Hasan Pasha of Algeria (Cezayirli), the
Ottoman state implemented a number of reforms to reconstruct the navy with the help of foreign
advisors along modern lines. However, these reforms mostly focused on ships and their crews,
rather than the shipbuilding process in the Arsenal. Hasan Pasha ordered the construction of new
barracks for sailors (kalyoncu) in Kasımpaşa, in order to force them to stay and receive training in
winter, so as to create a disciplined corps of seamen. For the training of naval officers who would
serve on these ships, a new Hendesehane (Chamber of Mathematics) was established, which
would later be converted to a modern School of Naval Engineering (Mühendishane-i Bahr-i
Humayun) in 1784. With the help of such initiatives, the Ottoman navy was quickly
reconstructed, amounting to 90 pieces of ships, 18 of which were galleons. However, it did not

64 Zorlu, Innovation and Empire in Turkey: Sultan Selim III and the Modernisation of the Ottoman Navy, 5-6.
65 Ibid., 13.
help the Ottomans to stop Russia consolidating its control on the Black Sea during the war between 1787-1792, at the end of which the Ottomans permanently lost Crimea in addition to their coastal territories across the Dniester.

The “New Order” in the Imperial Arsenal

Selim III sat on the throne in the midst of this crisis, and he apparently was well aware that a more radical reform in the navy was vital to confront the Russian threat, and for this, he appointed a member of his close circle, Küçük Hüseyin Pasha, as the Grand Admiral of the Ottoman navy. A reform-minded and talented administrator who proved to be an ideal figure for carrying out Selim’s agenda in the navy, Küçük Hüseyin Pasha took radical steps in order to reform not simply the navy, but mostly the Arsenal itself, beginning with his appointment in 1792 and until his death in 1803. Unlike his predecessors, Hüseyin Pasha was acutely conscious of how important it was to reform the shipbuilding process in order to reform the entire navy. A contemporary account from a French traveler, G.A. Olivier, who apparently was not fond of the Pasha, dismissed him simply as an ignorant man who did not deserve his post, pointing out his lack of interest in training the mariners and developing the naval school. As Göyünç underlines, it was an apparently biased and misjudged view considering his structural reforms in the school of engineering, alongside his detailed proposal for the reform, which he submitted to Selim III in 1797. Despite his biases, Olivier’s description of Hüseyin Pasha proves the latter’s commitment

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68 Nejad Göyünç, "Hüseyin Paşa, Küçük," in TDV İslam Ansiklopedisi, vol.19 (İstanbul:1999).7. For the full text of Hüseyin Pasha’s reform proposal for the Mühendishane, and its analysis, see Mustafa Kaçar,
to the shipbuilding process: He was spending his entire day in the Arsenal, supervising workers and how they worked in the site, and paying strict attention to minute details. It would not, thus, be surprising to see that perhaps the most important concern of Hüseyin Pasha was giving an “order” to the shipbuilding process, which had thus far been characterized by its opposite, flexibility and irregularity, of not only the production process, but also the process by which workers were mobilized, recruited, and employed in the Arsenal.

We have just discussed the reasons that pushed the administration to abandon its regular employment policy in favor of casual labor and outsourcing in the eighteenth century, and Hüseyin Pasha’s reforms seem, at first sight, as a reaction to this shift. However, this shift actually referred to only a degree of flexibility, rather than to a full-scale transformation from regular to irregular employment. Even at the end of the sixteenth century, when registered craftsmen numbered almost a thousand in the Arsenal, the production process was always characterized by a mostly casual labor force operating in a “flexible organization”, by which the Arsenal resembled an “industrial district” where different workshops operated separately but in parallel to each other, unlike its Venetian counterpart. The Arsenale in Venice, on the other hand, thanks to its peculiar landscape, operated as an “assembly-line”. After a hull was built in the remotest section of a basin, other parts were added and equipped as it moved down the basin through various workshops until it reached the outlet. Thus, in the mid-sixteenth century, this meant the standardization of production and a tight supervision of labor. In its most glorious

"Osmanlı İmparatorluğu'nda Askeri Teknik Eğitimde Modernleşme Çalışmaları ve Mühendishanelerin Kuruluşu (1808'e Kadar)," Osmanlı Bilimi Araştırmaları, no. 2 (1998).


years, the efficiency of production in the Arsenale took the form of a pompous performance when a galley could be produced from scratch, and then launched, all within two hours during the visit of French king Henry III.\textsuperscript{71}

Özveren and Yıldırım argue that this difference was rooted in the availability and accessibility of resources. As opposed to the Tersane, the Venetians lacked the availability of vast resources for shipbuilding, and thus had to invest in a more aggressive policy of efficiency and exploitation in order to compensate the scarcity of their resources. The Ottomans, on the other hand, enjoying their vast domestic resources, did not need to concern themselves as much with the efficiency and quality of their production: “Because they trusted their supplies they could treat the ships they built as renewable.”\textsuperscript{72} Thus, a casual labor force was already a direct fit to such a flexible production process. Against the registered craftsmen, the overwhelming majority of the labor force, particularly carpenters and augerers, were either hired or impressed, mostly in coastal provinces, and brought to the Arsenal, even before the eighteenth century.\textsuperscript{73} What happened in the eighteenth century seems to be a gradual shift to outsourcing and piecework by utilizing the established system of independent workshops and guilds around the Arsenal, facilitated by the advantage of relative peace in the Mediterranean which released pressures for a continuous and standardized construction in these yards.

Immediately after his appointment by Selim III as the Grand Admiral in 1792, Küçük Hüseyin Pasha with the Superintendent of the Arsenal (Tersane Eminî), devised a comprehensive reform proposal for the Arsenal, which turned into a regulation following the approval of the

\textsuperscript{71} Özveren, "Shipbuilding, 1590-1790," 21.
\textsuperscript{72} Özveren and Yıldırım, "Procurement of Naval Supplies During the 16th Century: The Venetian Arsenale and the Ottoman Tersane Compared," 203-04.
\textsuperscript{73} Bostan, Osmanlı Bahriye Teşkilâtı: XVII. Yüzyılda Tersâne-i Âmire, 71-81.
The sections of the regulation, which specifically concerned the shipbuilding process and the labor force, demonstrate that these reforms directly targeted the above-mentioned characteristic of the labor relations in the Arsenal, at the flexibility of the production process and the parallel irregularity of labor provision.

The regulation, the text of which was reproduced by the Ottoman chronicler Halil Nuri Bey, mainly promised to reorganize the primary group of workers, the carpenters, and it gives us a long justification as to why these carpenters needed an “order” (nizam). Accordingly, these carpenters were severely underpaid, although they were the most important group of craftsmen in the Arsenal. They were paid 12 para per day, as opposed to those who were working in private yards or other constructions outside the Arsenal, who were usually paid 60 para (1.5 piasters), and sometimes 2 piasters. As these carpenters were not legally bound to the Arsenal (“bir suret ile başları başlı olduklarından”), they were running away as soon as they found the opportunity to do so, and they could only be brought back by impressment. As a result, not only the number of carpenters remained far less than the Arsenal required, but also those working were forcefully employed and thus not efficient at all. 75

The new Kapudan Pasha was aware of this problem, and the most ideal remedy was to increase the wages so that the Arsenal could compete with the market. However, within the current fiscal circumstances, the maximum amount of wage that could be paid to those carpenters was 40 para, which would still remain lower than the market wage. Adding to this was the fact that the carpenters, though the most important body of workers, were not the only group in the Arsenal. An increase in carpenters’ wages would immediately lead to similar requests by

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74 Vak’anüvis Halil Nuri Bey, Nüri Tarihi, ed. Seydi Vakkas Toprak (Türk Tarih Kurumu Basımevi, 2016), 356-78.
75 Ibid., 375.
ropemakers, caulkers, porters and other laborers. According to the nizam, funding such an overall increase in wages would undermine the Treasury.\textsuperscript{76}

So what was to be done? The nizam offered an alternative option to resolve the problem. It argued that the Arsenal needed around 500 carpenters with 150 augerers, and proposed to grant them a regular slot (gedik) as a solution. Actually, the text implies that two-decker galleons (kapak kaldırır kalyonlar) and flagships (sancak gemileri) were already employing six to eight carpenters and augerers on each ship. Their numbers would be increased to 15 carpenters for each of the 15 galleons, and to 10 for each of the remaining 25 vessels. As a result, there would be 475 carpenters in total, and registered augerers would similarly be increased to 150 workers. In the spring, some 80 to 100 of these carpenters and 50 to 60 of these augerers would be assigned to the ships and go away with the seafarers. The rest would remain in the Arsenal, and in addition to their ulufes (three monthly salaries) and tayinats (rations) which they would receive all the year as part of their gediks, they would be paid 12 para for each day they were employed in the Arsenal, just like other workers, subject to the attendance taken each day by the official who was in charge of this task (yoklamacı). They would not be allowed to work elsewhere, as now they would be among the registered employees of the Arsenal. And, in fact, the authors of the regulation were hopeful that they would not opt to work elsewhere, as gedik would give them a status, aside from the fact that their real wages (including ulufes and tayinats) would now amount to around 30 para, higher than other workers. In an attempt to maintain the standard of skilled labor and production, the regulation also stipulated that for the continuity of this community of carpenters and augerers, they would be assigned around 40 “healthy and talented” apprentices, who would replace their journeymen.\textsuperscript{77}

\textsuperscript{76} Ibid., 376.
\textsuperscript{77} Ibid., 376-78.
Another important step that Hüseyin Pasha took apparently after the introduction of the *nizam*, targeted the second most important group in the Arsenal, the caulkers. Mahmud Raif Efendi, who introduced an account of the New Order reforms in 1798, points out to the absence of a “regular corps of caulkers” (*corps de calfates réglé*) prior to these reforms as the primary reason for water leaking into the ships. He then praises Hüseyin Pasha for bringing in 200 skilled Arab caulkers from Egypt in order to prevent it, as a result of which, he argues, the problem was solved to the extent that the ships could now sail for up to three or four years. The government not only built a barrack for these caulkers, but also provided their food and clothing. In this way, a regular body of skilled caulkers was created in the Arsenal.

Such reforms by Küçük Hüseyin Pasha apparently aimed at increasing standardization and productivity in the shipbuilding process. In other words, it seems that the same concerns that troubled the Venetian administrators in the sixteenth century started to worry the Ottoman administrators in the late eighteenth century. Was it for the same reason as the Venetians, namely, the scarcity or inaccessibility of resources? Zorlu refuses the idea that the decline of timber supplies in Western Anatolia was a reason for reforms and the late adoption of galleons in the Ottoman navy, since particularly Albania and Black Sea lands were rich in oak wood, and the Ottomans continued to rely on their timber supplies from the lands along the Sea of Marmara and the Aegean Sea. However, the availability of a resource is different than its accessibility. The

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78 Mahmud Raif Efendi’s work, originally in French, was reproduced along with his Turkish manuscripts in Kemal Beydilli and İlhan Şahin, "Mahmud Raif Efendi ve Nizâm-ı Cedid’e Dair Eseri," (Ankara: Türk Tarih Kurumu Yayınları, 2001). See p. 224 (French), and p.78 (Turkish) for the paragraph on Arab caulkers. The Turkish manuscript refers to their place of origin as “Kahire-i Mısır”, whereas the French version simply uses Egypt. The Ottoman archival documents from early nineteenth century, including their wage registers, usually refer to them as the “Alexandrian caulkers” (Kalafatçıyan-ı İskenderi).

Ottomans, in the classical era, were receiving these materials in the form of a tax, called *avarız*, which was levied on people living in a designated territory, called *ocaklık*. In this system, a territory rich in timber, for example, was assigned to the Arsenal as *ocaklık*, and its residents were required to cut and send a required amount of timber to the Arsenal as their *avarız* taxes. According to Özveren and Yıldırım, the system started to crumble with the introduction and intensification of the tax-farming (*iltizam*) system, through which the government started to receive direct cash rather than materials. Thus, by the late eighteenth century, supplying these materials directly through *ocaklık* and *avarız* had become unfeasible. As the government increasingly resorted to mediating merchants for these materials, the cost of supplying them increased. This must have amounted the pressures on Arsenal administrators to use these materials more efficiently, which necessitated the reorganization and discipline of the production process. Efforts to reorganize the main groups of workers in shipbuilding under Selim III at least partially emanated from this pressure.

As a matter of fact, shortage of labor and problems of efficiency did not strike only the Ottoman arsenals during this period. In response to its growing need for manpower in shipyards, the French government systematized its impressment system, and had the power to conscript labor from private yards. Such a solution to the problem of labor shortage was definitely not a remedy for the problem of efficiency, though. The royal dockyards in Britain, on the other hand, unable to compete with the private yards in spite of their own success in maintaining the most powerful fleet in Europe, tried to solve this problem first by reforming the apprenticeship

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80 Özveren and Yıldırım, "Procurement of Naval Supplies During the 16th Century: The Venetian Arsenale and the Ottoman Tersane Compared," 197.


58
system in order to guarantee the continuity of skilled labor, which proved not a big success. Throughout the same period when the New Order reforms were implemented in the Ottoman Imperial Arsenal, the British navy also introduced a “task work” system in the Royal Dockyards, to replace the payment of daily wages. It faced a mounting challenge from dockyard workers, delaying its adoption for more than a decade.\textsuperscript{82} Although this did not stop the government resorting to impressment especially during wartimes, the policy could not be systematized as attempts for this purpose failed in parliament. According to Knight, this inability worked to the advantage of the British, since “the ability of any European country to harness skilled shipbuilding labour … was the single most important factor in creating and maintaining an effective fleet in eighteenth century Europe.”\textsuperscript{83} The Ottomans most likely had an idea of these developments in Europe, as many foreign advisors and engineers, particularly French and Swedish, took part in the modernization efforts in the Ottoman navy during this period.\textsuperscript{84}

It is obvious that Hüseyn Pasha’s reforms seem to have reflected such a concern for creating and maintaining a regular class of skilled shipbuilders. Although Hüseyn Pasha died in 1803, reforms continued in the navy and the Arsenal, which were arranged into a new Code (\textit{Kanunname}), issued by the Sultan in 1804.\textsuperscript{85} In this period, wages of carpenters and augerers were also raised.\textsuperscript{86} The reforms succeeded at least in creating a regular and skilled labor force in the Arsenal, even after the fall of Selim III in 1807. Indeed, by the 1830s, the Arsenal was still

\begin{itemize}
\item \textsuperscript{82} Ibid.
\item \textsuperscript{83} Ibid., 15.
\item \textsuperscript{84} See İdris Bostan, "Osmanlı Bahriyesinin Modernleşmesinde Yabancı Uzmanların Rolü (1785-1819)," \textit{Tarih Dergisi}, no. 35 (2011).
\item \textsuperscript{85} For details of this code, see Gencer, \textit{Bahriye'de Yapılan Islahât Hareketleri ve Bahriye Nezâreti'nin Kuruluşu (1789-1867)}, 67-89.
\item \textsuperscript{86}According to the Code of 1827, from 1805 until 1827, carpenters and augerers received 33 \textit{para} a day, whereas their journeymen were paid 1 piaster, and their apprentices received 10 \textit{para}. BOA.A.(DVNS.KNA.d.06/97, Evail-i Rebiülevvel 1243 (22 September-1 October 1827). See Chapter 2 for details of the Code.
\end{itemize}
drawing on a regular and highly organized class of skilled carpenters, augerers, and caulkers, as evidenced by the registers of the period. According to a register for August 1834, for example, there were 508 carpenters, 141 Alexandrian caulkers, and 148 augerers, apprentices included. In the register, carpenters were divided into 80 different columns (kol/posta), each consisting of 3-11 workers. At the head of each these kols were the journeymen (kalfa), who were seconded in rank by chief workers (başnefer), who could be more than one. In each column, there were at least one or more apprentice. Augerers and caulkers were organized in the same way, though the former divided into two different categories along religious lines. 19 columns of 109 Muslim augerers were accompanied by 6 columns of 39 non-Muslims.87

This organization was largely a result of a new code that particularly addressed the problems of efficiency and productivity, since the continuity of this regular and skilled labor force proved to be insufficient to solve these problems by the end of 1820s. As naval reforms largely stopped after the fall of Selim III, the Ottoman government seemed to have less interested in naval production, at least until the 1820s, when wars and rebellions forced them to focus back on the Arsenal. The Naval Code of 1827, which was a sign of commitment to a new wave of reforms in the navy and the Arsenal, also informs us about the state of this regular force by this time. Accordingly, because wages were not raised since 1805, and thus remained far lower than the market, carpenters and augerers were refusing to work for more than a few hours, and when they worked, they were more concerned with stealing chips, nails, and other materials to sell them as a way to compensate for their low wages. As a result, the navy lost large amounts of raw materials, and this was not only due to theft. Carpenters, who were “more interested in producing chips” than shipbuilding, wasted timber in order to have more chips. As a remedy to this concern,

87 DMA.Env.224, Rebiülahir 1250 (August 1834).
the Code raised the wages of journeymen from one to three piasters. These journeymen would each be assigned around 10 workers, who would be divided into “first-class” (to be paid 100 para/day) and “second-class” workers (80 para/day), according to their skill and experience. The wages of apprentices were also raised from 10 to 20 para.88

**Casual Labor in the Nineteenth Century**

Even in the late eighteenth century, the Ottoman state elites were aware of the fact that this regular class of workers, numbered around 700, and which included the Alexandrian caulkers, would not solve the problem of labor shortage, especially during wartimes. In this period, Hüseyin Pasha and other members of the naval elite were extremely concerned with creating a large and powerful navy as quickly as possible, which led Olivier to argue that Hüseyin Pasha equated a powerful navy with the highest number of warships.89 This obviously required much more than a few hundred skilled shipwrights and caulkers. Thus, from time to time, the naval administration continued to supplement them by means of casual labor, that is, workers who were drafted on a temporary basis, from the guilds in Istanbul, from the provinces, and from convicts who were imprisoned in the Bagnio within the Arsenal. The numbers of these drafted workers varied according to the pace of production in the Imperial Arsenal, which dramatically increased or decreased in line with the periods of war and peace. As Faroqhi observed, “these violent ups and downs explain why the Arsenal often must have kept only a limited permanent staff and relied on drafted labor in periods of peak activity.”90

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88 BOA.A.{DVNS.KNA.d.06. p.97-98.
89 Olivier, *Voyage Dans L'Empire Othoman, L'Egypte Et La Perse*, 33.
Ottoman rulers, from time to time, drafted craftsmen in Istanbul and in other provinces to work in state manufactures and construction projects, particularly for the provisioning of the army and the navy. Since they were either not paid or paid below the market rates, this mostly amounted to impressment, which led Faroqhi to conclude that “it makes sense to regard them as coerced labor for at least part of their lives.”  91 As part of his reforms to reorganize labor, Küçük Hüseyin Pasha made use of this traditional practice most likely to overcome the problem of recruiting unskilled labor for the Arsenal. Accordingly, each guild in Istanbul was required to provide the Arsenal with a designated number of laborers drafted from among its members every day, with wages lower than they otherwise regularly earned.

The enforced mobilization of guildsmen was in fact the most ideal option on the table for the administration. Compared to workers who would be drafted from the provinces, mobilizing guildsmen forcefully was not only cost-efficient but also politically more reliable. In fact, considering the increasing concerns with the presence of migrant laborers in the city, the employment of guildsmen would shield Ottoman rulers from the need to depend on a labor market composed of unemployed workers (or “vagrants”), potentially ready to explode in political rebellions in the capital. Thus, it is not a coincidence that the policy was introduced in an era which witnessed a substantial transformation in social control policies against the migrant poor in Istanbul. In the late eighteenth century, problems in the provisioning of the capital city and the decreasing control of provinces, coupled with the fear of urban rebellions, led the ruling elites to conclude that “the unstoppable influx of immigrants and refugees had become a major

91 Ibid., 19.
factor in contributing chaos and social instability in the city.”\textsuperscript{92} Thus, mobilizing guildsmen for the Arsenal would not only allow the administration to solve the labor scarcity problem that might hinder dramatic construction efforts in the Ottoman navy. It would also remove the dependency of the government on migrant labor, and thus would enable the Sultan to issue orders that aimed to check and stop the overflow of migrants into the city. These orders were further consolidated by the increasing control and surveillance of guilds in Istanbul, requiring every migrant guildsman to have a bailsman among other fellow guildsmen in order to stay and work in the city. As part of these efforts, inspection registers were also held on a regular basis.\textsuperscript{93} In a way, this practice would serve both the socio-political and economic interests of the ruling elite in Istanbul.

Although the naval reforms and the pace of production in the Imperial Arsenal significantly stopped after the overthrow of Selim III, the policy initiated by Hüseyin Pasha continued under the era of Mahmud II (r.1808-1839). Documents from this era show how this practice became a domain for negotiation and struggle between the guildsmen and the Ottoman government, which ended with its abolition in 1837. Although the guilds continued to be legally bound to send a certain number of men every day, periods of low production seem to have led the government to alleviate the pressure on these guilds. According to a document in 1815, for example, although porters who carried their staff on poles (\textit{sırık hamalları}) were legally assigned to send 72 men daily, the number of porters who came in person declined to 32 with time. This


\textsuperscript{93} Ibid., 106. These registers, which were held every six months, also give historians valuable information on the state of the labor force under the guilds, including migrant labor, in Istanbul during the early 1790s. For details on the profile of this labor force, based on these registers, see Betül Başaran and Cengiz Kirli, "Some Observations on Istanbul’s Artisans During the Reign of Selim III (1789-1808)," in \textit{Bread from the Lion’s Mouth: Artisans Struggling for a Livelihood in Ottoman Cities}, ed. Suraiya Faroqhi (New York; Oxford: Berghahn Books, 2015).
situation led the administration to renegotiate the assignment with the stewards, due to the increased demand for porters at the time. As a result, the daily assignment was decreased to 62 men.\textsuperscript{94} According to another document from 1821, we learn that although fishermen and salt workers had originally been assigned to send 25 workers in summer and 40 workers in winter, they were later pardoned for the 15 workers in winter as a result of their requests. However, in 1821 the Arsenal again requested the employment of the formerly agreed upon number of workers from boatmen and salt workers in winter, due to an increasing need for labor.\textsuperscript{95}

The abolition of this practice in 1837 had much to do with its unpopularity among the guildsmen of Istanbul, which most likely became of greater concern for the Ottoman state elites in the midst of a legitimacy crisis during a chaotic period. During the Greek War of Independence (1821-1832), Sultan Mahmud II abolished the Janissaries, the centuries-old imperial guards who had repeatedly proved to be the ultimate kingmakers in the capital, after bloodily repressing their last rebellion in 1826. What the Ottoman chroniclers dubbed “The Auspicious Event” came at an ominous time for the Ottoman state, however. Only a year later, in 1827, the Ottoman navy was almost completely destroyed by the allied British, French and Russian fleets in the Battle of Navarino, after the Ottoman Sultan refused the mediation of European powers in Greece. Adding insult to injury, in the Ottoman-Russian War of 1828-29, the Russian armies inflicted heavy defeats on the Sultan’s armies, paving the way for serious concessions and losses to the Russians in the Balkans and the Black Sea, and eventually for the full independence of Greece in 1832.\textsuperscript{96}

This series of events encouraged internal rebellions against the dynasty, which gained a new

\textsuperscript{94} DMA.MKT.1/55, 28 Zilkade 1230 (1 November 1815).
\textsuperscript{95} BOA.C.BH.180/8445, 26 Cemaziyülevvel 1236 (31 March 1821).
momentum with the rebellion of the Egyptian governor Mehmed Ali Pasha, whose armies destroyed those of the central state, dealing perhaps the most striking blow to the political legitimacy of the dynasty among the lower classes in Istanbul, including the guildsmen.97

Aside from its unpopularity, the reason to terminate the policy also emanated from increasing concerns for efficiency and productivity, and that was exactly why replacing these guildsmen with wage workers was one of the first steps of Safveti Musa Bey, who would initiate a dramatic reorganization program for the labor force during his short tenure as the undersecretary of the Ministry of Marine (Bahriye Nezareti) in 1837.98 At this point, 1,247 workers were employed every day through these guilds in the Arsenal.99 A correspondence on this process clearly referred to the problem of productivity, the main reason of which was the guilds’ resistance to this practice. According to a document dated 1838, the primary reason to abolish this obligation was the fact that the workers sent by these guilds did not address the Arsenal’s need for workers with experience, skill, and willingness to work.100 Their daily wages were low, and apparently for this reason, most of the men sent by the guilds happened to be young and inexperienced, most likely the apprentice children in these guilds (“çoluk çocuk makalesi”). According to the document, although these workers were supposed to receive an

97 This process also led the ruling elites to systematically gather information about the opinion of ordinary people through the reports of the spies (havadis jurnalleri), who particularly used the coffeehouses for this purpose. See Cengiz Kırıl, Sultan ve Kamuoyu: Osmanlı Modernleşme Sürecinde "Havadin Jurnalleri," 1840-1844 (İstanbul: Türkiye İş Bankası Kültür Yayınları, 2009).
98 BOA.HAT.1265/49014 (undated). The post of undersecretary (müsteşar) was launched in 1837, as part of reform efforts in the navy during the final years of Sultan Mahmud II. Its main role was to oversee the budgetary issues in the Arsenal. Gencer underlines that, in practice, it simply reflected a name-change by replacing the former post of the “Superintendent of the Arsenal” (Tersane Emin). See Gencer, Bahriye’de Yapılan İslahat Hareketleri ve Bahriye Nezâreti’nin Kuruluşu (1789-1867), 121. Safveti Musa, as the first occupant of this post, remained here until 1839. As Safveti Musa Pasha, he became one of the prominent members of the Ottoman bureaucracy in the Tanzimat Era, occupying several posts of importance in the following two decades. See Mehmet Süreyya Bey, Sicill-i Osmanî, vol. 5, ed. Nuri Akbayar and Seyit Ali Kahraman, (İstanbul: Tarih Vakfı Yurt Yayınları, 1996), 1434-35.
100 Ibid.
extra amount of cash in the form of a donation (*iane*) by means of their stewards and headmasters, most of the time the money did not even reach the youngsters, due to embezzlement.\footnote{Since guilds were obliged to donate a certain amount of money to their workers sent to the Arsenal, this was perceived to be an extra tax by these guilds. See, for example, BOA.HAT.573.28082 (undated), in which the carpenters’ guild in Istanbul proposed that the donation they paid for the carpenters they sent to the Arsenal was so unaffordable for the guild that the amount to be paid should be shared to the other guilds who essentially practiced the same craft with carpenters, such as the masons. The document, which details negotiations between the guilds, bureaucracy and judiciary, also refers to the donation as a “tax” more than once.} As a result, losing their willingness to work, these youngsters could only be put to work “reluctantly” (*kerhen*) in the Arsenal. This kind of employment, as the document admits, was of no use to the Arsenal, nor to these guildsmen.\footnote{BOA.C.BH.53/2491.} Indeed, the latter apparently suffered from frequent job accidents as well, most likely due to their youth and inexperience, something which remained part of guildsmen’s collective memory for decades after the end of the practice. A petition from fruit-sellers about the arsenal tax in 1873 begins with an emphasis on how this practice, implemented “before the Tanzimat”, led to deaths and injuries among those sent by the guilds.\footnote{BOA.ŞD.2872/50, 22 Zilkade 1289 (21 January 1873).}

In the end, in 1837, this practice was abolished on behalf of a tax interchangeably called “payment in lieu of labor” (*amele bedeli*) or the “arsenal tax” (*tersane vergisi*).\footnote{The tax was introduced beginning from Ramazan 1253 (November/December 1837). BOA.MAD.d.8882/182. This tax was levied until December 1880, when it was abolished after the introduction of a property tax. See Osman Nuri Ergin, *Mecelle-i Umûr-i Belediyye* (İstanbul: İstanbul Büyükşehir Belediyesi, 1995), 1367.} The idea was that instead of forcefully employing the guildsmen of Istanbul in the Arsenal, the tax would fund the wages of workers who would be hired from the labor market. These workers were supposed to be more productive, since they would be chosen by the administration according to their skills
and other qualifications, and their wages would not be a burden on the Treasury since they would
directly be funded by this tax.\textsuperscript{105}

The Ottoman bureaucrats who made the new arrangement in 1837 most likely were
relying on the success of this practice in previous periods, and were assuming that the guilds
would be able to pay these taxes regularly, since their income would likely be stable in a
controlled market in Istanbul. Beginning with the second half of the eighteenth century,
guildsmen in Istanbul had the ability to monopolize their own trades by means of owning a
“gedik”, literally a slot in a specific trade. Although the \textit{gedik} originally referred to the ownership
of tools and assets, by the mid-nineteenth century it described the claims of the artisans not only
to a specific set of tools and skills but also to “the exclusive right to practice that trade, and
entitlement to the use-right of a work premise associated with that group.”\textsuperscript{106} The system allowed
the government to keep guilds and their members under control, but it also gave the guilds the
ability to protect themselves from competition by restricting the right to enter the trade from
outside.\textsuperscript{107}

Funding workers` wages through tax collection was a difficult task to accomplish in a
capitalist context. The policy assumed that these guilds would be able to pay their taxes regularly,
that the amount of these taxes could match the fluctuations of wages led by market dynamics, and
that the state could efficiently manage the contradiction between the workers` continuous

\textsuperscript{105} This was not a totally new practice in Ottoman history. From time to time, the guilds were obliged to
send men directly or rather pay a certain amount of money as \textit{bedel} (payment in lieu) through which the
men could be hired by the Ottoman navy. In the seventeenth century, for example, free oarsmen were
hired by means of these funds. See Bostan, \textit{Osmanlı Bahriye Teşkilâtı: XVII. Yüzyılda Tersâne-i Amire},
199-203.

\textsuperscript{106} Engin Deniz Akarlı, "Gedik: A Bundle of Rights and Obligations for Istanbul Artisans and Traders,
Alain Pottage and Martha Mundy (Cambridge: Cambridge University Press, 2004), 170.

\textsuperscript{107} Ibid., 190. Indeed, it was most likely due to this concern that the barrel makers in the early 1830s asked
for the issuance of a \textit{gedik} for their guild, on the basis of their service to the Arsenal. See
BOA.HAT.576/28167 (undated).
demands for wage increases and the guilds` persistent pressures for freezing, decreasing or abolishing these taxes. The absence or mismanagement of these conditions would immediately affect production in the Arsenal, since low wages and irregularities in timely payment would undermine the Arsenal` s competitiveness in the labor market as an employer, and lead to the loss of skilled and experienced workers to other employers and generally to a high turnover. Thus, dependence on regular taxes from guilds for the maintenance of labor costs was premised on efficiency in tax collection and the guilds` ability to pay those taxes regularly.

As the economic integration of the Ottoman Empire into world capitalism gradually increased throughout the mid-nineteenth century, however, the competitive power of many of the established guilds weakened, which in turn decreased their income and reduced their ability to pay their taxes regularly. Indeed, pardon requests from the guilds characterized the relations between the Ottoman government and Istanbul guilds throughout this period. In many of those petitions, guildsmen referred to the increasing penetration of outsiders into their specific trade. The intrusion of newcomers to a trade did not only mean the violation of their gedik rights, which eroded their competitive power and reduced their income. As the Ottoman government loosened its tight control of the market and gave way to more liberal market policies especially due to the trade agreements with Europe, many of those newcomers were not required to register to the guilds, and thus, were not required to pay the arsenal tax assigned to guild members in Istanbul. As a result, this tax increasingly led to a competitive disadvantage for the guilds, and thus to their frequent petitions asking for exemptions from this tax throughout the Tanzimat period.109 In

108 For an account of how the Ottoman guilds coped with these new circumstances by different means of adjustment, see Faroqhi, *Artisans of Empire: Crafts and Craftspeople under the Ottomans*, 186-207.
109 For examples of pardon requests of guilds in the 1840s and `50s, complaining that the increasing penetration of non-guild competitors into their crafts, against their privileges granted by their gediks, made this tax unaffordable and unjust for them, see BOA.ŞD.2872/50; BOA.İ.MVL.67/1271; BOA.İ.MVL.237/8392, and BOA.ŞD.2872/50. In one case, upon the complaints of guilds, some Catholic
response to such a disadvantage, some members of these guilds sought ways to evade paying their own share, as in the case of some guildsmen within the guild of vegetable-sellers (sebzeci esnafı) who replaced their license with that of fruit-sellers (manav esnafı), while continuing to sell vegetables, so as to lower their tax burden.\footnote{110} 

As explicitly admitted by the bureaucrats throughout these documents, almost all of the guilds had major complaints and periodically demanded temporary or permanent exemptions from this tax. It seems that most of these petitions were rejected on the ground that any concession to a guild would immediately be acted upon by others as well.\footnote{111} However, these complaints were not ineffective, as rejections for these pardon requests were accompanied by orders encouraging officials “not to squeeze” the guilds for these taxes, even if officially they were not being granted an exemption.\footnote{112} 

Such problems with the collection of these taxes could be tolerable insofar as the administration could control and contain the demands and expectations of wage workers, whose wages were financed by these taxes. The government’s tolerance toward the guilds for the timely and full payment of these taxes would unsurprisingly lead to frequent delays in the payment of wages to civilian wage workers, at times for long periods. As a result, the more the administration was dependent on guild taxes for funding the wages of civilian workers, the more it had troubles

carpenters and masons, who bragged about not paying the tax most likely because they were under the protection of European states, were organized into a guild and were levied the arsenal tax by an imperial decree. See BOA.A.MKT.NZD.249/68, 21 Cemaziyülevvel 1274 (7 January 1858). \footnote{110} Upon complaints by the vegetable-sellers, these guildsmen were penalized and obliged to pay their share from the amount assigned to vegetable-sellers in 1872. BOA.ŞD.676/9, 13 Rebiülevvel 1289 (21 May 1872). \footnote{111} The principle of “not spreading” such exemptions, as it would undermine the payment of wages, was the reason as to why a petition of the guild of caviar-sellers in Galata in 1858, who demanded a pardon since almost half of their shops had recently been closed, were rejected by the Grand Admiral. BOA.MVL.816/62, 11 Rebiülahir 1275 (18 November 1858). \footnote{112} See, for example, BOA.İ.MVL.237/8392, 6 Şaban 1268 (26 May 1852) and BOA.İ.MVL.67/1271, 21 Receb 1261 (26 July 1845).
paying these wages. These problems not only led to a frequent turnover, especially by foreign workers, as we will see in Chapter 3, but Ottoman officials also complained that wage laborers continuously pressured the naval administration to increase their pay and to make these payments on time.

Thus, the method adopted by the Ottoman authorities to switch to a modern wage labor regime by taxing guilds was not compatible with the realities of the capitalist system, which increasingly characterized and shaped the Ottoman economy through the mid-nineteenth century. It seems that the state elites were aware of this problem from the very beginning. At exactly the same period when guildsmen were replaced by wage workers, the naval elites started to seek a more permanent and reliable alternative to wage labor, which would be more compatible with the demand of industrial capitalism for skilled, disciplined, and cheap workers. As a result, they put the newly introduced system of conscription in the service of production in the Arsenal, as we will see in the following chapter.

**Provincial Draftees**

Who were these wage workers to replace the coerced guildsmen of Istanbul? Although another document suggests that these were hired “by their own will” (husn-i rizalartyyla), this should...

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113 Rejecting a pardon request by the barrel makers in 1842, the Higher Council (Meclis-i Vala) emphasized that this could not be possible as the workers in the Arsenal were not paid low anymore, that their wages had to be compatible with the labor market, and that this could only be afforded by the Arsenal through these taxes. See BOA.İ.MVL.39/734, 24 Rebiülahir 1258 (4 June 1842).

114 For example, in 1855, the government had to increase their wages, on the basis that workers doing the same job outside the arsenal received “a few times times higher” than what the Arsenal paid. See BOA.A.MKT.NZD.156/79, 17 Zilkade 1271 (1 August 1855). In another case in 1849, the administration had to increase the wages of the 155 workers in the Ironworks (Demirhane), in spite of the heavy costs of this increase on the budget, after admitting that without doing so would only lead these workers to amount their harassments (ta’ciz) and to stop working (ta’til). See DMA.Env.341/32, 7 Cemaziyülahir 1265 (30 April 1849).

115 BOA. HAT 1243/48301B (undated).
not mislead us to conclude that these workers were mostly recruited from a wage-labor market characterized by “free labor”. This largely seems not to have been the case, mostly due to the above-mentioned strict policies controlling immigration to Istanbul. As a result, the navy mostly continued the traditional practice of drafting craftsmen from Istanbul and the provinces in the mid-nineteenth century. As we will see, these workers would simply be defined as wage-workers or civilian (başbozuk) workers in the Tanzimat Era. However, this does not mean that all of them were free workers, just because they were receiving wages and they were seen as such by the authorities. Whether they were coerced, or to what extent this was the case, remained largely vague, and can only be understood when analyzed in connection to the earlier practices of labor draft from the provinces. In other words, only by analyzing the historical relations between the Ottoman state and the provincial subjects around the issue of labor draft can we realize why this was a largely coerced practice; and only in this way can we understand why a plan that relied on drafting these “wage workers” as an alternative to coercing the guildsmen of Istanbul was largely problematic, since the former practice as well became more and more controversial and unjustified during the Tanzimat Era.

Before the Tanzimat Era, for centuries, if the craftsmen drafted from Istanbul did not address the demands of production in state establishments, the Ottoman state would draft workers from the provinces. From time to time, the government sent an imperial decree by the Sultan to the judge or the administrator of a district, to round up a certain number of men, mostly from among “the young and the healthy” as well as those with certain occupational qualifications, and send them to Istanbul. According to Faroqhi, “upon arrival, measures were taken to prevent their escape. They frequently were lodged together in the same khan that was locked up overnight.
Non-Muslim draftees sometimes were required to hand in their poll-tax receipts for the current year.\textsuperscript{116}

The Imperial Arsenal utilized this source especially in wartimes, marked by a persistent demand for labor, mostly for carpenters, augerers and caulkers, the main crafts needed to build ships. In many cases, officials from the center were sent to the districts located around Istanbul and along the Black Sea and the Mediterranean, to round up these workers.\textsuperscript{117} These coastal districts were assigned with such obligations not simply because the residents of coastal areas were more likely to be familiar with ships and shipbuilding. Since recruitment entailed a level of coercion, the assignments were to address the localities accessible to the central bureaucracy. Therefore, aside from the provincial officials, religious communities were also asked to send laborers for the navy and the Arsenal. Thus, that a considerable part of these laborers were non-Muslims not only had to do with the demographic characteristics of coastal cities, but also with the capability of non-Muslim religious communities to reach local districts by means of their extended bureaucratic networks in distant provinces.

In the early nineteenth century, although the Imperial Arsenal employed a regular group of carpenters, augerers, and the Alexandrian caulkers, and although the guilds in Istanbul provided the Arsenal with a regular labor force on a daily basis, the administration still had to seek the employment of craftsmen in Istanbul and the provinces whenever the regular corps did not address the necessities of production, either due to lack of skills, or to low numbers. Preferably, the government contracted the tasks that were needed regularly but did not require continuous employment to the craft guilds in Istanbul. For example, the copper plates of vessels

\textsuperscript{116} Faroqhi, "Labor Recruitment and Control in the Ottoman Empire (Sixteenth and Seventeenth Centuries)." 24-25.
\textsuperscript{117} For the mobilization of such irregular workers for the Imperial Arsenal in the seventeenth century, See Bostan, \textit{Osmanlı Bahriye Teşkilâtı : XVII. Yüzyılda Tersâne-i Âmire}, 71-81.
were contracted to the boilermakers` guild, who performed this task, whenever demanded, by means of their furnaces within the Arsenal. In case these furnaces could not meet production needs, as happened in the early 1820s, the government either demanded the increase of furnaces within the Arsenal and/or allowed them to continue production within their own shops.\textsuperscript{118} This method of contracting the tasks to guilds also allowed the government to sustain its migration policy dating from the late eighteenth century, as migrant workers were mostly brought by means of these guilds. As the boilermakers` case shows, however, these migration policies sometimes impeded the pace of production in the Arsenal. In 1820, for example, the government asked the steward and the masters of boilermakers to increase the production by raising the number of furnaces from three to five. However, they responded that their workers mostly were brought from the Trabzon area, on the Black Sea, but recently for some reason even those who temporarily left to visit their families were not allowed to travel back to Istanbul. As a result, the government ordered permissions to be given to such workers to travel to the capital.\textsuperscript{119}

The demand for production increased due to wars and rebellions, such as the era that started with the rebellion of the Ali Pasha of Janina in the Balkans in 1820, and continued with the Greek War of Independence, the Battle of Navarino, and the wars with Russia throughout the decade. In such periods, the tasks for building and maintaining ships demanded a large number of shipwrights, particularly carpenters, augerers, and caulkers. Since the Arsenal could not address this demand by means of its regular corps or the guilds of Istanbul, the government issued an imperial decree asking for a certain number of these craftsmen from the provincial districts close to the capital. As a result, the government frequently sent orders to the coastal areas close to

\textsuperscript{118} BOA.C.BH.61/2884, 26 Cemaziyülevvel 1235 (11 March 1820) and BOA.C.BH.218/10156, 5 Cemaziyülevvel 1237 (28 January 1822).
\textsuperscript{119} BOA.C.BH.61/2884
Istanbul, around the Sea of Marmara, the Black Sea, and the Aegean Sea. In some cases, the government directly sent orders to the heads of the three largest non-Muslim communities (Greeks, Armenians and Catholics) in the Empire, to draft a certain number of men from among their members and send them to the Arsenal.

In most cases, these workers were drafted and employed for the construction of one or more vessels and they were released when these tasks were completed. Thus, in most orders we see a reference to the construction of a specific warship, as well as a rather general reference to “the increasing number of tasks” in the Arsenal. However, in periods when the rate of production required to keep the number of such casual workers at a high level, the districts were obliged to replace the workers they sent regularly. These periods of replacement were most likely decided according to the district’s proximity to the capital. In the late 1820s, whereas a village in Karamürsel was obliged to send nine carpenters on a monthly basis, workers who were sent from farther districts, such as those around Varna in the Balkans, were replaced once every six months.

In line with earlier practices for drafting laborers, these workers mostly received a daily wage, assigned by the government, or their districts were exempted from their tax obligations. This second case particularly applied to the non-Muslims whose districts were asked to send workers on a regular basis, as they were required to pay poll taxes. In such cases, in addition to

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120 For example, in June 1821, in the midst of the expeditions against the rebellion in Western Balkans led by the local ruler Ali Pasha of Janina, an imperial edict asked for the immediate draft of 255 carpenters and caulkers from the Muslim and non-Muslim districts located along the Black Sea. BOA.C.BH.1/20, 16 Ramazan 1246 (17 June 1821). In 1827-8, after the Battle of Navarino, an imperial edict asked for 400 carpenters to be sent from Tınovi, a district in Rumelia. BOA.C.BH.42/1996, 13 Cemaziyülevvel 1243 (1 January 1828). In 1831, in the midst of the reconstruction efforts after the Battle of Navarino, orders were sent for 1500 workers for building and repairing the vessels. BOA.HAT.364/20161F, 25 Safer 1247 (5 August 1831).

121 See, for example, DMA.Tersane.87/1b 11 Rebiülalıhir 1238 (26 December 1822).

122 BOA.C.BH.209/9756, 7 Cemaziyülevvel 1241 (18 December 1825) and BOA.C.BH.3/131, 14 Ramazan 1242 (11 April 1827).
exemptions, local administrations were ordered to grant an *iane* (donation) to the families of these workers, in order to help them get by in the absence of their men. Since the obligation was levied on the entire district, rather than on the individuals, when the workers deserted or did not arrive, the district was ordered to complete the missing number of workers. This was what happened when six men, sent by a village in the island of Chios that was normally supposed to send eighteen sawyers to the Arsenal every six months, deserted in 1829.¹²³

Such examples of desertion demonstrate that the practice entailed a certain level of coercion, varying according to each case or individual. As we will see in more detail in the next chapter, the way this obligation was levied on districts or communities rather than on individuals, was almost identical to the way soldiers for the army and navy were drafted from certain districts. This was not merely a result of the lack of bureaucratic knowledge and control necessary to regulate the recruitment process on an individual level. It also guaranteed the provision of the amount of labor power necessary for production, especially when individual skills mattered less than the amount of labor power necessary for production in the Arsenal. Although the orders usually emphasized that workers should be selected from among those who were skilled, young, and healthy, that certain villages were periodically required to send men as carpenters suggests that they were mostly recruited for tasks that did not require artisanal skills. As a result, desertion was not unexpected, especially when men had to give up their agricultural tasks to sustain their families or when they were able to make higher than the wage assigned by the Arsenal, which was often lower than the market value.

This coercive characteristic of labor draft from provinces made it particularly controversial, and thus eventually it became a less available and legitimate source of labor for the

Arsenal in the Tanzimat Era. The original Tanzimat Edict of 1839 did not directly refer to the issue of corvée (*angarya*). However, in addition to the guarantees for the protection of life, honor, and property, and for the equality of both Muslim and non-Muslim subjects, the Edict also ruled that taxes would be reassessed, collected in cash, and that no further exaction would be requested from the subjects. These promises simply consolidated an earlier edict abolishing the corvée in the Rumelian provinces, where non-Muslim peasants were almost enslaved by their Muslim landlords, and had been personally abused and confined in many ways. The slow implementation of these promises, as a result, led to peasant uprisings in different parts of the Balkans calling for the abolition of this practice in the following decade.

The promises of the Tanzimat did not only resonate with the Rumelian peasants. Following the proclamation of the Tanzimat, the practice of drafting labor for the Arsenal became more and more contested by Ottoman subjects. The immediate reaction seems to have come from those Christian villages who were obliged to send workers in return for certain exemptions. This was not surprising, as exemptions in return for labor would not be allowed from now on since taxes should be paid in cash in principle, which eventually led to a controversy regarding the obligation of sending workers to the Arsenal. In 1840, the tax collector (*muhassil*) of the above-mentioned village in Chios, which used to send 18 sawyers and replace them every six months, wrote to the center regarding what to do with the obligation. İsmail Bey, the tax collector, asked the center to abolish this obligation, since “it was obvious” that the villagers would not want to

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124 For the original text of the Tanzimat Edict, see Halil İnalcık and Mehmet Seyidtdanhoğlu, ed. *Tanzimat: Değişim Sürecinde Osmanlı İmparatorluğu*, 1-3. For an English translation of the edict by Halil İnalcık, see Akram Fouad Khater, *Sources in the History of the Modern Middle East* (Boston: Houghton Mifflin, 2004), 11-14.
pay their taxes as long as their obligation to send the workers continued. The government, however, rejected this request, since the Arsenal still needed their labor, and it also pointed out that the workers would be paid their due wages in the Arsenal from now on, which eliminated the need for local administrations to financially assist their families.127

This emphasis on “paid labor” in the state’s response heralded the future approach of the Tanzimat administration regarding the disagreements between the state and its subjects over how angarya should be defined and understood.128 The documents on these disagreements suggest that, by angarya, the Ottoman ruling elites primarily understood unpaid labor, and they acknowledged that it was a form of forced labor only because labor was not compensated monetarily, as wages. Therefore, when the imperial edicts referred to the abolition of angarya in the beginning of the Tanzimat Era, the imperial bureaucracy interpreted this as the abolition of the practice of unpaid employment on a regular basis. However, the confrontations over the draft of provincial workers for the Arsenal in this period demonstrate that in popular mind, angarya was defined not merely by unpaid employment, but also by coercion. In other words, for Ottoman subjects, it seems that angarya referred to any kind of involuntary service even when the service was financially compensated.

In 1848, at a time when the naval administration intended to speed up the maintenance and construction of ships, and while it also sought to build new mechanized facilities, the government sent orders to coastal areas again for workers to be employed in shipbuilding. The governor of Trabzon, one of the major sources of labor on the Black Sea, wrote back to the center to get its approval for the coercion the local administration used in drafting these workers. The

127 BOA.C.BH.105/5080, 27 Cemaziyülevvel 1256 (27 July 1840).
128 Angarya, originally a Greek word, means “compulsory service.” For seafarers on board, any extra work assigned in addition to the regular one, was described by this term. Kahane and Tietze, The Lingua Franca in the Levant: Turkish Nautical Terms of Italian and Greek Origin, 476.
governor acknowledged that using coercion was unjust, and that many people were running away in order to avoid being drafted to work in the Arsenal. The Grand Admiral, referring the case to the High Council (*Meclis-i Vala*), argued that the Arsenal needed to increase the number of workers and that the subjects were “not right” in refusing to work in the Arsenal, since the Arsenal would pay them in return for their labor. The High Council, in its ruling, accepted this rationale, and argued that it was likely that their desertion was “due to the fear of *angarya*, which was practiced in some affairs before the Tanzimat.” Thus, it recommended the local administrators to encourage and persuade the subjects by explaining to them clearly that they would not be used as *angarya* but be paid and employed only for a temporary period. However, continued the Council’s ruling, in case there were those who still resisted the draft, this should be seen as a refusal “to serve the Sublime State”, and thus, after leaving out the ones with serious health problems, the rest should be drafted and sent to the Arsenal immediately “disregarding their lame excuses (*a‘zar-i vahiyesine bakılmayarak*)”\(^{129}\).

This was not an unusual response. In 1846, the workers who were brought from Karamürsel to serve as carpenters in the Arsenal petitioned to be pardoned from their service since they were peasants. The Grand Admiral rejected the petition, with a very clear explanation: They were brought for a temporary period, being replaced every two months by their fellow townsmen, and were paid the contemporary wages assigned for carpenters in the Arsenal. Thus, the Admiral concluded, they had “nothing to say.”\(^{130}\)

Such petitions from workers asking to be pardoned after the Tanzimat demonstrate that the Tanzimat promised not to abolish forced labor, but rather unpaid labor, which should caution us to equate “wage labor” with “free labor”. At least from the standpoint of many workers who

\(^{129}\) BOA.İ.MVL.119-2972, 20 Cemaziyüvelvel 1264 (24 April 1848).
\(^{130}\) BOA.A.MKT.48-5, 15 Şaban 1262 (8 August 1846).
were brought from the provinces, this was a kind of *angarya*, as they were forced to work in tasks unfamiliar to them. In 1850, the Greeks from the town of Saruhan in Manisa asked for a pardon when they were required to send carpenters to the Arsenal. They wrote that since they were peasants, being away from their lands would harm their livelihoods, and that they were not familiar with naval tasks, as they did not live in a coastal town. In response, the town was allowed not to send workers, as the existing workers from the town had already been sent back since they were no longer needed. However, it seems that the town was not granted an official pardon, most likely because this could make an example to the others.\(^\text{131}\)

The efforts to re-define *angarya* as a paid “state service” did not eliminate the contradiction of this obligation with the overall promises of the Tanzimat reformers for the equal and just treatment of subjects. This contradiction pushed many local administrators to communicate with the center asking the latter’s approval for the coercion used in drafting required number of workers for the Arsenal. This was best exemplified by the correspondences with the local administrations in Trabzon and in the Aegean island of Mitilini in 1858, when both were asked to draft and send a certain number of workers to be used in shipbuilding. In these correspondences, the central government acknowledged that many workers would be unwilling to come and work due to low wages and/or to the possibility that it would undermine their current livelihood. In addition, the government also admitted that forcefully drafting and sending such workers against their own will was not acceptable. However, it was equally unacceptable, according to the government, that the ongoing shipbuilding projects be left unfinished or delayed. Thus, the correspondences again justified these drafts by the payment of wages and the periodical replacement of workers, in these cases, every six months. According to these correspondences,

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\(^{131}\) BOA.AMKT.NZD.2-99, 15 Rebiülevvel 1266 (29 January 1850).
since these conditions left “no ground for any injustice or excuses” (*gadr ve bahane*ye *mahal olmayacağından*), the workers should be “encouraged” to work in the Arsenal and the required number of workers should be drafted and sent immediately, “with no one missing” (*bir neferi bile geriye kalmaksızın*).\(^{132}\)

The vagueness regarding how these workers would be drafted in case of resistance not only demonstrates the dilemma of the state elites drafting workers for the Arsenal in the Tanzimat Era; it also put the burden on local administrations to figure out how to fulfill their quotas assigned by the center. The primary reason was that the imperial orders did not refer to a systematic arrangement for the draft of these workers, aside from the requirement that the draftees should be young (*genç*), strong/healthy (*tuvana*), and skilled (*mütefennin*).\(^{133}\) As we will see in Chapter 2, before the Tanzimat, drafts for the military were also marked by such vagueness, paving the way for serious abuses by the local administrations in drafting people for military service. As a result, the Tanzimat Edict openly promised to systematize military conscription, leading to the implementation of the lottery system after 1846. As this system did not apply to the draft of civilian workers, however, such abuses continued in the Tanzimat Era, which only contributed to the increasing contradiction of this practice with the larger promises and efforts of the Tanzimat reforms.

In 1856, the Grand Vizierate ordered an investigation on the alleged abuses of the town administrator (*kaza müdüri*) of Ünye, a town on the Black Sea coast. According to the complaints of the town’s Armenians, the administrator was forcefully drafting the peasants in the villages and detaining them in order to send them to the Arsenal as carpenters. If the villagers

\(^{132}\) BOA.A.MKT.MHM.126/95, 14 Receb 1274 (28 February 1858) and BOA.A.MKT.MHM.134/57, 26 Zilkade 1274 (8 July 1858).  
\(^{133}\) For an exemplary order sent to various coastal districts for the draft of 1200 carpenters in 1862, see BOA.A.MKT.UM.547/10, 9 Ramazan 1278 (10 March 1862).
knew nothing about carpentry, the administrator would release them in return for a fine (*cerime*). Furthermore, he was also asking for a bribe of 1,000 piasters from each village headmen, most likely to exclude them from the draft.\(^{134}\) We don’t currently know how the investigation concluded, but the following year, this time the Greeks of the town complained about the enforcement of people destined to work as carpenters for the Arsenal. Due to the draft, men deserted and fled the town, and thus “families fell apart”, and the draftees were detained in prison “even during last Easter.” In addition, they also complained about the ferry charges, which they had to pay from their own pocket, and about the low wages in the Arsenal where they were paid between 6 and 8 piasters a day, when they could make around 20 piasters a day in their hometown. The Grand Admiral responded in a very defensive way. He himself complained that although eight carpenters were called from Ünye, only four of them arrived in the Arsenal, and their ferry charges were paid either in advance by the local administration, or after they arrived. As to the increase in wages, the Pasha referred to the current efforts to raise the wages of all workers in the Arsenal, underlining that “the working classes (*sunuf-i amele*) have never been oppressed and troubled under the shadow of his majesty.”\(^{135}\)

As a result, resistance to this obligation, in the form of both pardon requests and desertions, was not uncommon, which eventually made this practice incompatible with the overall efforts to increase productivity and efficiency in the Arsenal in this period. Popular discontent with this obligation most likely pushed many local administrators to draft people regardless of their ability to work in shipbuilding to fill out their quotas. In addition to the above-mentioned collective requests by fellow townspeople, workers also petitioned individually to be

\(^{134}\) BOA.A.MKT.UM.234/59, 19 Şaban 1272 (28 April 1856).
\(^{135}\) BOA.HR.MKT.197/46, 21 Zilkade 1273 (13 July 1857).
sent back, as a Mustafa did in 1856, since they were unfamiliar with the job.\textsuperscript{136} Non-Muslims had more options for an institutional backing. Their petitions usually were sent through their patriarchs, who also attached their own letters to these petitions in support of the pardon requests.\textsuperscript{137} As seen above, these requests were rejected in most cases, but they no doubt constituted a bureaucratic pressure on the Ottoman elites, especially in an era when they strived to balance and improve their relations with non-Muslim communities. However, acceptance of these requests may have been easier when European states intervened. In 1855, the Ministry of Foreign Affairs (\textit{Hariciye Nezareti}), upon the request of the British Embassy, asked the Grand Admiral to pardon Yorgi, son of Konstantin, who was brought from Çanakkale to work as a carpenter, since he had no one else back home to look after his old mother.\textsuperscript{138}

Another option, which was also available for military conscription, was desertion. The cases discussed above demonstrate that in many cases the quotas could not be fulfilled due to such desertions, and the problem was not peculiar to these cases. In 1860, the Armenian community in Erzurum, an eastern province, who were obliged to send workers to the Imperial Yarn Factory, which was administered by the Arsenal, petitioned to be pardoned, underlining that since many people had now relatives who had deserted to Russia during the Crimean War, it was most likely that more would desert there in order to escape from the draft.\textsuperscript{139} There were also examples of workers running away during their employment. In 1858, upon the request of the guild of oar makers, the government sent orders to the provinces to find the oar makers who

\textsuperscript{136} BOA.A.MKT.NZD.155-28, 3 Zilkade 1271 (18 July 1855).
\textsuperscript{137} For another example on a pardon request for Mytilene from the Greek Patriarch in 1856, see BOA.HR.MKT.140/8, 17 Receb 1272 (24 March 1856).
\textsuperscript{138} BOA.HR.MKT.116/75, 29 Zilkade 1271 (13 August 1855).
\textsuperscript{139} BOA.A.M.24/59, 5 Cemaziyülahir 1277 (19 December 1860).
deserted the Arsenal in 1856. The guild complained that these desertions undermined their production for the Arsenal. \(^{140}\)

Since the obligation was normally on the community, in case of such desertions, provincial administrations or religious communities were asked to send a replacement for the missing number of workers, or to find the runaways and send them back to the Arsenal. However, there was no individual penalty, at least until 1847. That year, a carpenter from Bartın, who had deserted the Arsenal, came back to request his wages in arrears, which amounted to a large sum, 320 piasters. The Naval Council, in response to his case, decided that since such workers had not been punished when they ran away, their unpaid wages should not be paid as a punishment from now on. \(^{141}\)

These cases altogether demonstrate that there was genuine popular discontent toward the Arsenal’s labor draft in the mid-nineteenth century. This does not suggest a lack of resistance against the draft before the Tanzimat, as coercing people to work for free or lower wages far from their homeland had never been a popular practice. However, in the mid-nineteenth century, this became a less sustainable method due to at least two reasons: On the one hand, the peculiar circumstances of the Tanzimat Era seem to have eroded the legitimacy of the practice. This was especially the case for labor draft from non-Muslims, and not merely because they were guaranteed equal and just treatment by the state elites with the Tanzimat reforms, which contradicted forcefully drafting workers. Their discontent most likely became increasingly intolerable for state elites in a period of increasing foreign aggression, since a possible rebellion would immediately usher in political intervention by European states, who did not hesitate to use such incidents as a pretext to get involved in Ottoman affairs.

\(^{140}\) DMA.BN.94/1877, 8 Zilhicce 1272 (10 August 1856).
\(^{141}\) DMA.Env.341/28, 7 Ramazan 1263 (19 August 1847).
On the other hand, the practice also increasingly contradicted the efforts to increase productivity and efficiency by means of a regular, skilled, and disciplined labor force in the Arsenal during this period. The time spent for drafting workers against popular discontent, and failures to bring in the required number of workers for the same reason, significantly undermined the pace of production. Furthermore, the low level of familiarity of these workers with shipbuilding, as well as their reluctance to work, troubled the efforts of the Arsenal administration to create a skilled and efficient labor force. This was especially the case after the 1860s, when the Arsenal fully committed to mechanization and the construction of iron steamships, which required more trained and experienced industrial workers, rather than peasants who could be employed for a few months.

Convict Labor

The transformation of the production process and the labor force in the mid-nineteenth century was also one of the main reasons for the decreasing role of convicts and prisoners of war, a traditional source of forced labor for the Ottoman navy, in this period. The Imperial Arsenal consisted of a Bagnio that served to imprison the convicts who were sentenced to hard labor and sent here from different parts of the Empire, as well as the prisoners of war. In the age of galleys, most of these convict laborers were used as oarsmen on the vessels, in addition to being employed in shipbuilding. For shipbuilding, those who were skilled in a relevant craft were directly assigned to that one, while others were mostly used as day laborers.\(^{142}\)

In the nineteenth century, this pattern mostly continued. In parallel to the ebbs and flows of production in the Imperial Arsenal, the number of convicts and prisoners of war who were

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\(^{142}\) For the employment of prisoners of war in early modern Istanbul, see Nida Nebahat Nalçaci, *Sultanın Kulları: Erken Modern Dönem İstanbul'unda Savaş Esirleri ve Zorunlu İstihdam* (İstanbul: Verita, 2015).
employed in production changed. However, the number of prisoners in the Bagnio and the
demands of production did not necessarily overlap. At times, the population of the Bagnio was
insufficient to address the demands in production, especially during wartimes. In 1822-23, at a
time when a rebellion broke out on the island of Chios, to be suppressed by a huge massacre that
would mark the Greek War of Independence, the Ottoman government decided to round up and
expel all migrant workers from Chios in Istanbul, since they were not trusted. However, due to
the shortage of labor in the Imperial Arsenal, the bachelors among them were sent to the Arsenal
for the construction of the new drydock, which was finished in 1825, and of the ships in
winter. In another example from 1855, during the Crimean War, the naval administration wrote
to the Ministry of Police (Zabtiye Nezareti) to send 150-200 of felons in the police prison, to be
employed in the Arsenal. In response, the Ministry wrote that there were only 63 people
convicted of felony in the prison, but they would continue to send if other felons arrived.

On the other hand, there were also times when the Bagnio was too crowded to employ all
of the prisoners, especially in periods following a war, when the number of convicts, including
prisoners of war, far exceeded the demands of a lower rate of production. In 1859, in a period
when production dramatically declined following the Crimean War, only 200-300 of 1,109

143 Aside from them, as part of efforts to keep the Greeks and Armenians under strict surveillance during
the Greek uprising, other Greeks in Istanbul who did not have a Muslim bailsman (kefil) were banished
from the city as well. See H. Şükrü Ilıcak, "A Radical Rethinking of Empire: Ottoman State and Society
During the Greek War of Independence, 1821-1826" (PhD diss., Harvard University, 2011), 191.
144 BOA.HAT.846/38010 (undated). This imperial order was written in response to the Grand Vizier, who
asked the Sultan to employ the “seven-eight hundred” Greek bachelors in the Arsenal, due to the labor
shortage there, instead of banishing them. The Sultan approved only on the condition that they were
strictly chained and watched during work, due to the fear that they could put the ships on fire. At least by
the end of 1822, there were 58 bachelors from Chios who were employed as convict laborers in
shipbuilding. DMA.Tersane.87/1b. Since they were mostly held to work in the construction and
maintenance of warships, they were released after the navy was sent to expedition, most likely in the
spring of 1823. BOA.HAT.502/24614 (undated).
145 DMA.ŞUB.24/10a, 26 Muharrem 1272 (8 October 1855).
prisoners could be put to work. In effect, this was due to not only the rate but also the quality of production, since increasing mechanization and the demand for skilled and efficient labor in this period most likely decreased the number of tasks available to these prisoners.

An overcrowded Bagnio, where most prisoners did not work, worsened its already notorious image, especially in the eyes of European observers, who had been complaining about the abject conditions and laziness of prisoners in the Bagnio, as well as other Ottoman prisons. The reason for these complaints and criticisms was not simply the “inhumane” state of the Bagnio but also the fact that the method of imprisonment there was not seen in harmony with European modernity, which redefined prisons as part of a larger web of social relations that aimed to create disciplined and governable bodies for the labor market. In the modern era, labor as a punitive technique was not simply seen as a corporal punishment in the form of hard labor, which still was named after kürek (oar) in Ottoman Turkish in the nineteenth century. Rather, it was one of the tools to train and discipline the bodies of convicts, in order to re-integrate them into modern industrial society, as productive workers and citizens.

Thus, the replacement of the Bagnio with a modern central prison was at the center of the Ottoman reforms to modernize the penal system and institutions as part of the elites’ commitment to modern state-building that marked the Tanzimat Era. Before the central prison opened in 1871, a new regulation was issued in 1864 in order to rationalize and standardize the running of

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146 Gültekin Yıldız, Mapusane: Osmanlı Hapishanelerinin Kuruluş Serüveni, 1839-1908 (İstanbul: Kitabevi, 2012), 225.
147 Ibid., 223-25. See also Ufuk Adak, "Central Prisons (Hapishane-i Umumi) in Istanbul and Izmir in the Late Ottoman Empire: In-between Ideal and Reality," Journal of the Ottoman and Turkish Studies Association 4, no. 1 (2017): 76-77.
149 For a study that analyzes prison reforms as part of Ottoman modernity, see Kent F. Schull, Prisons in the Late Ottoman Empire: Microcosms of Modernity (Edinburgh: Edinburgh University Press, 2014).
the Bagnio in the Arsenal. However, the articles concerning the employment of convicts in this regulation underline a tacit acknowledgement on the part of the state elites that they continued to see hard labor in the Arsenal more as a form of mere corporal punishment than the reformation and disciplining of the body.\textsuperscript{150} According to these articles, the convicts would largely be employed in the construction of the third drydock, and in unloading coal from vessels. They would receive 20 \textit{para} a day (equal to a regular conscript working in the Arsenal), as well as food rations. They would stay chained outside the prison, and would be accompanied by a changing number of officers in addition to 60 guardians, all of whom would surround them during work. In case they were sent to other worksites, each of them would be accompanied by three guardians, who would constantly watch them.\textsuperscript{151}

As we will see in Chapters 2 and 4, the state elites were already considering the Imperial Arsenal as a site where subjects could be converted to modern, productive citizens with industrial skills, especially by means of modern conscription. However, it seems that they did not apply this logic to the convict laborers in this period in the Arsenal. Even after the establishment of the central prison in 1871 in Istanbul (in addition to the increasing number of local prisons, all of which replaced the Imperial Arsenal as the central site of incarceration in the Ottoman Empire), the Arsenal mostly served as a site of hard labor for felons in this prison, who were largely employed in similar tasks that did not require industrial skills in the late nineteenth century.\textsuperscript{152}

\textsuperscript{150} According to Yıldız, most state elites still saw prison as a site of punishment, rather than reformation, since modern factories and schools emerged more recently. See Yıldız, \textit{Mapusane: Osmanlı Hapishanelerinin Kuruluş Serüveni, 1839-1908}, 188.

\textsuperscript{151} DMA.ŞUB.41b/13a, 29 Safer 1281 (3 August 1864). In 1848, Charles Macfarlane complained how employing convicts under such a strict supervision in the Bagnio was inefficient, since “those who did very little work had to be watched by a number of men nearly equal to their own number.” Charles MacFarlane, \textit{Turkey and Its Destiny: The Result of Journeys Made in 1847 and 1848 to Examine into the State of That Country}, vol.2 (London: W. Clowes and Sons, 1850),339.

\textsuperscript{152} Yıldız, \textit{Mapusane: Osmanlı Hapishanelerinin Kuruluş Serüveni, 1839-1908}, 411.
Epilogue: The Reorganization of Production in the Mid-Nineteenth Century

The transformation of the Imperial Arsenal in the nineteenth century was, in a sense, a response to the declining availability of both raw materials and traditional sources of cheap labor in this period. As I discussed above, the declining access to especially timber resources in the late eighteenth century had already pushed the Selim III’s government to take steps to increase productivity and standardization of the labor process in the Arsenal. Although naval reforms stumbled after the overthrow of Selim III, the concerns over the waste of raw materials continued in the following decades. Even in a period of relative stagnation in the first two decades of Sultan Mahmud II’s reign, this concern forced the Arsenal administration to gradually increase its top-down control over the production process on behalf of efficiency and productivity. In 1820, the administration decided to build a new ironworks for the production of ironware, which had been contracted out to ironsmiths who produced them in their own shops in Kasımpaşa, where the Arsenal was located. The reason was that since the raw materials were provided by the Arsenal, excessive amounts of them were taken out for these shops, leading to these materials be wasted, and thus increasing the cost of production. Thus, a new ironworks, consisting of furnaces, with storehouses and offices next to it, would be erected on the “unoccupied lands” close to the Arsenal purchased by the administration for this purpose.\(^{153}\) Shortly after, an Imperial Yarn Factory (*Riştehane-i Amire*), across the Golden Horn, was established in 1827, to produce sails and ropes for the navy.\(^ {154}\)

\(^{153}\) BOA.C.BH.218/10155, 20 Şaban 1235 (2 June 1820).

\(^{154}\) According to Öztürk, the factory was initially financed and run by the Ministry of Pious Foundations. This was not a steam-powered factory. Looms were powered by horses. For details, see Nazif Öztürk, "XIX. Yüzyılda Osmanlı İmparatorluğu’nda Sanayileşme ve 1827'de Kurulan Vakıf İplik Fabrikası," *Vakıflar Dergisi*, 21 (1990): 23-80. Although sail production gradually decreased in the age of steamships, the factory continued to produce ropes by manual labor, a fact which also explains its use as a prison in this period. By the 1860s, it was mainly used for ropemaking, mostly by means of naval conscripts and convicts. In 1868, efforts started for the construction of a new steam-based factory, as part of transformation efforts in the era. As a result, the *Riştehane* was closed, and replaced by a rope factory,
Through the mid-nineteenth century, in parallel to the construction of new facilities within the Arsenal and the reorganization of the labor force, outsourcing was gradually abandoned, again as a response to increasing concerns for efficiency and productivity. This was precipitated particularly by the transformation of the production process, marked by steam power and iron shipbuilding, and by the decreasing legitimacy of the labor draft, both from Istanbul and the provinces, after the Tanzimat. Thus, the state of production became a greater concern, since the Empire lacked sufficient resources for coal and iron, the most important raw materials of the industrial era. As a result, the naval administration initiated attempts to create a labor force compatible with its schemes for industrial transformation in the mid-nineteenth century, as we will see starting with the next chapter. As part of these efforts to increase its control over the production process, in 1846, the administration ceased contracting out the tasks to the chief founder in the Foundry. The reason was that the chief founder used extra amounts of copper in the production of materials here, since he was paid one to seven piasters for every kıyye (1,300 grams) of the materials produced here. It justified the decision by referring to the success of a similar policy adopted recently in the Ironworks, which switched to employing wage workers directly for this goal.\textsuperscript{155}

In parallel to these efforts to centralize control over production and labor, the physical transformation and expansion of the Arsenal accelerated throughout the mid-nineteenth century, which gradually converted the Arsenal from an “industrial district” to a modern factory complex. By the 1860s, the production process for shipbuilding, from the manufacture and processing of materials to the actual construction of ships, was largely taking place within this site, under the

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\textsuperscript{155} DMA.ŞUB.4/56b, 19 Receb 1262 (13 July 1846).

DMA.ŞUB.51/139a, 11 Şevval 1284 (5 February 1868) and DMA.ŞUB.70/243a, 12 Zilkade 1289 (11 January 1873).
systematic supervision of the administration. This was a result of the industrialization efforts during the Tanzimat Era, marked by the introduction of steam-powered factories and workshops, including the Ironworks, Foundry, Engine Factory, Repair Factory, Boiler Shop and Steam-Hammer Shop, each of which employed more than 100 workers by the early 1870s. These factories were mostly located in the Aynalıkavak area, which had originally belonged to a summer palace until it was transferred to the Arsenal as part of reform efforts under Selim III for the construction of three big slipways.\(^{156}\)

Beginning in the 1830s, this spatial expansion to the west, along the Golden Horn, was consolidated when this part of the Arsenal became the bedrock of mechanization of production. These factories were accompanied by small-scale workshops, for tasks such as carpentry, block-making, sail-making, and boat-making.

In addition to factories and workshops, to the east, new sites for shipbuilding were constructed throughout the nineteenth century, again expanding the frontiers of the Arsenal. The first drydock, which was built at the time of Selim III, was followed by the second one, opened in 1825, and a third one, completed in 1870, after more than a decade of long delays due to financial reasons. The first drydock was also expanded in the early 1870s, by confiscating land adjacent to it.\(^{157}\) These three drydocks were located side by side, which would be referred to as a distinct site simply referred to as the “Drydocks”, in the spatial-administrative division in the early 1870s.\(^{158}\)

The raw materials for all these worksites were kept in storehouses within the Arsenal, a series of

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\(^{156}\) As part of these efforts, ship launching methods were also reformed during this period. See Tuncay Zorlu, "Osmanlı Teknoloji Tarihinden Bir Kesit: Gemi İndirme Yöntemleri," *Osmanlı Bilimi Araştırmaları* 9, no. 1-2 (2007-2008).


\(^{158}\) See Gül Köksal’s thesis and dissertation for both the physical and technological transformation of the Imperial Arsenal and the present-day situation of these industrial artefacts, some which still survive: Köksal, "Haliç Tersaneleri'nin Tarihsel-Teknolojik Gelişimin Süreci ve Koruma Önerileri" and Gül Köksal, "İstanbul'daki Endüstri Mirası İçin Koruma ve Yeniden Kullanım Önerileri" (PhD diss., Istanbul Technical University, 2005).
buildings where hundreds of porters and day laborers worked. Aside from these, and in addition to the Bagnio, the Arsenal also consisted of barracks, where conscripts in labor battalions (including the boys, who had a separate barrack) lived, and the headquarters of the Ministry of Marine, almost all of which were built or rebuilt throughout the nineteenth century. Inside the Arsenal, there were also shops that serve food items, in addition to tobacco and barber shops.\textsuperscript{159} All in all, the Imperial Arsenal not only became the frontrunner of Ottoman industrialization in the mid-nineteenth century, but it played a particular role in the transformation of the city’s landscape throughout this period.

In the next chapters, I will analyze how this transformation both shaped, and was shaped by the specific course of class relations in this period. This transformation accelerated in the 1830s, when it became clear that the construction of a competitive navy required much more radical changes than introduced by the New Order regime four decades earlier. In this context, the Ottoman state elites initiated to put the tools of modern-state formation in the service of creating a more stable and skilled labor force compatible with industrial capitalism. The first target was the \textit{başıbozuk}s, a term that referred to people who were temporarily employed by the military, mostly in combat as well as non-combat services, in return for a payment. Literally meaning “broken-heads” or “unruly”, the term was underlining the uncontrollable characteristic of these people, who included the civilian workers in the Arsenal, regardless of whether they

\textsuperscript{159} According to a document dated 1869, regarding the concession given to three guildsmen in Kasımpaşa (two of whom were non-Muslims) to administer these shops, there were 12 shops in the Arsenal, as well as four shops and two Turkish baths within the Bagnio, all of which were part of the 2-year concession. See DMA.Env.650-53, 1 Safer 1286 (13 May 1869). Although the concession strictly bans the sale of alcohol and other “detrimental items”, this only confirms what Macfarlane reported on the sale of alcohol in 1828 as well as Alpagut’s statement that both alcohol and cannabis were sold in these shops. See Charles MacFarlane, \textit{Constantinople in 1828: A Residence of Sixteen Months in the Turkish Capital and Provinces: With an Account of the Present State of the Naval and Military Power, and of the Resources of the Ottoman Empire}, vol. II (London: Saunders and Otley, 1829), 256 and Alpagut, \textit{Marmara'da Türkler}, 133-34.
were drafted by or against their own will. In the late 1830s, within the context of large-scale reforms to “put everything into an order”, the state elites were not late to figure out the remedy for such a source of “disorder” in the labor force.
CHAPTER 2
MODERN CONSCRIPTION AND THE MAKING OF A MILITARY-INDUSTRIAL LABOR FORCE IN THE ARSENAL

Modern conscription in the Ottoman Empire was gradually introduced following the abolition of the Imperial Guards (the Janissaries) in 1826, and was finally institutionalized with the enactment of conscription laws and regulations between 1843-46. Recent studies on the history of modern conscription in the Ottoman Empire have largely focused on its role in modern state-making and the transformation of state-society relations in the nineteenth and twentieth centuries. In addition to it, however, modern conscription is also important to understand the development of capitalist relations. In order to understand this connection between industrial capitalism and modern conscription, we first need to see conscription as a form of military labor, as historians have increasingly started doing in the last two decades. And when we see it as such, we will also see that the modernization of the military and the capitalist transformation of production shared at least one essential goal in common in regards to labor formation: to create a regular, skilled, disciplined, and profitable labor force. The Ottoman naval bureaucrats of the reform era very clearly saw and understood this connection, and almost in tandem with the introduction of the modern conscription system, they developed schemes to utilize this system as a tool to

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160 For two important examples in this regard, see Gültekin Yıldız, Neferin Adı Yok: Zorunlu Askerlîğe Geçiş Sürecinde Osmanlı Devleti’nde Siyaset, Ordulu ve Toplum, 1826-1839 (İstanbul: Kitabevi, 2009) and Khaled Fahmy, All the Pasha’s Men: Mehmed Ali, His Army, and the Making of Modern Egypt (Cambridge, UK: Cambridge University Press, 1997).
transform capital-labor relations in the Imperial Arsenal in order to create a labor regime compatible with industrial capitalism.

In the preceding chapter, I discussed how established ways of drafting labor from Istanbul and the provinces became largely unavailable throughout the mid-nineteenth century, due to the resistance of Ottoman subjects against these forms of employment, to the increasing contradiction of such forms of labor with the promises of the Tanzimat, and to the growing incompatibility of these forms of labor with the capitalist mode of production, which was characterized by the increasing efficiency, consistency, and profitability of the production process. In this chapter, I will analyze the government’s efforts to adapt to the requirements of naval competition in the age of industrial capitalism by means of military conscription. In this way, I also aim to demonstrate how modern military service, as a form of labor, emerged as a Janus-faced system. On the one hand, military recruitment served the Ottoman elites to continue exploiting the earlier sources of coerced labor under a “modern” discourse. In other words, it was a response to the recent processes that made these sources increasingly inaccessible, illegitimate, and incompatible with capitalist production in the early-to-mid nineteenth century. In this sense, modern conscription was a modern form of “tributary labor”. On the other hand, modern military service played a crucial role in the transformation of capital-labor relations, and thus, in the making of capitalist relations in the Ottoman Empire. Modern conscription served to the formation of a regular body

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162 In discussing conscription as a form of tributary labor, I follow Zürcher’s discussion of the term: “Tributary labour occurs when the official position of the state is that serving in the military is an obligation that can be legally imposed and that is essentially interchangeable with the categories of tax and corvée-other obligations imposed by the state...The precise form that the tributary labour relationships takes can vary from legal enslavement (as in the Ottoman devşirme) to levies for specific campaigns, hereditary obligations (as in the case of Ming....) and early and modern forms of conscription.” Eric Jan Zürcher, "Introduction," in Fighting for a Living: A Comparative History of Military Labour, 1500-2000, ed. Eric Jan Zürcher (Amsterdam: Amsterdam University Press, 2013), 20.
of workers who could be trained and disciplined according to the needs of industrial capitalism, and whose labor could be more systematically exploited to increase the rate and quality of production and fund the transformation and expansion of technological capital in this period. In this sense, it was a form of labor as crucial to the making of capitalism in the Ottoman Empire as wage labor was.

In the 1830s, when the labor force created by the New Order regime became unsustainable, the increasing dependency on civilian wage labor became a challenge in the face of competitive pressures for investments in technological capital (steamships and machinery) and of the dire conditions of the budget, ridden by continuous war efforts. In this context, the administration needed to develop a new labor-saving scheme that would increase the compatibility of the labor force with industrial production, while decreasing the state’s dependency on the labor market for these workers. In other words, the main problem now was how to coerce skilled workers to work for lower wages for much longer periods. This required another new order, this time compatible not only with industrial capitalism but also with the overall promises of the bureaucratic reform project, the *Tanzimat*, that was launched in the late 1830s. In this age of the *Tanzimat*, a modern conscription system promised not only to transform state-society relations by converting subjects to citizens, but also to transform capital-labor relations, by converting a large body of Ottoman subjects into modern industrial workers.

**Modern Conscription in the Ottoman Empire**

Modern conscription, a system that (re)defined all male subjects of a political realm as citizens and potential soldiers who were obliged to serve in the military whenever the state required their service, was increasingly adopted by modern states in continental Europe following the French
Revolution and the success of Napoleonic armies at the turn of the century. The system required a sophisticated organization through which the state would be able to collect knowledge about the number and ability of its subjects to serve in the army, and then to draft, bring, accommodate, and train these subjects in the barracks. For the army to maintain and increase its strength, all these tasks had to be done in an efficient way, by means of a centrally coordinated, extensive, and effective bureaucracy. In other words, the modern conscription system could only be based on the reorganization and centralization of the entire state structure in parallel to the military reforms along this line.

In effect, the Ottoman ruling elites were aware of this since the late eighteenth century, and both Selim III and Mahmud II took important steps toward a more centralized state structure to uphold a modern army of conscripts. However, resistance from both provincial powers as well as the Janissaries at the center brought important challenges that both administrations had to overcome before proceeding with such a dramatic reorganization. Although, under the reign of Selim III, the Ottoman state attempted to establish a new, modern, regular army under the banner of the “New Order” (Nizam-ı Djedid), in the absence of larger social, political and economic reforms, it went no further than creating an alternative professional army with new weapons, tactics, and military organization. As a result, it was eliminated following the 1807 rebellion of the Janissaries, who found an existential threat in this new army. Sultan Mahmud II, who sat on the throne amidst a political chaos that revealed the power of both the Janissaries and the

163 For a comprehensive analysis of the evolution of modern conscription in France, which challenges “the myth” of modern conscription as a legacy of the French Revolution, demonstrating the continuities from the pre-Revolutionary France, see Thomas Hippler, "The French Army, 1789-1914: Volunteers, Pressed Soldiers, and Conscripts," in Fighting for a Living: A Comparative History of Military Labour, 1500-200, ed. Erik Jan Zürcher (Amsterdam: Amsterdam University Press, 2013).
164 Yıldız, Neferin Adı Yok: Zorunlu Askerliğe Geçiş Sürecinde Osmanlı Devleti'nde Siyaset, Ordu ve Toplum, 1826-1839, 135.
provincial notables (ayan), spent the first two decades of his reign trying to bring provincial powerholders under control, as well as to eradicate the power of the Janissaries, who would eventually be replaced by a new army of conscripts, *Asakir-i Mansure-i Muhammediye*, in 1826.\(^\text{165}\)

Dramatic reforms in the military and the larger state structure, thus, could only be launched following the abolition of the Janissaries and the weakening of local powerholders. However, these reforms had to be made within the context of existential threats against the dynasty, both from Europe and within. In addition to the existing threats of Britain, France and Russia, a new internal power emerged at another corner of the Empire. The Egyptian governor Mehmed Ali Pasha, who by this time had already been able to build a modern bureaucratic and economic structure around an army of conscripts, rebelled against the Sultan and crushed the Ottoman armies throughout the 1830s. The Ottoman dynasty could overcome his challenge only with the help of first Russia, and then Britain, at the cost of critical economic and political concessions to these countries.\(^\text{166}\)

Due to these challenges that slowed down the bureaucratic centralization and expansion, in its first two decades, this new army recruited soldiers not by direct individual conscription that levied the obligation on individuals. Rather, the Ottoman state drafted these soldiers in the same way it had drafted labor from the provinces, through what Zürcher calls “indirect conscription”. Until the military reforms of the 1840s, the obligation was levied on local administrations and


\(^{166}\) For a detailed analysis of the role of conscription and conscripts in Mehmed Ali’s modernization campaign, see Fahmy, *All the Pasha's Men: Mehmed Ali, His Army, and the Making of Modern Egypt*. 

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religious communities, which were held responsible to provide a certain number of soldiers periodically to the army.  

The Reorganization of the Ottoman Navy through Conscription

Before the era of modern conscription, the Ottoman navy recruited mostly on a seasonal basis. Each year, on the eve of the campaign season, around April, arrangements were made to recruit the necessary number of men according to the needs of each ship. Most of these men, consisting of (mostly Greek Orthodox and Muslim) marines and sailors, were recruited from coastal areas in close proximity to Istanbul, by means of specific orders to provincial authorities to gather and send a certain number to serve in the navy. Although these drafts primarily targeted volunteers in these areas, who would receive a daily wage or tax exemptions, provincial authorities or the center had to use coercion when volunteers did not fill up the ranks, reminiscent of the method of impressment in Europe.  

At the end of the campaign season, around November, aside from a number of marines who were kept to guard the ships and the Arsenal for the whole year, the remaining members of the navy were dismissed and sent back to their homeland.

In the 1770s, as part of his naval reforms, the Grand Admiral Hasan Pasha of Algeria attempted to end this method, by establishing a barrack for the sailors, where they would be trained and disciplined for the entire year. His goal was to solve the problem of lack of discipline and training among the sailors, which had been seen as one of the reasons of the heavy defeat by the Russians in the Disaster of Çesme in 1770. Although Hasan Pasha could not implement this

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policy efficiently during his tenure, due to fears among the palace elite regarding the possible emergence of a permanent army loyal to him, the naval reforms of Küçük Hüseyin Pasha, the Grand Admiral between 1792-1803, consolidated this effort by establishing a permanent corps of 3,000 sailors, who were settled in the barracks in Istanbul.169

Reflecting the increasing specialization and division of labor in galleons in the late eighteenth century, and the need to increase the number of skilled seafarers in the navy, another reform introduced by Hüseyn Pasha was to hire Greek seamen from certain islands particularly for rigging and sailing. According to Panzac, this change also reflects the exclusion of Greeks from combat forces, after the insurrection in Morea in 1770.170 Following the eruption of rebellions that would evolve into the Greek War Independence throughout the 1820s, the government decided to dismiss all Greeks who served as seamen in the navy, trying desperately to replace them with their Arab counterparts from the North African coasts, since Turkish seamen were considered inept in seafaring.171

Following the abolition of the Janissaries, in 1827, the Ottoman government issued a Code of Laws (Kanunname), which required the establishment of a regular naval force compatible with the land army.172 In its first page, the Kanunname offers two main justifications for these reforms: On the one hand, it points out the continuous efforts of foreign states to develop their naval forces regarding not only the speed of their fleets- a reference to steamships-, but also the shipbuilding and manufacture, the provision of materials, and the recruitment of

169 Ibid., 48-52.  
170 Ibid., 52.  
171 Uzunçarşılı, Osmanlı Devletinin Merkez ve Bahriye Teşkilâtı, 488.  
172 For a copy of the full text of the Code, see BOA. A. {DVNS.KNA.d.06/91-98. For a comprehensive description of the text, see Ahmet Yaramış, "Bahriye Teşkilatında Akim Kalan Bir Islahat Teşebbüsü: 1827 Tarihli Tersane-i Amire Kanunnamesi," Sosyal Bilimler Dergisi 14, no. 2 (2012).
soldiers and sailors. The *Kanunname* refers to the need to implement the principle of “*mukabele-i bil mist*” (lit. retaliation) to respond to these efforts in the Ottoman navy. On the other hand, however, the *Kanunname* argued that although the quality of the Ottoman ships and shipbuilding could match that of other navies, the sailors and marines, whom the *Kanunname* called “the spirit of the ships,” were neither skilled nor adequate in the navy. The main reason for this was the fact that since most of these sailors and marines were not regular soldiers, they were mostly hired at the beginning of each campaign “within a few days.” Even though these men proved to be skilled and gained experience during the campaign, the navy was doomed to lose most of these men since they were released at the end of the campaign and the navy could not secure their return in the spring.\(^{173}\)

The solution offered to solve this problem could be described with the same magic word that marked the nineteenth century reforms in the Ottoman State: Order (*Nizam*). The *Kanunname* argued that if the navy started recruiting these sailors and marines as “naval troops”, in the same line with the recent changes in the land army, the navy would have a regular force who could be employed on vessels during campaigns and could be accommodated and trained in barracks in winter time. For this goal, the state would periodically recruit soldiers to serve as seamen, gunners, and marines in the Ottoman navy. In this way, the navy would keep a regular force of 8,000 soldiers, including the existing 3,000 sailors in the barracks. This new regular naval force, called the *Asakir-i Mansure-i Bahriye* (Victorious Soldiers of the Navy) was essentially conceived to be the naval counterpart of the land army, *Asakir-i Mansure-i*.

\(^{173}\) BOA.A.{DVNS.KNA.d.06/91.
Muhammediye, and designed according to the same principles, hierarchical organization and
disciplinary measures as the latter.\textsuperscript{174}

The Kanunname confirmed the administration`s desire to decrease its dependence on
Greek seafarers and its hope to replace them with the Arabs on the Mediterranean coast, by
stating that 1,000 out of the 8,000 should be conscripted from the Arab provinces in the
Levant.\textsuperscript{175} The remaining force would be conscripted largely from the Muslims in the inland
regions. In this way, by means of compulsory military service, the Ottoman navy would have the
opportunity to decrease and eliminate its dependence on non-Muslims, especially in naval
vessels. Although the Kanunname did not specify the length of service for naval conscripts, it
most likely assumed the same term of service with the land army, as it often referred to the
regulations of the latter regarding the internal organization of the naval force, from retirement and
temporary leaves to disciplinary measures.\textsuperscript{176} As the term of duty was at least 12 years, and much
longer if necessary, especially during wartimes in the land army, this would give the naval
officers enough time to train Muslims for skilled jobs, saving the Ottoman navy of the “trouble of
employing non-Muslim sailors” within the context of the Greek uprisings.\textsuperscript{177}

The Kanunname seems to have failed, at least partially, in the immediate aftermath of the
Battle of Navarino, which took place only a month after the Kanunname was approved and issued

\textsuperscript{174} Ibid.
\textsuperscript{175} Although in this period, in order to replace the Greeks, an imperial order was sent for the draft of 1,200
seamen from the North African coasts (see BOA. HAT.889/39280 [undated]), the Code of 1827 excludes
these areas when naming the regions for the draft. This is most likely due to the acknowledgement that the
distance of and the weaker government control in these areas made a regular draft highly unrealistic for
the central authority.
\textsuperscript{176} BOA. A.\{DVNS.KNA.d.06/92.
\textsuperscript{177} BOA. A.\{DVNS.KNA.d.06/91.
by the Sultan.\textsuperscript{178} In the battle, as the Ottoman-Egyptian fleet lost 52 warships and around 6,000 sailors and soldiers,\textsuperscript{179} creating a regular naval force proved to be much more complicated than it had been assumed in the \textit{Kanunname}. For instance, recruiting Arab soldiers from the Mediterranean coast turned out to be impossible in the 1830s, as most of these areas came under the control of the rebel governor of Egypt, Mehmed Ali Pasha. Thus, in 1835 and 1837, the navy again drafted Greeks and Armenians in Anatolia, due to lack of skilled manpower in its ranks. Despite these problems with the implementation of the \textit{Kanunname}, however, the navy continued to draft soldiers for the \textit{Asakir-i Bahriye}, whose number amounted to around 20,000 at the end of the 1830s.\textsuperscript{180} Until the introduction of conscription laws between 1843-46, which brought a lottery system, these soldiers continued to be drafted and sent by means of the provincial administrators mostly in, but not limited to, the coastal areas. An important change in this regard, as Panzac underlined, was the fact that the geographical target of recruitment started to shift from the Aegean to the Black Sea coasts, where a larger number of Muslims resided, reflecting the ongoing concern with drafting Muslim seamen for the navy.\textsuperscript{181}

\textsuperscript{178} Yaramış, "Bahriye Teşkilatında Akim Kalan Bir Islahat Teşebbüsü: 1827 Tarihli Tersane-i Amire Kanunnamesi," 143.
\textsuperscript{180} According to BOA.HAT.1243/48301-I (undated), the number of soldiers in the naval force by 1838 was 17,679. With the addition of those who were called on and still expected to join, the planned transfer of the First Regiment to the navy, and the proposed formation of a 5,000 labor force in the Arsenal (detailed in the following pages), the number was expected to amount to 26,098 soldiers in the near future. However, according to Panzac’s data, based on the French archives, there were only 10,765 soldiers by 1845, including the workers. Panzac, "The Manning of the Ottoman Navy in the Heyday of Sail (1660-1850)," 54. This most likely suggests that the larger size of the navy in the late 1830s was rather conjunctural, owing to the Ottoman-Egyptian Wars, which came to an end by the first half of the 1840s.
\textsuperscript{181}Ibid., 55.
Naval Conscripts as Workers

Following the disaster at Navarino, as the Ottoman navy started to recover in the following years, the naval administration of Halil Rifat Pasha, who served as the Grand Admiral in 1830-32, attempted to use these conscripts as workers, by training a number of them to replace the civilian craftsmen, who were hired at the beginning of campaigns, in the navy. However, this initiative largely failed, according to a later report by the naval undersecretary Safveti Musa Efendi, who would launch a similar effort after his appointment in 1837.

Following his appointment, Safveti Musa Efendi sent a proposal to the palace, asking for the Sultan’s approval of his plan to replace civilian craftsmen in naval vessels with soldiers, as part of ongoing reforms that had been undertaken in the navy. Underlining the “day by day” increase in the number of naval conscripts throughout a series of reforms that had “gradually put everything into an order,” Safveti Musa argued that the time had come to effectively use these soldiers as craftsmen as well. Up to that time, he continued, during naval expeditions to both the Black Sea and the Mediterranean, the navy had hired civilians to serve as carpenters, caulkers, augerers, and other craftsmen as needed on a vessel. However, if some soldiers were selected and trained during peacetime in these crafts, the navy would have several “skilled” soldiers, making it “easier” to access skilled labor whenever needed.

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182 Soldiers served the Ottoman navy as craftsmen before the introduction of modern conscription as well. In the sixteenth and the seventeenth centuries, a military class, the azabs who were mostly recruited from among Muslims in return for their “avarız” tax, was employed in the navy. Although they were mostly employed in naval vessels, they also worked in the Arsenal as caulkers whenever needed. Especially before the eighteenth century, most of the regular craftsmen were drafted from devshirme boys who were trained to serve as Janissaries. See Bostan, Osmanlı Bahriye Teşkilâtı: XVII. Yüzyılda Tersâne-i Amire, 63-71; Uzunçarşılı, Osmanlı Devletinin Merkez ve Bahriye Teşkilâtı, 406-10; and Gencer, Bahriye'de Yapılan İslahat Hareketleri ve Bahriye Nezâreti'nin Kuruluşu (1789-1867), 59.
183 BOA. HAT.1332/51957A (undated).
184 Ibid.
Safveti Musa argued that the corps who were originally formed by Halil Rıfat’s initiative at the beginning of the decade to replace civilian craftsmen, were gradually dispersed in the following years, with only a small number of soldiers left for these crafts.\(^{185}\) This was most probably because of the fact that the ongoing war with the Egyptian governor and the continuing hostilities with -now independent- Greece and the European naval powers in the 1830s constantly kept the Ottoman navy on alert, leaving few soldiers to be used in non-combat tasks. Indeed, in the register of workers of the Imperial Arsenal for August 1834, there seems to have been only 23 “naval soldier-apprentices” (asakir-i bahriye şakirdani), who were trained in block-making along with their civilian counterparts.\(^{186}\)

Although Halil Rıfat’s initiative concerning the employment of conscripts in naval crafts largely failed, it seems that the Ottoman naval administration was still able to utilize naval conscripts in industrial production even in this first decade of the Asakir-i Bahriye. In the first months of Safveti`s appointment in 1837, these conscripts were already employed in production right across the Imperial Arsenal on the Golden Horn, in the Riştehane-i Amire (Imperial Yarn Factory), which produced sails and ropes for the Ottoman navy.\(^{187}\) Until its closure in the 1870s, the employment practices in this factory seem to have been largely characterized by coerced labor.\(^{188}\) Indeed, in the first months of Safveti’s tenure as undersecretary, there were around 1,000 workers (992 in October/November [Receb] and 1,110 in November/December [Şaban]) in the Riştehane.\(^{189}\) Around 25 percent of these workers were listed as “naval troops” (asakir-i bahriye),

\(^{185}\) Ibid.
\(^{186}\) See DMA. Env.224.
\(^{187}\) See footnote 153 for details about this factory.
\(^{188}\) M. Erdem Kabadayi, "Working for the State in a Factory in Istanbul: The Role of Factory Workers’ Ethno-Religious and Gender Characteristics in State-Subject Interaction in the Late Ottoman Empire " (PhD diss., Ludwig Maximilian University, 2008), 33.
\(^{189}\) See BOA.D.BŞM.TRE.d.15713, Receb 1253 (October/November 1837) and BOA.D.BŞM.TRE.d.15716, Şaban 1253 (November/December 1837).
“boy soldiers of the naval troops” (*neferat-i sibyanan-i asakir-i bahriye*),\(^{190}\) “reserve troops” (*asakir-i redif*) and “boy soldiers of the reserve troops” (*neferat-i sibyanan-i asakir-i redif*).\(^{191}\) All other workers consisted of Greeks and Armenians (including Armenian boys) who were conscripted from different parts of Anatolia.\(^{192}\) Aside from these boys, however, based on the fact that at least one of the registers categorizes Greeks as “Asakir-i Rum” (the Greek troops) and that these Armenians and Greeks were drafted from the same places where non-Muslims were conscripted in 1835 and 1837, we can suggest that most of these non-Muslims were also recruited as soldiers, though without being part of the regular troops.\(^{193}\)

The way workers were categorized in these registers suggests that all of these workers, regardless of their status and how they were brought in, were organized in a military hierarchy, in different companies supervised by corporals, sergeants and captains. Contrary to the future practices of military employment in the Arsenal, these *Riştehane* workers in 1837 were categorized and organized on a religious basis. Muslim troops, who were listed under the “asakir-i bahriye” were paid 20 *para* (p) a day, whereas “boys’ naval troops” were paid 15p.\(^{194}\) Their sergeants and captains were paid around half a piaster more than them. The all-Muslim “reserve troops”, on the other hand, both boys and adults, were paid 10p. Greeks, Armenians, and

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\(^{190}\) See Chapter 4 for details about the conscripted boys in the navy.

\(^{191}\) The reserve forces in the Ottoman army were launched in 1834. Initially having a local militia character, with a voluntary nature, in 1836, the government decided to use them in peacetime for three months a year. Heinzelmann suggests that the recruitment of reserves for the Ottoman navy started in 1838, referring to an order to Trabzon governor Osman Pasha in October 1838. The *Riştehane* registers I use from the year before should suggest that it might have started earlier, as the *Riştehane* employed naval conscripts. Another explanation, of course, is that land reserves might have been transferred to the *Riştehane* in case they were urgently needed at the time. See Tobias Heinzelmann, *Cihaddan Vatan Savunmasına: Osmanlı İmparatorluğu'nda Genel Askerlik Yükümlülüğü, 1826-1856*, trans. Türkis Noyan (İstanbul: Kitap Yayınevi, 2009), 81-82.

\(^{192}\) BOA.D.BŞM.TRE. d.15713 and BOA.D.BŞM.TRE.d.15716. See Chapter 4 for more on these boys.

\(^{193}\) Compare the registers with the table in Heinzelmann, *Cihaddan Vatan Savunmasına: Osmanlı İmparatorluğu'nda Genel Askerlik Yükümlülüğü, 1826-1856*, 281.

\(^{194}\) In this period, 40 *para*=1 piaster.
Armenian boys, listed under separate categories, were all paid the same amount as the reserve troops, 10p a day. Just like the regular troops, non-Muslims were also supervised by sergeants, captains and corporals, all, however, being exclusively Muslim.\textsuperscript{195}

The wage distribution in the register shows that the workers who were not enlisted as regular naval troops (\textit{asakir-i bahriye}) received the same amount of wages regardless of their age, religious identity, and civilian/military status. This suggests that the Ottoman bureaucratic elites viewed all of these workers through their labor relation to the Ottoman state, rather than their other characteristics. In this regard, the regular troops (including the boys) were employed as regular workers who received higher wages than their irregular counterparts. This, in turn, points to the mindset of the Ottoman state elites, which considered military service as only another, but more regular and modern, form of drafted -or “tributary”- labor. This mindset explains why these elites turned their attention to the conscription system in their efforts to move away from employing wage labor in the 1830s.

\textbf{The Militarization of the Labor Force in the Imperial Arsenal}

Soon after the plan was approved by Sultan Mahmud II,\textsuperscript{196} Safveti was encouraged to initiate another reform plan on a much larger scale. His goal now was to militarize the entire labor force in the Arsenal. Safveti’s second and larger scheme did not proceed as smoothly as the first one, however, as it concerned thousands of civilians already employed here. Thus, the reform plan he initially proposed with the Grand Admiral, Ahmed Fevzi Pasha, was accepted after long negotiations with different parts of the Ottoman bureaucracy.\textsuperscript{197} The text of the initial plan for the

\textsuperscript{195} BOA.D.BŞM.TRE. d.15713
\textsuperscript{196} BOA.HAT.1332/51932 (undated).
\textsuperscript{197} BOA.HAT.1243/48301B (undated). See Appendix A for the full details of the plan. The plan was prepared and presented to the High Council (\textit{Meclis-i Vala}) most likely in mid-to-late 1838, as the High
Imperial Arsenal starts with a summary of recent changes that took place in the labor profile. Accordingly, until very recently, the regular workers (*yerlu amelesi*) in the Arsenal had mostly consisted of those who were too old and incapable to work. Another group of unskilled workers like porters and day laborers (*rençberan*), on the other hand, had been drafted from the guilds, who also proved to be “useless”. The previous year, in 1837, those old workers among the regulars were discharged, and the practice of forced guild labor was abolished in return for a fee that would fund the employment of civilian workers in the Arsenal. The authors of the plan admitted that these changes worked out well, as now the Arsenal employed young and skilled workers who worked “by their own will” for wages. However, this wage relation was a problem in itself: “Needless to say, in the arsenals of European states, no workers are hired as such, as all of their workers are recruited as soldiers, who in peacetime work in their arsenals, and during campaigns, a number among them are employed in the navies, so that they can improve their ‘naval knowledge’ (*fünun-i bahriye)*.”

Council itself was launched in March 1838, and in early 1839, the Grand Admiral went on an expedition against the Egyptians. In July 1839, following the death of Mahmud II, Ahmed Fevzi Pasha defected by surrendering the entire fleet under his command to the Egyptians. See Khaled Fahmy, *All the Pasha's Men*, 288. In August, Safveti Musa was appointed to another office, see Mehmet Süreyya Bey, *Sicill-i Osmanî*, vol.5, 1434.

198 This refers to a previous policy led again by Safveti Musa, according to which all architects were held to examination by the American head carpenter, Charles Ross. The reason was the belief that most of them were not as skilled as they were supposed to be, being “somehow” raised to the rank of architect from among the carpenters. See DMA.ŞUB.1/32b, 26 Şaban 1253 (25 November 1837).

199 See Chapter 1 for more details.

200 Ibid. It was most likely that Safveti was referring to the continental European states, particularly France, where Napoleon’s reforms targeted the militarization of the workers in the shipyards in the first decade of the century. These workers had been conscripted from the coastal areas as part of the practice of “*l’inscription maritime*”, introduced by the French Minister of Finance, Jean Baptiste Colbert, in the era of Louis XIV, by dividing all seafarers in coastal areas into different classes and obliging them to serve in the navy on a periodical basis. Napoleon’s reforms required them “to wear uniforms and live in military barracks unless they had wives in town.” However, these efforts to militarize the shipyards failed due to the increasing incompatibility of conscript seamen with the newly introduced steam technology in the first half of the nineteenth century. As a result, conscription for shipyards was abolished in 1864. Donald Reid, "The Third Republic as Manager: Labor Policy in the Naval Shipyards. 1892–1920 " *International Review of Social History* 30, no. 2 (1985): 186. In contrast to France, where the duration of military service was
According to the report, if workers in the Imperial Arsenal were recruited in the same way through naval conscription, the navy would also possess an entire army of soldiers with “naval skills” in a very short time, in addition to its advantages for shipbuilding. The plan was proposing to follow the British navy in this regard, where each unit of vessels consisted of 30 to 50 craftsmen, e.g. carpenters, caulkers, etc. In this way, around 500-600 of them would become competent in naval skills in a single campaign. The following expeditions would employ the remaining workers, and in this way, the entire labor force, when needed, would be ready to join the long-lasting campaigns on the sea. In a short period of time, the navy would possess a massive labor force with both industrial skills for production and naval skills for seafaring.

The underlining connection here between regular conscripts and skilled labor seems to be a direct imprint of military reform debates on the restructuring process in the labor force. The discussions on military reform among the ruling elite in the early nineteenth century underlined that there was a dualism between a “muvażzař” (regular) soldier, who was disciplined and trained, and a “başibozuk” (irregular) soldier, who was neither disciplined nor skilled enough. In this mindset, “discipline” and “skill” were correlated. These discussions were underlining that the lack of order and discipline in the army was the most important factor in the incapability of soldiers in the field, from the inability to use their weapons to the lack of tactical knowledge. It seems that the discussions on the militarization of labor in the late 1830s were highly influenced by this mindset. In order to have a skilled labor force in the Arsenal, the most important prescription was the institutionalization of discipline in the form of an army model. Thus, in this

three years, the Ottomans were still relying on a longer period to train the soldiers in new technologies. By the early 1860s, conscripts were obliged to serve for eight years in the Ottoman navy.

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201 BOA.HAT.1243/48301B
sense, militarization of labor should be understood as part of the larger process in the nineteenth century that came to be associated with industrial modernity.

The plan then moves on to describe how the existing civilian labor force should be transformed into a military one. Although some of the “unskilled” and the “old” within the current labor force had already been discharged, there were still “older” and “unskilled” workers remaining in the Arsenal, all of whom should be dismissed. The administration had already made the necessary investigation as to who should be sorted out, and the number amounted to 631 among 3,384 workers. The rest, 2,753 workers, were found to be appropriate for the design but the number was not enough, as shipbuilding, repair and manufacture in the Arsenal were increasing “day by day.”

According to the bureaucrats, the labor force was to consist of around 5,000 workers, divided into five battalions (tabur). For this goal, the existing workers would be transferred to these battalions to become a part of the Asakir-i Bahriye, and of the remaining 2,321 workers who would be recruited to fill in the ranks of five battalions, 1,366 would be transferred from the existing conscripts in the navy to serve in “easy tasks”, and 955 workers who would serve as ironsmiths, carpenters, porters and day workers would be drafted preferably from the guilds in Istanbul and if not, from provinces, to be registered to the Asakir-i Bahriye only after their arrival. This latter group of workers, as admitted by the authors, would mostly consist of non-Muslims.

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203 BOA.HAT.1243/48301B
204 Ottoman documents throughout the rest of the nineteenth century referred to them as the “labor” (esnaf) or “industrial” (sanayi) battalions.
205 Ibid.
Of course, this was a sensitive process in the sense that the existing civilian workers were to be convinced to transfer to a military status, and more so, those 955 workers who would be recruited from among the civilian population would not as easily find it attractive to work under military discipline, with lower wages. Thus, the authors of the plan were urging the authorities to carry the process in absolute secrecy and in a gradual way. Accordingly, the Arsenal officials should first approach the guilds in Istanbul to recruit their members, “telling them that they will be employed as workers in the Imperial Arsenal (Tersane-i Amire’dede amele suretinde istihdam olunacak diyerek)” without giving any “clues” as to the ultimate goal. Also, as discharging more than 600 workers at once would provoke a reaction from the workers, they were to be laid off gradually, in parallel to the arrival of the new recruits. As to the transfer of current workers into military status, it should begin only after the recruitment of new workers was completed. However, how these workers would accept this status remained vague in the text.206

This vagueness led the Council of the Sublime Porte (Dar-ı Şura-ı Bab-ı Ali), who convened to decide on the proposal, to call in Safveti Musa to discuss further on how to militarize civilian workers in the Arsenal.207 According to the members, since many of these civilians were skilled workers, it was obvious that they would try to run away at the first opportunity due to their discontent with the considerable decrease in their daily wages (from 4-6 piasters to 20-40 para), despite the provision of food, uniforms, and salaries by the navy, as their wages would not be sufficient especially for those who had families. And now as they would be counted as “registered” like other regular soldiers in the navy, it would be necessary to forcefully put them to work in case they were unwilling to do so, a prospect that would make it harder to convince

206 Ibid.
207 BOA.HAT.1243/48301A
skilled workers to stay in the Arsenal. The undersecretary, in response, argued that their emphasis on “secrecy” in their proposal was exactly meant to address these issues, and that the workers would gradually adapt to their new status with further “encouragement and incentives.” Safveti insisted on the advantages of putting the labor force in the Arsenal in order, “underlining his own efforts on this issue so far.” Although Safveti succeeded in convincing the council to approve the plan, the latter nevertheless felt it necessary to reiterate and emphasize that the guild members in Istanbul should never be forced to work and they were to be sent to work in the Arsenal “without complaint” (şamatásaça), and the whole process should be carried out in secrecy without leading to the discontent of current workers. The plan was approved by the High Council (Meclis-i Vala) and then by the Sultan, who as well confirmed “the necessity to put the workers of the Arsenal into an order.”

As discussed above, the plan did not usher in an entirely new idea, as militarization had already started. The goal was to take this idea to its uttermost extent, by militarizing the entire labor force with the help of systematic conscription. In effect, according to the attached statistical records regarding the actual distribution of workers in the Arsenal, there were already 405 soldiers (out of 2,753 workers) employed in the Arsenal, most of whom were carpenters, caulkers, block makers and sailmakers. Thus, the main issue to be solved was how to militarize the present civilian workers and how to bring in new soldiers to increase the number of skilled workers in the Arsenal, without depending on the labor market. For the first part of the problem, the plan proposed to appoint most of the foremen and the married workers in each craft as officers (zabit) in the form of captains, sergeants and corporals. Probably, this was the core of

208 BOA.HAT.1243/48301
209 BOA.HAT.1243/48301F
what Safveti thought of as “incentives”, as these ranks would give them a higher income, status, and benefits.\textsuperscript{210}

The second part, on the other hand, depended on the efficiency of drafting conscripts for the Arsenal on a regular basis. The ideal solution in this regard was the conscription of non-Muslims directly to the Arsenal, which would increase the efficiency of both naval conscription and naval production. Drafting non-Muslims for the Arsenal would not only facilitate conscription from the Muslim population, by alleviating the burden of military duty that had been almost entirely on Muslim subjects, but would also make it more likely to convince the non-Muslim subjects for conscription since they would be conscripted only for non-combat assignments in Istanbul. This would enable the naval administration to continue utilizing the naval skills of non-Muslim subjects, especially Greeks, by systematizing their draft for the navy. In this sense, the conscription system was redressing the decades-old (coerced) draft of skilled labor from coastal areas under modern terms.

\textbf{The Role of Non-Muslim Conscription in the Militarization of the Labor Force}

The issue of whether non-Muslims were recruited to the Ottoman military as regular soldiers before 1856 is a controversial one. Mainstream historiography tells us that conscripting non-Muslims was “never a serious option” until the 1908 Revolution, as even after the \textit{Islahat} Edict of 1856, which stipulated military service as part of reforms guaranteeing religious equality, this permission remained de jure, since non-Muslims were given the option to pay an exemption fee for military service, a very low amount compared to what their Muslim counterparts were obliged

\textsuperscript{210} Ibid.
to pay. Gülsöy, in his study on non-Muslim conscription, challenges this depiction by arguing that non-Muslims were conscripted to the navy as “muvazzaf” (regular) soldiers beginning with 1835. Heinzelmann follows Gülsöy in challenging the mainstream narrative in his study on the history of Ottoman conscription before 1856, but opposes the view that non-Muslims were drafted as regular soldiers in the 1830s, arguing that there is no evidence that supports this argument in the imperial edicts of the time. According to Heinzelmann, since the intra-elite discussions on the systematic conscription of non-Muslims began only in the late 1830s, non-Muslim conscription before the military reforms of 1843-46 was probably based not on a systematic regulation that would lead us to call these recruits “regular”, but rather on a traditional practice that employed non-Muslims only whenever the navy needed them.

This disagreement is likely due to the confusion triggered by the Ottoman bureaucratic correspondence on the subject. In an effort to prove that conscripting non-Muslims following the introduction of the modern conscription system with the Lottery Regulation of 1846 was not a new practice, Ottoman bureaucrats referred to the non-Muslim drafts of 1835 and 1837 as earlier examples of non-Muslim conscription for the navy. The discussion above regarding the organization of the labor force in the Rüştehane underlined that although these recruits served as workers, they were excluded from the category of the Asakir-i Bahriye, and although they were organized as companies, they were all excluded from the military ranks, and their wages were lower than that of regular troops. In other words, these military recruits were not thought of as “regular soldiers” but rather were recruited in the same way as non-Muslims had been recruited.

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212 Ufuk Gülsöy, Osmanlı’nın Gayrimüslim Askerleri (İstanbul: Timaş, 2010), 29.
213 Heinzelmann, Cihaddan Vatan Savunmasına: Osmanlı İmparatorluğu’nda Genel Askerlik Yükümlülüğü, 1826-1856, 213.
214 Ibid., 206.
to the navy before this period, hence demonstrating a continuity between the employment of non-Muslims as drafted laborers and their employment as soldiers.

But an important question still awaits its answer: In the 1830s, why were non-Muslim workers recruited as “soldiers” for the Riştehane, but not through the same way as many other provincial workers were, as drafted laborers? This could probably be understood within the larger context of traumas triggered by the rebellions, first by the Greeks in the 1820s, and then by the Egyptian governor Mehmed Ali Pasha in the 1830s. The eruption of the Greek uprisings in the early 1820s made Sultan Mahmud II highly suspicious of the employment of non-Muslims, especially Greeks, in the navy, based on the widely-held belief that Greeks who were trained in the Ottoman navy played a significant role in these rebellions.215 Thus, as discussed above, throughout the 1820s, the Ottoman government made desperate efforts to replace Christians with their Muslim counterparts in the Arab provinces. As a result of the failure of these efforts, in 1835 and 1837, in the midst of a manning crisis that threatened the war-making capacity of the navy, the government once again had to turn towards its non-Muslim subjects in order to address its labor shortage.

It seems that, at least initially, these two levies seem to have been a temporary solution to the problem of labor shortage in the late 1830s. However, the documents in the 1840s regarding the replacement of these recruits with their Christian counterparts suggest that at least following the Tanzimat Edict of 1839, the state elites had a desire to systematize this recruitment by integrating it into the modern conscription system, which was essentially introduced for the Muslim subjects in this period. Considering that Safveti Musa’s above-mentioned report

underlines the significance of acquiring a labor force equipped with both industrial and naval skills, it is most likely that after the naval administration started implementing this plan, the naval elites realized that integrating these non-Muslim soldiers into the conscription system would critically contribute to the success of this plan, by systematizing the recruitment of especially the Greek subjects of the coastal areas, who were already familiar with seafaring and shipbuilding.

The original “Lottery Regulation” (Kur’a Nizamnamesi) of 1846 underlined that military duty was an obligation of all “Muslims” without mentioning any responsibility on the part of non-Muslim subjects.216 However, immediately after the introduction of the Nizamname, we see that the government attempted to use the same system in conscripting non-Muslim soldiers both for the Rıştehane and the Imperial Arsenal. As Heinzelmann demonstrates, there indeed were discussions, starting from the late 1830s, to conscript non-Muslims regularly to the army.217 This was linked to the Tanzimat ideology that aspired to create an Ottoman nation of equal citizens, sharing rights and responsibilities regardless of their religious identities. The reformist bureaucrats, who defended this idea against their conservative counterparts in the 1840s, were pointing out to the earlier examples of non-Muslim conscription, especially in the navy, leading to the above-mentioned confusion on this topic. Indeed, according to a statistic published by Panzac, in 1845, 1,188 Christians were employed in the navy, 660 of which were sailors, the remaining being workers in the Arsenal and its workshops.218 And unlike the registers of the

218 Daniel Panzac, “The Manning of the Ottoman Navy in the Heyday of Sail (1660-1850),” 54. Panzac’s data, based on the French archives, should be read cautiously, for only 825 out of 10,765 are listed as “soldiers”, which correspond to the marine corps, rather than the entire Asakir-i Bahriye. Many workers in the Arsenal, Muslim and non-Muslim, were identified with the Asakir-i Bahriye at this point. See, for example, wage registers of 1845 in DMA, Env.355 for Kanunuevvel 1261 (December 1845/January 1846) and DMA.Env.358 for Nisan 1261 (April/May 1845).
Riştehane, the wage registers of the Arsenal from this period suggest at least some of these Christians were now enlisted as part of the Asakir-i Bahriye. For example, out of the 45 soldiers who were employed in the Ironworks (Demirhane) in 1844, 15 were Christians, both Greeks and Armenians.\footnote{DMA.Env.112, Şubat 1259 (February/March 1844).} Similarly, as mentioned above, Safveti’s militarization plan openly acknowledged that most of the 955 craftsmen who would be drafted from the guilds for the labor battalions of the Asakir-i Bahriye were expected to be Christians. In short, beginning with the late 1830s, the Ottoman elites started to think of Christians as part of the regular conscript forces, and they were drafted as such until 1856. In this sense, the Imperial Arsenal served as a laboratory for non-Muslim conscription in the Ottoman Empire during this period.

Thus, it was not surprising that immediately after the Lottery Regulation, which put the obligation to serve in the military on individuals, rather than on the communities or local towns and provinces, the Ottoman elites wanted to immediately adapt it to the non-Muslim draft as well, as an evidence of the elites’ desire to conscript non-Muslims regularly and exclusively for the labor battalions in the Arsenal and the Riştehane. The reason for this desire was the acknowledgement on the part of the state elites that the rate of production could not increase as expected, since the militarization in the labor force could not be implemented as smoothly as it was anticipated by Safveti Musa in the late 1830s. According to Panzac’s above-cited study, there were only 1,813 workers in the Arsenal in 1845, far from the 5,000 workers as planned by Safveti. More so, most of these workers were still civilians, according to different wage registers from this period. In 1844-45, only 188 out of 684 carpenters, 69 out of 164 augerers, and 58 out
of 214 caulkers were soldiers.\textsuperscript{220} It was now obvious that the plan to militarize the labor force could not exclusively rest on the Muslim subjects of the Empire, which further convinced the state elites to consider non-Muslims for regular conscription.\textsuperscript{221}

Negotiations among the state elites on conscripting non-Muslims after the Lottery Regulation clearly demonstrate the significance of non-Muslims for the militarization of labor in the Arsenal. In 1847, when Halil Rifat Pasha, who had launched the first experiments of the militarization of labor in the navy around sixteen years earlier, was for the third time appointed as Grand Admiral, he immediately launched a new campaign to what had so far been left incomplete in the militarization process. He asked for 4,000 soldiers to be employed at once in shipbuilding, apparently to reach the goal set by his fellow reformer, Safveti.\textsuperscript{222} However, there was a problem in his request, as Halil Rifat demanded all these soldiers be drafted from the Muslim districts that exclusively belonged to the land army. The army commanders strictly rejected this request, arguing that the subjects in these districts would not admit naval conscription as the length of service in the navy was now fixed to ten years with the conscription system, being two times longer than that of the army. Subjects had already been informed which army their districts belonged to and how long they would be required to serve. Therefore, they argued, any attempt that contradicted this promise would provoke hostilities from these subjects, to the extent that it could endanger the army’s own recruitment efforts.\textsuperscript{223}

\textsuperscript{220} See DMA.Env.128 for March 1260 (March/April 1844) and Env.355. The numbers exclude those civilians who worked more temporarily, a fact that further consolidates the majority of civilian workers in the Arsenal.

\textsuperscript{221} In fact, the same concern about the risks of limiting conscription entirely to Muslims set the terms of the debates on the inclusion of non-Muslim subjects in the army. See Şimşek, "The First "Little Mehmeds": Conscripts for the Ottoman Army, 1826-1853," 295.

\textsuperscript{222} BOA.İ.MSM.16/357, 28 Safer 1263 (15 February 1847).

\textsuperscript{223} Ibid.
The reason why Halil Rıfat sought to include the army districts for naval conscription was merely a logistical issue: The Muslim populations who were held liable to military service for the navy were mostly limited to coastal areas and as most of these conscripts were placed on vessels, only a small number of them could be sent to the labor battalions in the Arsenal or in the Rıştehane. In other words, entirely relying on the Muslim populations of the naval districts would require, at its best, a number of years to reach the necessary number of conscript-workers in the Arsenal, whereas the Arsenal needed these workers “immediately for the construction of warships.” Thus, one single solution emerged at the end of the negotiations: Halil Rıfat would give up one thousand of the initial number he proposed, and of the remaining 3,000 soldiers, 2,000 would gradually be collected from the Muslim populations of the naval district, and 1,000 would immediately be recruited from the non-Muslims of coastal towns and islands.  

The correspondence is clear enough that the recruitment of non-Muslims was not a one-time effort forced by occasional necessities. The documents pointed out to a consensus regarding the need to conscript these non-Muslim soldiers in a regular way by lottery. However, the lack of census data of these districts made it impossible to implement the lottery system. Thus, it was decided that the lottery “would be implemented within the next years” as soon as this data would be available. In short, the bureaucratic elites were aware of both the burden the conscription system levied on the Muslim population and the impossibility of maintaining a fully militarized labor force by exclusively depending on the Muslims. Thus, the desire to recruit non-Muslim soldiers was less due to the concerns to keep the Tanzimat Edict’s promise for the equal

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224 Ibid.
225 Ibid.
treatment of subjects, than to maintain and expand the militarization of labor relations in the Arsenal.

Throughout the correspondence, we see a special effort to justify the conscription of non-Muslims into the navy, by emphasizing more than once that non-Muslim soldiers had already been employed in the navy in the past and that presently there already were non-Muslims among the soldiers working in the Arsenal. On the one hand, this should be seen as an effort to appease anxieties among conservative statesmen regarding the presence of non-Muslims in the military. On the other, however, it had much to do with appeasing the non-Muslim population as well. Until the official recognition of the obligation of non-Muslims to serve in the military by the Reform Edict of 1856, as part of their recognition as equal citizens of the Empire, a specific justification was needed to convince the non-Muslim subjects to accept naval conscription. In an attempt that would anticipate the methods used a few years later, the High Council’s letter in 1847 specified what was to be written in orders sent from the center for non-Muslim conscription: These orders would underline that those non-Muslims who had already been employed in the Arsenal for a long time needed to be replaced by their non-Muslim fellows, just like Muslim soldiers were replaced periodically by fellow Muslims. Denying non-Muslim soldiers in the Arsenal release from this duty would be an injustice to them, as this would further extend their term of service.

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227 BOA.İ.MSM.16/357.
The Impacts of Resistance and Desertion on Militarization

The success of Safveti’s plan to create a conscript army of workers depended on the effectiveness of military recruitment which would ensure the arrival of conscripts to the Arsenal on a regular basis. This obviously required an efficient conscription system, which would clearly define who would be drafted from where, according to which criteria, and for how long. Before the military reforms that basically aimed to systematize the recruitment process along these lines, an imperial edict (emr-i ali) was issued addressing specific districts, or religious communities, asking for a specified number of men for the Arsenal or the navy. Most of the time, the edicts did not identify any criteria for the recruits, except that these men should be drafted from among the “young, strong, and skilled men” in these districts or communities. In the first decade of the Asakir-i Mansure, the length of service was set to be 12 years. However, in order to gain access to retirement wages, soldiers would have to continue their service until they were severely injured or became too old to be able to serve.228 However, such limits were subject to change if the military administration lacked man-power, especially during war-like crises.

As this required almost a lifetime commitment, resistance to recruitment was unavoidable, and marked early attempts of military recruitment in the 1830s. The number of those who volunteered to serve as soldiers was so limited that the local officials or religious communities, who were required to draft a certain number of soldiers, often had to forcefully apprehend and send lower-class people, mostly targeting the young poor and outcasts, to meet this number.229 This was not, however, fully inconsistent with the policies of the center, as documentary evidence suggests that “the state clearly considered bachelors, vagrants (serseri), non-registered or ‘excess’

229 Heinzelmann, Cihaddan Vatan Savunmasına: Osmanlı İmparatorluğu'nda Genel Askerlik Yükümlülüğü, 1826-1856, 67.
shopkeepers, vegetable sellers, and other migrant day workers an easily accessible group” for conscription. Christians who were recruited by means of their patriarchs were not in a better situation. In effect, in 1847, the Greek communities in Salonica who were obliged to send 150 soldiers from the region were forcefully drafting peasants, tying their hands like convicts and bringing them to the town like they did with “herds.” In parallel to such scenes, desertion and resistance became an organic part of the military recruitment process.

It was probably due to his knowledge of the desertion rates that Safveti was proposing a gradual transition to the five-battalion army of labor in the Arsenal. As mentioned above, in 1837, the year Safveti gave his first proposal, the government attempted to recruit conscripts for the navy from among the Greeks in islands and coastal towns, by means of the Patriarchate. However, due to some “improper”, tactless ways in recruiting these conscripts, many non-Muslims deserted during the initial attempt. Interrogated by the government, the Greek Patriarch, apparently feeling the pressure on his own post, defended his institution, arguing that it did everything properly, that the number of runaways was exaggerated, and that those acts of desertion and even those exaggerations were due to the rumors emanating from the “seditionists” who led “a few ignorant men” to desert their homeland based on their fear. The Patriarch, paying a special effort to convince the government of the obedience and the loyalty of his Greek subjects (a critical emphasis especially after the Greek War of Independence), ensured the government that those deserters would soon return and the Patriarchate would act more tactfully from now on, and asked for a pardon for those deserters and the entire recruits for this time. The Sultan, in his edict, underlining that granting a pardon for all recruits would lead to other rumors and “would be

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231 Heinzelmann, Cihaddan Vatan Savunmasına: Osmanlı İmparatorluğu'nda Genel Askerlik Yükümlülüğü, 1826-1856, 234.
misunderstood in Europe,” ordered that at least around 500 people be conscripted and employed in the Arsenal, but if recruiting them by their own will was not possible, the practice should be abandoned “for the time being”.232

Putting an end to these misdeeds in military recruitment was a main goal of the military reforms in the first decade of the Tanzimat Era. The reorganization of the recruitment system was promised in the Tanzimat Edict of 1839, the Conscription Law was enacted in 1843, and the method of recruitment was specifically systematized with the introduction of the lottery (kur’a) system in 1846. The lottery was basically individualizing the military obligation by helping to strictly define who would be called on for the military service. According to the system, the government would assign each district a number of soldiers they were obliged to send. Then “lottery councils”, membered by the local elites in each district, would gather all local men of a certain age and hold the lottery. Those who drew the lot were supposed to turn themselves in to the army.233 In this way, the system was promising to bring justice to the recruitment process by eliminating widespread corruption that favored the local elites who put the entire burden of conscription on lower classes.

Despite such efforts at systematizing military recruitment, for the naval bureaucracy, resistance against conscription was not unexpected. In 1847, the Sultan issued an imperial order for the conscription of 1,156 non-Muslims from the coastal districts of Anatolia.234 In the correspondence about this conscription, officials were clear about the possibility of some amount of resistance from local communities, though they believed that it was less risky than the other

232 BOA.HAT.779/36493 (undated).
233 Şimşek, "The First "Little Mehmeds": Conscripts for the Ottoman Army, 1826-1853," 299-300.
234 For the full list of these districts and the distribution of the number of soldiers per each district, see Heinzelmann, Cihadden Vatan Savunmasına: Osmanlı İmparatorluğu'nda Genel Askerlik Yükümlülüğü, 1826-1856, 283.
options. In line with their expectations, in 1847-48, as a result of acts of desertion, only 834 of them could be brought to the Arsenal, with 322 of them missing.\textsuperscript{235} At first sight, the number of missing soldiers might be high, but that the following year the government planned conscripting almost 1,500 (the missing included) suggest that the number of arrivals, in spite of runaways, might have encouraged the officials to continue with conscripting non-Muslims. However, the mere rebellious capacity of these resistances must have become much more threatening when the 1848 revolutions broke out and quickly disseminated in Central Europe. Referring to the possibility of the spread of these revolutions to the Ottoman territories, the government cancelled the 1848 conscription from non-Muslims and did not attempt to conscript them until 1851.\textsuperscript{236}

It seems that the Ottoman bureaucrats at the center were attributing these acts of desertion to the mistreatment of non-Muslim subjects by local officials, as the central government sent specific orders to the provincial administrations, warning them to put an end to the wrongdoings in conscripting non-Muslims for the Arsenal.\textsuperscript{237} They believed that this misconduct occurred due to the absence of a specific “regulation” that would standardize the recruitment of non-Muslims, just like the lottery system implemented for Muslim conscripts.\textsuperscript{238} Aside from the desperate need to conscript non-Muslims in order to eliminate labor shortage in the Arsenal and the navy, the Tanzimat bureaucracy was optimistic enough to believe that once the conscription process was taken out of the control of local bureaucracy and strictly regulated by laws, the problems with conscripting non-Muslims for the Arsenal would come to an end.

\textsuperscript{235} Gülsoy, \textit{Osmanlı'nın Gayrimüslim Askerleri}, 47; Heinzelmann, \textit{Cihaddan Vatan Savunmasına: Osmanlı İmparatorluğu'nda Genel Askerlik Yükümlülüğü}, 1826-1856, 283. For examples of desertions and pardon petitions from local communities, see BOA.MVL.13/2, 17 Receb 1263 (1 July 1847) and BOA.A.MKT.90/37, 29 Receb 1263 (13 July 1847).
\textsuperscript{236} Gülsoy, \textit{Osmanlı'nın Gayrimüslim Askerleri}, 54-55.
\textsuperscript{237} Ibid., 47.
\textsuperscript{238} BOA.İ.DH.153/7936, 2 Şaban 1263 (16 July 1847).
It was this optimism that led the Sultan to issue a decree in 1850, which ordered the gradual dismissal of all civilian (başibozuk) workers from the Arsenal, to be replaced by soldiers, with the increase in the number of labor battalions from two to, initially, three, and gradually to six battalions in the following years.\textsuperscript{239} Apparently, the government was relying on the efficiency of both Muslim and non-Muslim conscriptions with the introduction of lottery, as imperial orders on the conscriptions in 1851 and 1852 clearly referred to the necessity to fill in the labor battalions after the decree of 1850.\textsuperscript{240} In this way, the administration was probably hoping for the complete militarization of the labor force by means of increasing systematization in the conscription system.

There seems to be another important factor that pushed the naval administration to take this decision. As the next chapter will discuss in detail, in the late 1840s, with the increasing employment of screw-propelled technology in vessels, it became clear that steamships would play an increasingly important role in naval warfare, which led the administration to purchase more steamships and convert the sailing vessels in the navy to steam vessels. Furthermore, again in the same period, new attempts were made to modernize and expand the production process, by mechanizing the existing workshops or founding new ones, in addition to the plans to construct a new drydock. These attempts were crowned by the establishment of a mechanized ironworks in the Arsenal in 1852. The correspondence on such schemes underlined the advantage of mechanization for labor-saving and the disturbance with the persistent complaints of civilian workers for their low wages. Thus, the budgetary deficits that partly curtailed these mechanization efforts seem to have further convinced the state elites that the transformation

\textsuperscript{239} BOA.A.AMD.18/2, 7 Cemaziyülahir 1266 (20 April 1850).
\textsuperscript{240} For examples, see BOA.A.AMD.42/33, 13 Cemaziyülevvel 1269 (22 February 1853) and BOA.İ.DH.248/15136, 21 Rebiülahir 1268 (13 February 1852).
process could gain a new momentum when they fully took on the economic advantages of saving labor by means of the conscription system.\textsuperscript{241}

Increasing resistance to conscription, especially from the non-Muslims, critically undermined these efforts, however. Non-Muslims of coastal regions who were asked to send 600 soldiers by means of lottery in 1851 resisted by massive waves of desertion and pardon requests. As a result, only 390 of them arrived in the Arsenal. This time, the government interpreted these resistances as being provoked by the local elites, who would lose their privileges as they would not be able to exempt their own sons in the lottery system. Furthermore, non-Muslim communities apparently perceived this draft as the beginning of a new system by which they would have to send conscripts every year. Especially in Castoria (Kesriye), Bitola (Manastır) and Trabzon massive rates of desertion were accompanied by pardon requests which again complained how families were destroyed and economic conditions worsened as young male members of these families were running away to the mountains, or, in the Black Sea, to the Russian territory. This resistance not only forced the authorities to delay conscription by lottery in these regions, returning to the old way to leave the draft to local or religious officials, until “these districts would get used to the new system.”\textsuperscript{242} In 1852, in response to such resistance, the government decreased the length of service from 10 to 8 years to encourage naval conscription.\textsuperscript{243} In 1853, with the start of the Crimean War, the administration had to transfer part of the soldiers in the labor battalions to the navy, and replaced these conscripts with civilian workers. At this point, the plan for the complete militarization of the labor force practically collapsed.\textsuperscript{244}

\textsuperscript{241}See Chapter 3 for a detailed analysis of these schemes.
\textsuperscript{243}DMA. MKT.16/10, 9 Şaban 1268 (29 May 1852).
\textsuperscript{244}For an example of civilian recruitment due to this transfer, see BOA.A.MKT.NZD.82/13, 26 Ramazan 1269 (3 July 1853).
At the end of the War, in 1856, the Sultan, under European pressures, issued the Reform Edict (İslahat Fermanı) that recognized the equality of all Muslims and non-Muslims by abolishing the poll tax and granting them the right to serve in the army. The edict also brought an exemption fee for military service, lower for non-Muslims than for Muslims. The edict, in theory formalized non-Muslim conscription, in practice eliminated the naval pool of non-Muslim conscripts for the labor battalions in the Arsenal, by merely offering a legal way to evade conscription for non-Muslim subjects. As a result, the entire burden for naval conscription fell again on the Muslim subjects in the following decades, who continued to resist not merely through desertion, but in some instances by converting to Christianity in order to evade military conscription by paying lower exemption fees.\(^\text{245}\)

In addition to the number of conscripts, this resistance undermined the initial plan for a fully conscripted labor force in another way as well. Following the Reform Edict of 1856, ongoing pressures from the Muslim subjects on the administration regarding the long term of naval duty forced the latter to decrease the length of military service in the navy, first from 8 to 6 years in 1865, and then from 6 to 5 years in 1880.\(^\text{246}\) In the context of dramatic transformation of the naval industries in the mid-nineteenth century, such a decrease came as a major blow to the initial plans for industrial modernization in the navy. The mechanization of production, the increasing role of steamships in the navies, and the introduction of ironclads made a skilled labor force even more indispensable for naval production. To get the most out of the militarization of labor, it was essential that these conscripts could be trained and then employed for a considerable

\(^\text{245}\) For examples of correspondence on how to deal with such converts especially in the Black Sea districts of Gümüşhane and Trabzon throughout the 1860s, see DMA.ŞUB.48/15-A, DMA.Env.1824/49-50, and BOA.A.MKT.NZD.416/42. For the perception of the Muslim population toward conscription, see Şimşek, "The First "Little Mehmeds": Conscripts for the Ottoman Army, 1826-1853." 282-88.

\(^\text{246}\) DMA.MKT.66/63, 14 Receb 1282 (3 December 1865) and DMA.MKT.336/22, 9 Cemaziyülevvel 1297 (19 April 1880). 

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period of time in the Arsenal. However, as industrial transformation also transformed and complicated the naval crafts, training these conscripts occupied a remarkable portion of military service, which made the employment of fully trained and experienced labor in the Arsenal a challenging task for the administration, since the conscripts were released shortly after they gained the industrial skills and experience.

Both these factors, directly rooted in resistance against conscription, as well as the occasional need of the navy for additional conscripts, who were transferred from these battalions especially during wars and rebellions, paved the way for the emergence of a mixed labor force, consisting of both civilians and conscripts in the Arsenal in the 1860s. By the end of the decade, of the 4,830 regular workers employed, around 1,500 of them were conscripts, including the boys’ companies. These conscripts were employed in various factories and workshops within the Arsenal, though they had a fixed wage range, between 20 para and 40 para, regardless of their jobs, in addition to the monthly remuneration of naval conscripts.247

Although Safveti’s initial plan to possess a fully militarized labor force of 5,000 conscripts did not come to fruition, these conscripts still played an important role in maintaining and expanding the production process in the Arsenal. From 1852 until 1861, when the mechanization efforts and the introduction of steamships continued amidst the budgetary problems led by the Crimean War of 1853-56, the administration abolished the payment of wages

247 BOA.ŞD.2/29, 25 Ca 1289 (31 July 1872). See Chapter 5 for details about this document and the profile of arsenal workers. In the early 1860s, the number of conscripts employed in the Arsenal was around 2,000, according to the wage registers of 1863, see DMA.Env.625 for Kanunisani 1278 (January/February 1863) and DMA. Env.635, for Ağustos 1279 (August/September 1863). The numbers seem to have fluctuated almost every month, due to discharges or transfers to ships or provincial arsenals. See, for example, a wage register from November/December 1858 (Teşrinisani 1274), when most soldiers, listed as workers, did not work in the Arsenal since they were temporarily assigned to different arsenals or vessels, DMA.Env.587.
for the conscripts employed in the Arsenal. This decision was justified in two ways: On the one hand, the administration argued that conscripts in naval vessels, unlike those employed in shipbuilding, were not paid anything other than their remuneration although their work was harder and their uniforms wore off more quickly compared to their counterparts in the Arsenal. On the other hand, the argument went on, the latter’s employment was already a part of their military service, making an extra payment redundant for the Treasury. In other words, thanks to the option to exploit these conscripts to their uttermost limit, the naval administration did not only survive the budgetary crises that marked the 1850s, but also was able to continue to mechanize the production as well as modernizing the fleet with the increasing role of steamships.

Although the presence of these conscripts did not eliminate the dependence on civilian labor, it likely gave the administration more flexibility in employing civilian workers. In the second half of the 1850s, when the war deficits shattered the budget, the administration dismissed around half of the 2,816 civilian workers from the Arsenal. Only in July 1861, shortly after Sultan Abdulaziz sat on the throne and launched his campaign to build a powerful navy, did the administration decide to return to the same number of workers before these dismissals, by recruiting back 1,419 civilian workers. However, the number to be recruited was decreased to 1,000, due to budgetary problems, based on the argument that the same jobs could still be finished with fewer workers, by “exerting all efforts (ikdamat-i kamilenin sarfiyla)” that is, by labor-squeezing. Although more than 3000 civilian workers were recognized as “permanent

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248 DMA.Env.341/3, 9 Cemaziyülahir 1278 (12 December 1861).
249 BOA.A.MKT.NZD.359/80, 17 Muharrem 1278 (25 July 1861). According to the document, although there were 1,397 civilian workers in the Arsenal by July 1861, the number was not enough for the construction of warships, and thus the Arsenal should return to the number of workers before the dismissal of 1419 workers in the recent years, that is, 2,816 workers.
250 BOA.A.AMD.94/81, 29 Safer 1278 (5 September 1861).
In this new era under the reign of Abdulaziz between 1861-76, when naval transformation was largely dependent on foreign loans and the Sultan’s personal treasury, the employment of conscripts also provided the administration with a critical tool for labor-saving, which played an important role in the ability of the administration to allocate more funds to the technology transfer. A simple comparison of wages between civilian and conscript workers in 1870 would prove this point. In the Ironworks where 284 civilian and conscript workers were employed, the daily wages of civilian workers ranged between 5 and 45 piasters, according to their skill and experience, whereas among the 84 conscripts employed, the range was the same with other conscripts, between 20 \textit{para} and 40 \textit{para} (1 piaster). Such a high rate of labor-saving played a central role in the making of the golden era of technological transformation in the Ottoman navy, as I will analyze in detail in the next chapter.

**Conclusion**

This chapter has discussed the process by which the Arsenal’s labor force was partially militarized. This process took off almost simultaneously with the reorganization efforts in the

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\(^{251}\) See Chapter 5 for more details.  
\(^{252}\) DMA.Env.1900/17.
Ottoman military, in line with parallel efforts in the larger state structure. After a chaotic decade that witnessed the secession of Greece, the annihilation of the navy and the abolition of a centuries-old standing army, the Ottoman government initiated a large-scale reform program in its military organization. The core of this program was popular conscription, an obligation that was initially levied on the Muslim population, before it was later extended to the non-Muslims in the navy as well. Modern conscription did not only enable the Ottoman rulers to establish a new standing army in place of the Janissaries. The hope was that it would also enable them to form a navy of all-Muslim soldiers, following the increasing distrust toward non-Muslims who had thus far formed a significant part of naval laborers. In the 1830s, this availability of conscripts pushed the Ottoman rulers to extend military employment to the entire labor force, including naval craftsmen and arsenal workers. However, the increasing shortage of naval soldiers due to wars and rebellions, as well as the limited pool of Muslim conscripts in coastal districts forced the government to conscript non-Muslims whenever needed in order to address the shortage of military labor, both in the vessels and in the Arsenal.

On the eve of the Tanzimat Edict of 1839, the naval administration, led by the undersecretary Safveti Musa Efendi, drew up a reform plan in order to gradually increase and militarize the labor force in the Arsenal by forming five “labor battalions”, to be manned by around 5,000 soldier-workers. As the plan was immediately put into practice, it gained a new impetus especially after the conscription reforms of 1843-46, by means of efforts to systematize both Muslim and non-Muslim conscription, which aimed to provide military labor for the Arsenal on a regular basis. However, these attempts turned out to be a failure in the face of persistent waves of desertion and resistance by both Muslims and non-Muslims. The Reform Edict of 1856, following the Crimean War, confirmed this failure by practically excluding the non-Muslims from the conscription system, thus making the Arsenal entirely dependent on Muslim
conscription. As a result, the ongoing discontent of Muslims with naval conscription, the decreasing length of military service, and the increasing demand for skilled labor especially throughout the 1860s forced the Ottoman administration to accept its dependence on civilian labor, which culminated with their being classified as “permanent workers” by the end of the 1860s.

Although the initial plan could not survive in the face of these challenges, modern conscription still enabled the Ottoman government to transform and expand industrial production in the Arsenal, as conscription not only enabled the Ottoman state elites to fund this process by labor-saving, but especially in the 1860s, it also provided them with a space to introduce industrial skills and discipline to the Ottoman subjects. Thus, the attempts to diminish this dependence continued in the following decades, to no avail. In 1901, the Naval Council sent a warning to the sub-commissions in the Imperial Arsenal, which complained about the Arsenal’s insistence in employing civilian workers in spite of the Council’s repeated requests for the employment of soldiers. The reason for this insistence, according to the document, was the widespread belief among officials in charge of recruitment, that soldiers were not as skilled and experienced as their civilian counterparts.253 At first glance, the case was simply an example of ordinary, at times contentious, negotiations between lower and higher ranked bureaucrats in the naval administration. However, the warning of the Naval Council was actually an expression of the Ottoman state’s resentment with the outcome of an at least seventy-year-old struggle to create a completely militarized labor force in the Arsenal.

253 DMA.ŞUB.575A/34A, 11 Cemaziyülevvel 1319 (26 August 1901).
CHAPTER 3

INDUSTRIAL TRANSFORMATION, TRANS-IMPERIAL CONNECTIONS, AND BRITISH WORKERS IN THE IMPERIAL ARSENAL

In 1868, James Herdman, aka “Haddad (lit. blacksmith) Bey,” wrote a long letter to the Ottoman Minister of Marine, asking for a pension to leave his post and go back home. He had been serving 29 years in the Imperial Arsenal “without leave,” 26 years of which he acted as the Chief Engineer of the Arsenal, as a colonel (miralay). “But time changes everything and has changed my circumstances also,” he said in the letter, referring to his replacement with another Englishman and his recent relegation to the post of second engineer, since the Ottoman administration found his skills outmoded and incompatible with the requirements of the new era of ironclads. Referring to his accomplishments during his long tenure, he was aware that these “may be considered as nothing and not worthy of being taken notice of” at the present age of stunning developments in shipbuilding. “Be that as it may, these matters are everything to me” he continued, underlining the dramatic transformation of the Arsenal and taking pride in the fact that it took place under his own supervision. In fact, in appreciation of his role in this process, the Ottoman government agreed to grant him 1,000 pounds to be used in his retirement, although foreign workers were not granted retirement benefits in principle.\(^\text{254}\)

This chapter will focus on the era of industrial transformation in the Imperial Arsenal, a considerable part of which took place under the supervision of Herdman, throughout the mid-nineteenth century. I will discuss the impact of the Industrial Revolution, the increasing connections between the Ottoman Empire and Britain, and the impact of the migration of British workers on the transformation of both the production process and class relations in the Imperial

\(^\text{254}\) BOA.İ.DH.582/40510-1, 8 February 1868.
Arsenal in this period. I argue that the trans-imperial connections with Britain and British workers’ relations to the Ottoman state and to Ottoman workers were critical to the development of capitalist class relations and class formation in the Ottoman Empire.

Recently, labor historians have started to pay more attention to the movement of people, capital and commodities across political boundaries in their analyses of working-class experiences.\textsuperscript{255} Ottoman historians who mentioned or discussed the existence of foreign workers in industrial establishments mostly limited their focus to the privileged statuses and higher wages of foreign workers vis-à-vis the rest, rather than their experiences and their relationships. This was not simply due to the cultural, religious or linguistic differences between the foreigners and the locals. In the case of European skilled labor, their higher skills and wages have led historians to see them as “experts” rather than as workers.\textsuperscript{256} Instead of treating these workers merely as a separate and distinct category within the labor force, I will rather underline how their experiences and their relations with the Ottoman state were central to the making of Ottoman modernity in this period.

**Transformation of Global Shipbuilding in the Early Nineteenth Century**

As discussed in Chapter 1, technological transformation in shipbuilding, especially in the navies, tended to be gradual, since dramatic changes in shipbuilding required large-scale investments to introduce new systems of provision, production, and labor compatible with these technologies, a

\textsuperscript{255} See, for example, the articles in Fink, *Workers across the Americas: The Transnational Turn in Labor History*.

challenging task which partly explains the dominance of central states in this sector. In addition, naval-military authorities were also reluctant to switch to new types of vessels that were not tested in wars, as opposed to the existing ones that were employed for decades, or even centuries in the case of Ottoman galleys. Following this pattern, although steamships were introduced in the early nineteenth century, sailing vessels in major navies disappeared only through the second half of the century.

The Watt engine revolutionized manufacture in the last quarter of the eighteenth century, and the technology was diffused to the rest of the western world and part of their colonies within the next few decades. By 1825, the Ottomans` major rivals in Europe, i.e. Britain, France, and Russia, had already started to produce the Watt engines in their local factories. The introduction of these engines started to transform the shipbuilding industries in this period as well, from pumping and drainage to wood and metal works. In Britain, despite some resistance from workers and conservative officers, Samuel Bentham introduced steam-powered machinery to the production process in Portsmouth, shortly after he was appointed as the inspector general of the Naval Works in 1795. His main goal was “to increase efficiency and save money by reorganizing the workers and by using labor-saving machinery.” Indeed, the block-making machinery installed in Portsmouth during this period, for example, allowed 10 men to do what 110 men had done in the past, with the same or even higher quality. By 1828, the production in the naval arsenal at Portsmouth was largely mechanized, turning it into one of the showcases of

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257 Zorlu, Innovation and Empire in Turkey: Sultan Selim III and the Modernisation of the Ottoman Navy, 3-4.
260 Ibid., 206-07.
British industrialization, where “the efforts of human industry appear too weak and impotent to achieve the vast and important works here displayed,” in the words of a contemporary guide book.261

Although steam technology started to dominate the shipbuilding industries in the first decades of the century, the steamship itself had to wait longer to conquer the navies, remaining largely limited to merchant shipping until the 1840s. The above-mentioned gradual characteristic of technological transformation in naval warfare had a practical justification in this case. In this initial period, steam engines propelled paddle wheels located on the sides or the rear. These large wheels not only made maneuvers in battle difficult for the vessels. They also occupied a considerable amount of space at the expense of guns on a warship. Thus, it was only after screw vessels, with steam engines propelling the screws located at the bottom of the ship, were introduced in the late 1830s, that the technology became fully operational for naval warfare, and navies started to invest heavily in steam vessels. Both in Britain and France, screw-propelled steamships were introduced in the 1840s.262 Nevertheless, sailing vessels disappeared gradually, as they continued to occupy an important place in the navies until the late nineteenth century.

By the time of the Battle of Navarino in 1827, the Ottomans still had not adopted the new technology, unlike their major rivals in this battle, Britain, France, and Russia.263 It seems that there was more than one explanation for the absence of steam-power in Ottoman shipbuilding.

261 Quoted in Henry Slight and Julian Slight, Chronicles of Portsmouth (London: Relfe, 1828), 133. See pp.133-161 for a comprehensive description of the mills and workshops in this arsenal.
263 According to Tann and Breckin, the Watt engine had not yet been transferred to the Ottoman Empire by 1825, see Tann and Breckin, "The International Diffusion of the Watt Engine, 1775-1825," 560. On the transition to steam power in Ottoman manufacture, which largely started in the 1830s, see Donald Quataert, Manufacturing and Technology Transfer in the Ottoman Empire, 1800-1914 (Istanbul;Strasbourg: ISIS Press, 1992).
The most obvious one was the lack of resources to transfer and maintain this technology in the
early nineteenth century. The purchase of steam-powered machinery required considerable
resources not only to buy the machinery from Britain, but also to transfer the
engineers/mechanics who would install and run these machines and to import raw materials
(particularly coal and iron) that were only available in limited quantities in Ottoman lands.
Indeed, these concerns most likely played an important role in the failure to transfer the
technology to the Ottoman arsenal as early as 1805, when the Ottomans planned to introduce
steam technology to the newly built drydock in order to pump out water. The plan failed due to
the cost of importing the machinery in this period, and thus animal power, particularly mules,
were used for this task until the mid-nineteenth century.\textsuperscript{264}

As important as the lack of resources might have been, the lack of motives to switch to
the new technology in this period proved equally important. The availability of cheap and unpaid
labor explains why the state was unwilling to bear the costs of a technological transformation.
This was most likely the case especially when naval reforms came largely to a halt throughout the
two decades following the deposition of Selim III. Thus, it was only after the abolition of the
Janissaries in 1826 that the Ottoman state elites could concentrate on naval reforms, beginning
with the Naval Code of 1827, as discussed in Chapter 2. The heavy defeat at the Battle of
Navarino the same year, however, would be a major blow in this regard. According to one
contemporary observer, in the wake of the disaster in 1828, the state of the Arsenal was
‘confused and slovenly…the smiths’ forges were enclosed in long but paltry wooden
sheds…coils of ropes were rotting among copper sheathings, and all the numerous arts and
mysteries of a dock-yard were jumbled together in the most unseemly and inconvenient

\textsuperscript{264} Zorlu, \textit{Innovation and Empire in Turkey: Sultan Selim III and the Modernisation of the Ottoman Navy},
42-46.
manner.” The labor force operating in this atmosphere largely consisted of coerced workers, whereas the remaining wage workers suffered long delays in payment, as confirmed by Macfarlane in 1828.

Steam-Power and Technological Transformation in the Imperial Arsenal

Just as the naval reforms of the late eighteenth century had to wait for the repeated defeats against the Russian navy, the introduction of the steam engine into the production process had to wait for another major disaster, which forced the Ottoman government to entirely reorganize the navy and the naval production process. After the disaster in the Battle of Navarino in 1827, it became clear to the Ottoman state elites that possessing a competitive navy was vital to surviving a rising tide of European and Russian aggression in the nineteenth century. In regard to shipbuilding, this meant that the Ottomans had to adapt to the changing production techniques and technologies with the help of skilled labor. This was not the first time the Ottoman state elites would rely on foreign skilled labor. Only about three decades before, the major reforms under Selim III had largely been undertaken with the work of engineers brought from Europe, particularly France and Sweden.

In the post-Navarino context when hostilities with Britain and France continued over the problem of Greece, state elites turned towards the United States for the construction of the new navy. US officials had already been seeking ways to expand the running of American merchant ships on the Ottoman seas, including the Bosphorus. As a result, a trade treaty was signed

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266 Ibid.
between the two countries in 1830. Initially, the Ottoman government was planning to have the vessels built in American dockyards, considering the cheap sources of raw materials (particularly timber), as well as the skilled labor and modern, mechanized shipyards in the US. For this goal, a secret article, reflecting American concerns with not undermining diplomatic relations with Britain, was attached to the trade agreement, ensuring the American government’s support for the construction of Ottoman battleships in the US. Although the American Senate rejected this article, the Americans were still able to secure the treaty, partly with the mediation of an American naval engineer, Henry Eckford, who sailed to Constantinople with his newly constructed ship, “United States”, along with fellow engineers and 15 carpenters.

Eckford’s goal was to sell his corvette following an exhibition of the ship, but after he was asked to stay to build ships for the Ottoman navy, he presented a detailed proposal for his construction plans to Sultan Mahmud II. The proposal promised to revolutionize Ottoman shipbuilding within a short span of three years, by constructing new ships that would be equal or superior to those built by other navies. But, perhaps more importantly, Eckford also promised to introduce the new designs and techniques to young Ottoman architects, by taking some of them to the US for training and language learning. Upon the acceptance of his proposal, Eckford started to implement his plans, with the help of around 500 local workers in addition to his fellow American engineers and carpenters. Eckford’s untimely death in 1832 did not stop the American-led reconstruction efforts in the Ottoman navy. His fellow engineer Foster Rhodes took over as

269 Ibid., 63-71.
270 Ibid.
his successor, and with his chief carpenter Charles Ross, continued to supervise the construction of battle ships until his resignation in 1840.  

It was within this context that steam power was introduced to the Imperial Arsenal, in the form of both steam-powered factories and steamships. It seems most likely that aside from the commitment of the ruling elite to build a competitive navy, the presence of Henry Eckford played an important role in this transition, as he also referred to the benefits of steamships and his own experience of constructing them in the US in his proposal. In addition, in spite of the tensions between Britain and the Porte, due to the former’s support for the Greek War of Independence, the Ottoman government decided to buy three machines from Britain and to construct buildings to house these machines in 1831-32. It also contracted a British engineer, Frederick Taylor, to supervise these mechanized worksites, consisting of a sawmill, a foundry, and a copper-processing rolling mill (Haddehane). After the first one of these, the Haddehane, started to operate in 1834, the government also launched the construction of an iron-processing mill and a boiler shop, with the machinery again being imported from Britain. Thus, in parallel to the mechanization of shipbuilding, the Arsenal started to build steamships in this period, the first being completed in 1837, followed by twelve more steamships up to the beginning of the Crimean War. Machines and boilers for these steamships were again bought from Britain.

Thus, despite deteriorating relations with Britain during and after the Greek War of Independence, the Ottomans had no option but to follow other countries that relied on British

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271 Ibid., 81-84.
272 Düzcü, "Yelkenliden Buharlıya Geçişte Osmanlı Denizciliği (1825-1855)," 161.
274 Düzcü, "Yelkenliden Buharlıya Geçişte Osmanlı Denizciliği (1825-1855)," 179.
technology and labor in the initial stages of industrialization. However, efforts to build factories and steamships remained limited in this initial period, due to the dependency of the Empire on foreigners for the provision of technology, raw materials, and labor, all of which required substantial government funding. The initial decade of mechanization in the Imperial Arsenal was the most challenging one in this regard. Aside from the economic burden of reconstructing a land army after the abolition of the Janissaries in 1826 and a navy after its destruction in 1827, the Ottoman government also launched a series of political reforms aimed at centralization, marked by the expansion of bureaucratic institutions, all of which came at a cost. Besides, wars with Russia, the Greek War of Independence, and the rebellion of the Egyptian governor Mehmed Ali Pasha all led to territorial losses and war indemnities disastrous to the Ottoman economy. In short, at a time when the survival of the Empire was at stake, there was little money to invest in mechanization.

**Ottoman-British Connections in the Mid-Nineteenth Century**

In this context, the Ottoman and British state elites started to establish closer contacts, building an alliance based on their mutual interest in containing Russian and Egyptian aggression, contacts that eventually shaped the transformation of the Ottoman navy and the Imperial Arsenal. Especially with the appointment of Mustafa Reşid Pasha, a former ambassador to London, as

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276 According to Düzcü, particularly from 1840s onwards, the Arsenal increasingly became dependent on imported iron, bought through merchants in the capital. See Düzcü, "Yelkenliden Buharlıya Geçişte Osmanlı Denizciliği (1825-1855)," 286-96. For a recent analysis of the Ottoman failures in iron production that resulted in this dependency, see Mehmet Yıldırım, "Osmanlı Demir Çelik Sanayii'nde Atölyeden Fabrikaya Geçiş (1830-1870)" (PhD diss., Istanbul University, 2015). Similarly, the state efforts to extract coal to feed the state industries in this period largely failed, due mostly to the labor problems in these mines. See Quataert, *Miners and the State in the Ottoman Empire: The Zonguldak Coalfield, 1822-1920.*
Foreign Minister in 1837, the Ottoman government started to take powerful steps to build closer ties with Britain. Trade concessions given to the British with the Baltalimani Treaty of 1838 were accompanied by reforms, marked by the Tanzimat Edict of 1839, that symbolized the government`s commitment to reforms along European lines. The same year, three British naval officers were brought to serve in the Ottoman navy. Among them was Admiral Baldwin Wake-Walker, aka Yaver Pasha, who not only commanded the Ottoman naval campaign against the Egyptians; as the naval advisor to the Sultan until 1845, he also supervised the reform efforts in the navy, particularly concerning the increasing role of steamships and the restructuring of the Naval School. Walker`s role in Ottoman naval modernization continued after his return to England, where he was appointed Surveyor of the Navy in 1848. During his tenure until 1861, he supervised the construction of battleships and the British navy`s transition to both screw and ironclad technologies, due to which he became known as the father of Britain`s (wooden and ironclad) screw battle fleet. In this period, he also assisted and advised Ottoman officials with the purchase of machinery for Ottoman steamships.

It was thus not a coincidence that in exactly this period, the control over shipbuilding in the Imperial Arsenal was transferred from American to British engineers. Rhodes resigned in 1840, and following a brief tenure of another American engineer, British engineers and British-trained Ottoman officers started to control shipbuilding in the Arsenal. The resignation of Americans was largely related to the death of Mahmud II, who had given his sweeping support to these Americans against bureaucratic intrigues. But these intrigues aside, this was not
unexpected, if one considers the increasing connections between the British and the Ottoman
governments during their naval alliance against Egypt. These connections started to shape the
modernization efforts in the navy through not only technological transfer, but also the increasing
presence of British officers in the Ottoman navy and, as we will see, the increasing number of
Ottoman students and skilled workers who were sent to training in Britain. It was during the
tenure of Admiral Walker in the Ottoman navy that James Herdman was appointed chief-
engineer of the Imperial Arsenal, to supervise the mechanization process here. Herdman was
accompanied by Salih Bey, a Naval School graduate who, following his training on machinery in
Britain, returned in 1840 and was appointed manager of factories in the Arsenal.²⁸¹

Modern ironworks and other factories that would allow the Ottomans to produce and
repair equipment would be established in the late 1840s, becoming fully operational only after the
Crimean War. The reason was again the necessity of buying the machinery from Britain as well
as the time it took to construct factory buildings, which sometimes delayed projects considerably.
For example, in the late 1840s, when the Arsenal decided to build a steam hammer shop (çekiç
fabrikası), the entire set of tools and machinery was ordered from a British machinery factory,
which handed them over in 1848. However, the buildings for this machinery could be finished
only in 1852, mostly due to problems with the construction process.²⁸²

The increasing presence and influence of British naval advisors and engineers, as well as
the increasing admission of steamships into the navies following the introduction of screw-
propellers, led to the increasing commitment of the Ottoman state elites to technological
transformation in the navy in the 1840s. Especially in the second half of the decade, the Ottoman

²⁸¹ Bal, "XIX. Yüzyılda Osmanlı Bahriyesi'nde Gemi İnşa Teknolojisinde Değişim: Buharlı Gemiler Dönemi," 194-95.
²⁸² Ibid., 141-42.
authorities seemed quite clear about the necessity to take decisive steps toward mechanization in the Arsenal and the navy. The increase in the number of steamships within the naval fleet was accompanied by increasing attempts to introduce steam power into the production process. In addition to the steam-hammers for the Ironworks, more machinery started to be introduced to the production of pulley-blocks, to carpentry, and to the drydocks in this period.\textsuperscript{283} In fact, when Charles Macfarlane, who had observed the “slovenly” state of the Arsenal in 1828, returned to the capital in the late 1840s, he confirmed the recent changes in the Arsenal as a transition from “chaotic disorder” to “tolerable order,” though giving the entire credit to the British and the Americans who had been employed in the previous two decades.\textsuperscript{284}

This expansion of machinery in the production process overlapped with a parallel transformation of shipbuilding in world navies in the 1840s. Iron ships, which were in use for commercial purposes since the 1820s, started to replace their wooden counterparts in the 1840s, a process dramatically accelerated after the Crimean War, when the weakness of wooden ships against powerful shell guns left no doubt in the minds of naval elites regarding the inevitability of this transformation.\textsuperscript{285} This increasing demand for iron was particularly triggered by the technological transformation in ironworks in this decade, marked by the invention of steam hammers, which dramatically expanded the application of iron in different sectors, particularly in shipbuilding. In parallel, mostly owing to the railway boom, the cost of iron became cheaper and the number of skilled metal workers was growing fast in this period. As a result, by the early

\begin{footnotes}
\item[283] Ibid., 148.
\item[284] Charles MacFarlane, \textit{Turkey and Its Destiny: The Result of Journeys Made in 1847 and 1848 to Examine into the State of That Country}, 338.
\end{footnotes}
1850s, it had become clear that producing iron ships was not only indispensable, but also possible and affordable for the navies.\textsuperscript{286}

The Imperial Arsenal quickly adopted this technology, and in 1852, a modern ironworks was established, consisting of two steam hammers and five rolling mills, all driven by steam.\textsuperscript{287} The factory, seen as proof of industrial progress and the reform efforts of the state elites, was opened by Sultan Abdulmecid himself. It was to forge large pieces of iron for machines, such as shafts and cranks, as well as other pieces necessary for iron shipbuilding. It promised to bring not only precision and perfection to production, but also efficiency in time and labor, forging larger quantities of iron with far fewer workers.\textsuperscript{288} The machinery was again brought from Britain, and the factory was designed by Frederick Taylor, the British mechanic-engineer who had been hired almost twenty years earlier to install the first machines in the Arsenal and had continued to serve the Ottoman government since then in mechanization efforts in different state factories, including the Imperial Gun Factory and the Imperial Mint, in addition to the Arsenal.\textsuperscript{289}

In spite of these achievements, however, mechanization of production remained limited before the Crimean War. The main reason for this was the fact that mechanization, within the context of capitalist production, was marked by a dilemma. Whereas mechanization served to produce surplus capital by reducing the power of manual labor, it also required the availability of capital to invest in machinery, raw materials, and skilled labor. In fact, Ottoman authorities were quite conscious of how machinery served to decrease the role and power of manual wage labor in the production process, and thus how the threat of technological unemployment was a “remedy”

\textsuperscript{286} Lambert, "Iron Hulls and Armour Plate," 48.
\textsuperscript{287} "Intérieur," \textit{Journal de Constantinople}, 29 May 1852.
\textsuperscript{288} Ibid.
\textsuperscript{289} Ibid.
against the persistent complaints of civilian wage workers about the low wages in the Arsenal.\textsuperscript{290} However, adapting to the competitive pressures to expand and update the mechanized production on a regular basis was a challenging task. This required the availability of capital, either by means of lowering the existing cost of labor or by borrowing. The budgetary conditions that halted the first efforts at mechanization in 1805 did not improve enough to solve this problem in the mid-nineteenth century. In the 1840s, when steam power became indispensable in order to remain competitive among naval powers, the Ottomans continued to suffer budget deficits, which could only be covered by borrowing from local bankers.\textsuperscript{291} These loans, however, were of little help. At a time when investments in the navy, both in the form of steamships and mechanized factories in the Arsenal, started to increase exponentially, a budgetary crisis struck the state finances in 1851, due to poor harvests and military spending against the Bosnian uprising.\textsuperscript{292}

Amid these problems, the naval administration had two options to address the cost of technology transfer for industrial mechanization. The first option was to lower the cost of manual wage labor in the production process, so that the cash saved could be channeled to buy machinery, steamships, and skilled labor from Britain. The program to militarize labor that was launched in the late 1830s was expected to solve this problem. Indeed, in 1850, the Sultan decreed the discharge of all civilian workers and the gradual increase of labor battalions in the Imperial Arsenal to replace them.\textsuperscript{293} However, resistance against naval conscription, especially

\textsuperscript{290}For examples justifying mechanization by labor-saving, see DMA.ŞUB.51/139a, 11 Şevval 1284 (5 February 1868) and BOA.İ.DH.695/48605, 6 Zilhicce 1291 (14 January 1875).
\textsuperscript{292} Ibid., 21. According to a British report the same year, the entire budget of the navy equaled only around five times the annual cost of coal. See Candan Badem, \textit{The Ottoman Crimean War (1853-1856)} (Leiden: Brill, 2010), 110.
\textsuperscript{293} BOA.A.AMD.18/2.
by non-Muslims, was followed by the eruption of the Crimean War, hindering these efforts to completely militarize the labor force in the Arsenal. During the war, demand for the production and maintenance of ships increased to a considerable level, as the Ottomans now not only had to mobilize for their own navies, but also for the maintenance of the Allied navies in the Arsenal. This urgent demand for labor could only be answered through civilian workers, not only because the navy failed in its attempts to militarize the entire labor force, but also because some of the existing labor conscripts had to be sent on expeditions rather than being employed in the Arsenal. The increasing cost of civilian wage labor, with the additional costs of the war, eventually delayed some of the mechanization projects in the Arsenal for a while. 294

The other available option was generating capital by means of foreign loans from Europe. Throughout the 1840s, European business and state elites were bringing up this option as a solution to budgetary problems. 295 However, until the crisis of 1851, the Ottoman bureaucracy and Sultan Abdulmecid resisted this option, due to the fear that it would bring the Empire under complete European financial control. After an aborted agreement in 1852, the first foreign loans were made in 1854 and 1855, which covered almost half of the Ottoman war expenses during the Crimean War. 296 Following the Crimean War, the Ottoman government continued to borrow from Europe, which helped the Ottomans stabilize their economy. Thanks to the capital provided through these loans, the Arsenal could finish the projects launched in the previous years, and continued to buy steamships for the navy, even in the dire circumstances of the post-war years, marked by a global financial crisis and the internal unrest in the Empire. 297 As a result, the

295 Şevket Pamuk, Osmanlı-Türkiye İktisadi Tarihi, 1500-1914 (İstanbul: İletişim, 2005), 230.
296 Badem, The Ottoman Crimean War (1853-1856), 294-98.
transformation process in the navy not only survived the budgetary crises of the 1850s, it also gained a new momentum afterwards.

The Crimean War of 1853-1856 marked a turning point in naval history. It firmly established the significance of industrialization in warfare, as steamships, especially screw vessels, and armored floating batteries proved decisive in the British-French victory over Russia.\textsuperscript{298} The Ottomans, who already had knowledge about screw technology and had launched their first efforts to add screw vessels to the fleet a short while before the war, had the chance to witness their speed and efficiency during the war. In this period, the naval administration substantially increased its efforts to convert sailing vessels to steamships by mounting screws on their bottoms, starting with their most powerful galleons.\textsuperscript{299} These efforts continued after the war, as the Ottomans now acknowledged that steam power was a precondition for a powerful navy, prioritizing them over sailing ships.

This priority meant more investment not only in steamships, but in the mechanized facilities to produce the tools and equipment for the production and maintenance of these ships. Considering the financial and technical challenges of mechanization that marked the Ottoman efforts in the previous decade, the Crimean War came with its own opportunities in this regard. Aside from several British and French skilled workers who worked in the Ottoman arsenals for the maintenance of the Allied vessels, the British opened their own engine factory across the Arsenal in Istanbul, employing British subjects in it. After the war, the factory was transferred to the Arsenal to compensate the use of its facilities and its workers in the maintenance of Allied ships during the war.\textsuperscript{300}

\textsuperscript{298} Sondhaus, \textit{Naval Warfare, 1815-1914}, 64.
\textsuperscript{299} Düzcü, "Yelkenliden Buharlıya Geçiște Osmanlı Denizciliği (1825-1855)," 385-86.
\textsuperscript{300} Bal, "XIX. Yüzyılda Osmanlı Bahriyesi'nde Gemi İnşaat Teknolojisinde Değişim: Buharlı Gemiler Dönemi," 156-57.
Efforts to modernize the navy and naval production substantially intensified under Sultan Abdulaziz, who came to power in 1861 and was known for his passion for possessing a powerful navy. For this goal, the naval budget was exponentially increased and two naval officers were sent to Britain and France to examine the recent developments in their arsenals. The new sultan hoped that his projects in the navy would also help industrialization at home. His insistence on the construction of these vessels at home, however, led to the protests of both Ottoman and British officials, who complained of the immense costs of local production when compared to the option to purchase these vessels. In the following decade, despite the construction of several vessels in the Imperial Arsenal and other Ottoman arsenals, the construction capacity of these arsenals did not satisfy the appetite of the Sultan, as he continued to try to order ships from Europe. Although the mechanical parts of these vessels would mostly be installed in Britain, the government also intensified the efforts to mechanize the production process, trying to decrease this dependency as much as possible. As a result, the Abdulaziz era witnessed a dramatic transformation of the productive capacity of the Arsenal.

Abdulaziz’s rule also overlapped with the rise of ironclads, which were increasingly adopted by the major navies after their success in battle during the American Civil War (1861-1865). Following the successful performance of ironclads during the American Civil War, the Ottoman government ordered the construction of four ironclad frigates from Britain in 1864, all finished and in service by 1868. These were to be followed by other orders from Britain and

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301 “Turkey,” Jackson’s Oxford Journal, 20 July 1861. According to Shaw’s data, the naval budget was increased by around 25 percent in the financial year of 1862-63, compared to 1860-61. Stanford J. Shaw, "Ottoman Expenditures and Budgets in the Late Nineteenth and Early Twentieth Centuries," International Journal of Middle East Studies 9, no. 3 (1978): 376.
303 TNA.FO.78/2177, 25 September 1871.
304 Sondhaus, Naval Warfare, 1815-1914, 77.
France, as well as one from Austria, throughout the next decade.\(^{305}\) Meanwhile, the government launched the arrangements for the construction of the first ironclad in the Imperial Arsenal as well.\(^{306}\) As a result, in 1869, the Imperial Arsenal launched the construction of an ironclad corvette, initially with around 50 British workers, most of whom were brought recently for this purpose, as well as around 100 local workers.\(^{307}\) A direct consequence of this expansion was the increasing pressure on the budget, as such huge expenditures could only be made thanks to the now never-ending loans from Europe.\(^{308}\) In addition to such construction projects, the dramatic expansion of the Ottoman fleet required an increasing number of skilled workers, who would be employed in the maintenance of such a large fleet.

**British Workers to the Imperial Arsenal**

As the Empire lacked the required number of skilled workers, particularly mechanics and engineers, labor transfer inevitably accompanied technology transfer. Starting in the 1830s, the number of British workers in the Arsenal gradually increased in parallel to the number of steamships and machines brought from Britain. In the next decade, as naval elites` commitment to industrialization increased, so did the prospect of a higher number of foreign workers due to the absence of skilled local labor. This prospect of increasing dependence on foreign-civilian workers, however, threatened to undermine not only the militarization of the labor force in this period, but also the budgetary balances, given the high cost of recruiting such workers. This was

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\(^{305}\) Emir Yener, "Iron Ships and Iron Men: Naval Modernization in the Ottoman Empire, Russia, China and Japan from a Comparative Perspective 1830-1905" (MA Thesis, Bogazici University, 2009), 102-03.

\(^{306}\) During his visit to London in 1867, the Sultan also ordered the chief architect (başmimar) to accompany him, with the model and drawings of the ironclad, apparently to consult with the British on this matter. See The *Levant Herald*, 9 July 1867, p.1.

\(^{307}\) “Notes from Turkey,” *Pall Mall Gazette*, 9 October 1869.

\(^{308}\) “Turkey and Egypt,” *Pall Mall Gazette*, 24 August 1869.
one side of the coin, as foreign workers also caused political problems for state elites. These problems were not limited to increasing foreign intervention by European powers in the affairs of the state with the pretext of defending the interests of their subjects. In July 1848, during the heydays of revolutionary uprisings in Europe, state officials reported on the complaints of European workers employed in the Zeytinburnu Ironworks in Istanbul, whose wages had been in arrears for three months, and discussed the possibility of radical actions by these workers in the factory, underlining their “strange manners and circumstances.” Indeed, such concerns, in addition to financial problems, were likely to have convinced state elites to slow down their mechanization efforts, until local workers would be systematically trained to replace their foreign counterparts.

Training local workers was not an easy task, however. An immediate solution was the employment of the apprenticeship system, by merely assigning local apprentices to foreign workers to equip the former with mechanical skills. This was not an unknown practice, and indeed, Ottoman authorities had resorted to this option for raising local mechanics since the first purchase of a steamship in 1828, when the Sultan ordered the arrangements be made to train local subjects with skills not only to run but also to manufacture steamships. However, this task itself required training engineer-mechanics with both theoretical and practical training, for which the Ottomans were not prepared. Not only did the curriculum and education in the Naval School need reform and adaptation to this task (which took place under the supervision of Admiral Walker), but the Arsenal also lacked the facilities for the practical training of these students.

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309 BOA.A.MKT.137/38, 2 Şaban 1264 (4 July 1848).
310 Bal, "XIX. Yüzyılda Osmanlı Bahriyesi'nde Gemi İnşa Teknolojisinde Değişim: Buharlı Gemiler Dönemi," 200-01.
311 See Chapter 4.
The advancing relations between the Ottomans and the British in the 1840s helped the former to eliminate the problem of scarce resources. Ottoman officials paid frequent visits to British dockyards to gain knowledge about the recent techniques and technologies in shipbuilding; at the same time, they also started sending students and workers there for training. Although some students had been sent individually for such training earlier, the first large group of students, consisting of 18 students, were sent in 1846. They were initially sent for five years, but some of them stayed longer to complete their training. During this time, after an initial period of theoretical classes, they were assigned to steamships, factories, or dockyards for practical training. Starting in 1851, they were called back to the Arsenal, as the number of factories and steamships started to increase. Students and workers continued to be sent to Britain in the following years. They were trained in various branches of shipbuilding, from carpentry and caulking to screw technologies and engineering.

Until the Crimean War, the number of foreign mechanics in the factories remained relatively in line with the sporadic character of mechanization and steamships in the navy. In 1848, for example, there was a total of 24 foreign mechanics in the factories and steamships. However, the numbers were never stable, as most of the time these workers were contracted for short periods, usually one to three years, and not all of them stayed longer than that. This led to frequent turnover. Although in at least a couple of cases the government discharged the workers due to disciplinary issues, in most cases they left due to low wages and the irregularity of their

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312 Bal, "XIX. Yüzyılda Osmanlı Bahriyesi'nde Gemi İnşa Teknolojisinde Değişim: Buharlı Gemiler Dönemi," 206; Düzcü, "Yelkenliden Buharlıya Geçişte Osmanlı Denizciliği (1825-1855)," 264.
313 For examples, see BOA. HR.SFR.3.27/30, 2 July 1856, and BOA.HR.SFR.3.22/23, 23 July 1855. Also see Bal, "XIX. Yüzyılda Osmanlı Bahriyesi'nde Gemi İnşa Teknolojisinde Değişim: Buharlı Gemiler Dönemi," 206-13.
314 See DMA.Env.150 for Şubat 1263 (February/March 1848).
payments. In the absence of local mechanics, such exits forced the government to find and contract new workers from British dockyards, mostly through the Ottoman embassy in London.

A high turnover rate was never preferable to the Ottoman authorities, however, especially when the navy was in urgent need for such mechanics both in the Arsenal and on steamships. This was not unknown to the mechanics, as they immediately acted to improve their conditions with the start of the Crimean War. In other words, the desperate need for skilled labor gave foreign skilled workers leverage to improve their wages and working conditions. In October 1853, 15 British mechanics, serving both on vessels and in factories, wrote a petition, requesting the payment of rations throughout the war, as well as insurance that they would be paid a certain sum for life in case they were wounded, or to their wives and children in case of their death during the war. In response to this request, the naval authorities first investigated, through the manager Salih Pasha, whether these workers could be replaced by Ottoman officers, but this was not possible. The government had to accept workers` requests, with the condition that rations would be limited to those who were sent on campaigns, excluding those working in the factories. Later, these terms would be extended to the mechanics of commercial vessels owned by the state, which were mobilized for the war efforts.

Workers` demands were not limited to war-related matters, however. In 1854, when seven foreign workers requested an increase in their wages, the government had to accept them due to the lack of options during the war. Some of these workers had been recruited only about a year before, such as a Hungarian, a French, a Swedish and a British mechanic. The other three mechanics had been employed for a longer period. James Blair, in his seventh year at the Arsenal,

See DMA.Env.341/33,39, and 40 for exemplary records of these discharges between 1849-1852. 
BOA.İ.MVL.290/11638, 26 Safer 1270 (28 November 1853) and DMA.ŞUB.16/86a, 15 Rebiülevvel 1270 (15 January 1854).
believed that his commitment and hard work had earned him a promotion to the rank of second-class engineer, with a pay increase. James Carlisle, who had been working for almost eight years, five of them without a contract, gave a strongly-worded notice, warning that if his pay was not advanced, a promise which had not been kept for the past four years, he would consider himself “duly at liberty.” Samuel Brown, working as the chief boiler-maker of the Boiler Shop for six years, although his contract had expired three years earlier, requested the increase promised at the time of his recruitment. Upon receiving their petitions, the Naval Council initially tried to convince the workers to continue with their present wages given the existing challenges of the Treasury during the war. They refused, “firmly” stating that they would leave in case their requests were not met. The Naval Council had to give in, since there were “no mechanics to replace them in Istanbul” and recruiting new workers from London would be more expensive.\footnote{BOA.İ.MVL.321/13638, 28 Rebiülevvel 1271 (19 December 1854) and BOA.A.MKT.MVL.70/29, 14 Rebiülahir 1271 (4 January 1855).}

The end of the Crimean War in 1856 did not bring an end to the financial stress of the Ottoman government. In effect, through the end of the decade, government finances were in such a state that in many departments, particularly the army and the navy, employees and soldiers endured long arrears, their wages remaining unpaid for months. Although this context slowed down the mechanization efforts and the purchase of new vessels, British workers continued to arrive at the Arsenal, along with new machines. However, during a period of post-war economic distress that overlapped with the global depression in 1857-58, forcing the Ottoman government to discharge large numbers of local civilian workers to cut down the labor costs in the Arsenal, the British workers could not remain unaffected. The frequent turnover accompanied workers’ continuous pleas to the British diplomats in Constantinople to intervene on their behalf so that they could get paid. In 1860, British mechanics had to go to the British Embassy after their
payments were still in arrears, although they had accepted to receive their wages every three months.\footnote{BOA.HR.TO.233/52, 30 March 1860; BOA.HR.MKT.331/68, 24 Ramazan 1276 (15 April 1860); and BOA.HR.MKT.334/37, 24 Şevval 1276 (15 May 1860).} Records on recruitment show that the same year, several British workers were either dismissed or left on their own and were replaced by others, albeit this time on a more temporary basis and mostly without contracts.\footnote{See DMA.Env.341/2 for records from 1860 and 1861.}

In the first few years of Sultan Abdulaziz’s reign, as the Ottoman government increased the naval budget considerably thanks to foreign loans, it simultaneously tried to cut labor costs especially of civilian wage workers. As discussed in the last chapter, following a large-scale dismissal in the late 1850s, the number of civilian wage workers increased back to around 2,400 workers with the recruitment of 1,000 workers after Abdulaziz’s enthronement, although their number was still not enough for projects envisioned for the Arsenal.\footnote{BOA.A.AMD.94/81, 29 Safer 1278 (5 September 1861).} In 1862, the government decided to switch to an elastic pay system, according to which workers would be paid lower during winter, since they worked fewer hours because of the shorter daytime. Workers responded to this with a massive exit, leaving their jobs for work elsewhere, which eventually forced the government to retract.\footnote{DMA.Env.341/6, 15 Cemaziyiilahir 1279 (8 December 1862).}

Unable to decrease the number of workers, since they were needed to complete the Sultan’s ambitious projects, and failing to reduce their cost by cutting their wages, the Ottoman government faced a serious dilemma. On the one hand, even with loans from Europe flowing in, economic problems persisted, so much so that the value of kaime (paper money) plunged to such levels that the government was forced to withdraw it after protests.\footnote{Şevket Pamuk, A Monetary History of the Ottoman Empire (Cambridge, UK: Cambridge University Press, 2000), 211.} On the other hand, the
Sultan pressured the naval administration to make huge investments, by purchasing machinery and steamships, for the construction of a powerful and competitive navy as quickly as possible. As a solution, it opted to stream the available funds towards these investments, by keeping workers’ wages in arrears as long as possible. Local workers did not remain silent against these arrears, going on strikes from time to time. The government could only appease them by paying these arrears, albeit gradually at various installments.\(^{323}\)

British workers, whose wages were much higher than most of their local counterparts, nevertheless continued to suffer from the problem of arrears under the reign of Abdulaziz as well.\(^{324}\) In 1866, a letter from the Grand Vizierate to the Admiralty complained of the persistent grievances made by English subjects over the delayed payments in the Imperial Arsenal.\(^{325}\) As a result, many workers continued to leave immediately after the end of their contract, sometimes forcing the administration to rearrange the assignments of the remaining foreign workers since they could not be replaced by locals.\(^{326}\) Still, these exits were less of a threat to the pace of production compared to earlier periods, when there were not a sufficient number of skilled workers among the locals, and when hiring new workers was more costly, a situation that gave an edge to workers’ demands. By the late 1860s, however, such turnovers, at least in the case of mechanics, did not seem to concern or threaten the Ottoman authorities anymore. One reason for

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\(^{324}\) As a comparison of wages between local and British workers, in 1870, at Yalıköşkü Engine Factory, the lowest paid British worker received 7 shillings (38.5 piasters) a day, whereas the highest paid local worker received 25 piasters. Most British workers in the Arsenal were paid above this rate, though there were at least some British workers who paid remarkably lower, such as the 7 workers at the Boiler Shop, who were paid between 7 and 13 piasters a day. In this factory, the average pay for local workers was around 18 piasters. See BOA.$\ddot{S}$D.2/29.

\(^{325}\) BOA.A.MKT.MHM.354/13, 2 Zilhicce 1282 (18 April 1866).

\(^{326}\) See, for example, DMA. Env.1897/5, 27 Ramazan 1285 (11 January 1869).
this was the increasing availability of local mechanics, trained by these foreign workers, especially through military-vocational training, as we will see in the next chapter. Indeed, from the late 1860s onwards, many foreign mechanics were replaced by local mechanics, who were trained in the Arsenal by these British workers.\textsuperscript{327}

There likely was another reason why high turnover was less threatening to the Ottoman authorities at this time. The financial panic of 1866 in Britain led to severe unemployment and a fall in wages in the shipbuilding industry, and Ottoman authorities, now having more access to and familiarity with the British labor markets, seemed to be more successful in finding new workers in Britain, at times with no need for contracts.\textsuperscript{328} Indeed, the economic problems in Britain might have facilitated the hiring of skilled workers for the construction of the first Ottoman ironclad in the Arsenal, which was laid down in this period.\textsuperscript{329} However, the Ottomans were less flexible when it came to replacing the latter group of workers, as the vocational classes in the Arsenal had recently been adjusted to train iron shipbuilders. Therefore, as the British shipbuilding industry recovered from the crisis in the early 1870s, and job prospects and average wages for these workers dramatically improved, this had an immediate impact on relations between these workers and the government. In 1871, 49 British workers, who had been hired two years earlier for the construction of the ironclad, attempted to leave, referring to their low wages in the Ottoman Empire and the increasing job prospects in their own country. The government, although determined not to increase the wages of such irregular workers who were hired

\begin{footnotes}
\item[327] BOA.İ.DH.628-43659, 2 Zilhicce 1287 (23 February 1871) and DMA.Env.1897/10, 19 Receb 1285 (5 November 1868).
\item[328] For examples, see DMA.Env.1897/9 and 10 for employment records from 1868 and 1869.
\end{footnotes}
specifically for the ironclad construction, relented and increased their wages, in order not to undermine the construction process in the Arsenal.\footnote{BOA.İ.DH.648/45063, 22 Muharrem 1289 (1 April 1872).} Thus British workers were able to successfully exploit the Ottoman state’s need for skilled labor.

**Migration and the Development of Class Relations**

The increasing pace of production throughout the 1860s, which likely gave a sense of job security, and the relatively high purchasing power of their wages in the Ottoman Empire, coupled with the negative prospects for shipbuilders in Britain, prompted many of these British workers to bring their families to settle in Istanbul. Aside from temporary workers who were largely hired for ironclad construction, at least 128 workers were listed as “regular workers” in 1870, which confirms a correspondent’s statement that British workers here relied on “continuous employment” in the Arsenal, although their wages were in arrears for as long as six months.\footnote{“The Industrial Classes in Turkey,” Pall Mall Gazette, 26 January 1872.} Most of these workers were receiving between 13 and 15 pounds a month, although there were a few who were receiving as much as 35 and as little as 3 to 4 pounds.\footnote{BOA.ŞD.2/29.} As to their purchasing power, a correspondent stated that clothing was “not unreasonable” and house rents were “seldom under 25 pounds per annum for a superior artisan in Constantinople.”\footnote{“The Industrial Classes in Turkey,” Pall Mall Gazette, 26 January 1872.}

Throughout the 1860s, as their number in the Arsenal and other mechanized facilities of the government increased, British workers joined their citizens in other professions as part of what many accounts now referred to as a “colony”. According to a consular report from 1871, British workers, together with Maltese immigrants, were the backbone of British immigration
Although the report argued that the Ottoman Empire was “not a field for British immigration” due to the incompatibility of the conditions here with the “standards” of the British, journalistic accounts were more positive in this regard. A correspondent in 1870, for example, suggested that a British subject would not feel alone in Istanbul, because the city had several English-controlled institutions, from churches and newspapers to a hospital and the English-controlled Ottoman Bank: “With the exception, perhaps, of his bread, meat, and vegetables, a patriotic Briton may make all his purchases of his fellow-countrymen, who he will find represented in every trade and profession.”

Almost all of the British workers in the Arsenal settled in Hasköy, an old Jewish village near the Imperial Arsenal, where by 1873, there were 139 British families, consisting of around 700 people. These “British Hasskenites,” in the words of a Times correspondent, “have in their social life created for themselves a little world of their own, the type of their fatherland.”

Together with their British counterparts in other state factories, they established the Istanbul branch of the Mechanics’ Institute in 1859. The Institute had 168 members by 1873, who had erected a stone building in the neighborhood, by collective subscription, which provided the community with a large lecture-hall and other facilities: “The lectures are weekly and well-sustained, the reading room is supplied with the leading papers and periodicals, the library consists of more than 800 volumes, the billiard room is furnished with two good tables, and the

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334 TNA.FO.195/975, 7 July 1871.
335 Ibid.
337 “British Engineers at Constantinople,” The Times, 07 April 1873.
338 Ibid.
339 Macfarlane mentions an attempt to launch a Mechanics Institute back in 1847, by the English mechanics of a factory complex, owned by the state, in Macrikeui in Constantinople. However, in spite of an inauguration dinner, he observed that it was “an inauguration without a beginning.” MacFarlane, Turkey and Its Destiny: The Result of Journeys Made in 1847 and 1848 to Examine into the State of That Country, 216.
museum-capable of extension-contains some valuable models of modern naval architecture and machinery.”

The lecture hall was also used as a school, for around 140 children, and according to another report in 1876, there was also a school for orphans, “dependent on voluntary contributions.”

Aside from the Institute, the community, most of whom were Scottish, had also a club, a masonic hall, and cooperative stores, as well as a Scottish minister and a Free Kirk preacher, “a sort of missionary to the Jews.” Many of them bought houses, and some of them built their own. They had a cricket team, called “Haskeui Amateurs’ Sixteen,” whose matches against other British teams in the city attracted non-British spectators as well, “including many Jews and Turkish women.” In addition to assisting “each other in case of death and poverty amongst their comrades,” they also supported other distressed British subjects, mostly Maltese laborers, through the British Relief Society. As their numbers increased, they became more active in transforming the neighborhood, especially after the cholera epidemic of 1871-72, when many British, “chiefly the wives and children of engineers” of the Arsenal, passed away.

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340 “British Engineers at Constantinople,” The Times, 07 April 1873.
341 “English Colonies on the Bosphorus,” The Times, 22 February 1876. The school for orphans was most likely established after the cholera epidemic of 1871-72, which hit the neighborhood hard.
342 The club, which was named “Mechanics’ Club House,” was converted from a house in Hasköy where refreshments (including alcohol) would be served for “respectable bachelors” who opted to have their meals in “more comfort and decency than is afforded by the eating shops of the village.” The Police, with the support of local eating shops, initially refused to give a license, due to its proximity to a mosque. The problem was resolved only after the intervention of British diplomats and a written assertion of the club owner that he would only serve the British community. See TNA.FO.195/975, 17 June 1871.
343 “English Colonies on the Bosphorus,” The Times, 22 February 1876. In 1847, Macfarlane also observed that there were three Free Kirk preachers settled in Constantinople, whose mission “was to convert the Jews of that city.” MacFarlane, Turkey and Its Destiny: The Result of Journeys Made in 1847 and 1848 to Examine into the State of That Country, 218.
344 TNA.FO.195/975, 17 June 1871.
345 “English Colonies on the Bosphorus,” The Times, 22 February 1876.
346 TNA.FO.78/2245, 10 April 1872.
neighborhood, as well as the unsanitary conditions there—particularly slaughterhouses and open sewers—responsible of these deaths. As a result of pressures from the community and British diplomats, the government had to launch initiatives to cover sewers, demolish slaughterhouses, and bring water to the neighborhood.\textsuperscript{348} All of these led the British consul in the early 1870s to conclude that it was not easy for British workers to quit their jobs because of dissatisfaction with the arrears or low wages, since they “would have to make great sacrifices if they suddenly withdrew from a place which they have looked upon more or less as a permanent home.”\textsuperscript{349}

It was for this reason that they became more vocal about the unpaid wages and dismissals, as such problems became more striking than ever, not only for the workers, but also for their entire families, who settled with them. In the early 1870s, the excessive burden of international debt made the payment of loans increasingly difficult, and the financial credibility of the Ottoman government in the European markets was in dramatic decline, leading to “rumors of bankruptcy in the European markets.”\textsuperscript{350} Increasing deficits in the budget did not, however, curtail the Sultan’s push to continue with military expenditures, especially when tensions with Russia escalated again, leading to the Ottoman-Russian War of 1877-78. As a result, the navy continued to buy vessels,\textsuperscript{351} as well as tools and machines for the existing vessels and factories,\textsuperscript{352} attracting again the protest of Ottoman bureaucrats and their British counterparts.\textsuperscript{353}

\textsuperscript{348} TNA.FO.195/989, 2 May 1872. The report mentions the residents’ desire to buy the ground of a demolished slaughterhouse and turn it into a “place of recreation for their children.” This was, most likely, the common on which the Times correspondent saw the British children playing after school in 1876. See “English Colonies on the Bosphorus,” The Times, 22 February 1876.
\textsuperscript{349} TNA.FO.195/1102, 29 January 1876.
\textsuperscript{351} TNA.FO 195-1022, 29 June 1873, and BOA. BEO.AYN.d.990/49, 24 Cemaziyülevvel 1290 (20 July 1873).
\textsuperscript{352} BOA.BEO.AYN. d. 990/5, 28 Receb 1289 (1 October 1872); BOA.BEO.AYN. d. 990/15, 7 Şevval 1289 (8 December 1872); and DMA.ŞUB.70/243a, 12 Zilkade 1289 (11 January 1873).
\textsuperscript{353} TNA.FO.195/974, 17 November 1871.
An important reason for the British diplomats to protest such expenditures as “extravagance” was the fact that they were made in a context when the government could not pay its workers regularly, particularly its British workers. Even before this period, arrears in payments, as we saw, were characteristic of the conditions of both British and local workers in the Arsenal. However, as the economic crisis started to escalate, these arrears became more troubling, leading the workers to voice their discontent more frequently and loudly, leading to strikes and confrontations with the police over their wages. In fact, workers’ discontent was remarkable enough to have political consequences as well. In 1873, local workers whose wages were thirteen months in arrears, collectively stopped the Sultan after a Friday prayer to present their petition about their discontent over wages and their treatment by Namık Pasha, the Minister of Marine. The Sultan immediately removed him from office.

In this context, the British workers, whose wages remained unpaid as well, and who opted not to leave the Arsenal as many of them were now settled on a more permanent basis, had three options, as they told the British Consul-General in Istanbul when they visited him about their wages in 1876. Their first option was to apply to the Arsenal administration to pay their wages. When they did so, they said, the Pashas always made promises, only to break them later on. In effect, this was characteristic of the administration’s response to the workers, as examples from earlier years show as well. In 1868, for example, when Thomas Hampton, an armor plate-roller, applied to the administration for payment of his wages, he was told “to wait a few days, to wait one month, and to wait generally.”

354 For arsenal workers’ collective actions in the early 1870s, see Sencer, Türkiye‘de İşçi Sınıfı: Doğuşu ve Yapısı, 135-38.
355 TNA.FO.195/1022, 31 January 1873.
356 TNA.FO.195/1102, 29 January 1876.
357 Ibid.
358 TNA.FO.195/890, 14 May 1868.
This, however, was not easy for these workers, as “waiting in a strange and expensive country means starvation and debt,” since they and their families were almost exclusively dependent on their wages for their livelihoods.\(^{359}\) Although their wages were higher than those of local workers, their situation could become far worse than the latter when they were not paid regularly. As the Consul-General explained in his report, local workers could get rations, in the form of food items (including bread), which were denied to the foreigners, due to the latter’s high wages. In addition, the British workers belonged to a very small community, unlike their local counterparts whose religious or geographical networks could obtain them “in a wonderful way” credits for their basic needs during the unpaid months.\(^{360}\) In other words, the lack of such networks made the British utterly vulnerable to the irregularities of payments, as these wages were their only source of livelihood.

Therefore, it was not unexpected that just like local workers, British workers also went on strikes from time to time, perhaps as a last resort.\(^{361}\) According to a newspaper from August 1871, which informs us of “another strike” of British engineers in the Arsenal, the previous year, in the summer of 1870, the Ottoman authorities and the British workers made a deal, apparently following a strike at the time. Accordingly, in case payments remained in arrear for more than a month, workers would be “permitted” to go to strike, “strange as it may sound to factory owners in England.”\(^{362}\) This obviously reflects the Arsenal administration’s concern for the continuity of production in the Arsenal, especially when the (first) ironclad, one of the Sultan’s dream projects, was under construction. But it also seems to point out the confidence on the part of the authorities

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\(^{359}\) Ibid.
\(^{360}\) TNA.FO.195/1102.
\(^{362}\) “The Engineers’ Strike at the Arsenal,” The Levant Herald, 22 August 1871.
that the British workers would not be eager to go on strike whenever they were not paid. Indeed, the newspaper also implied that this option had not been used since then, attributing it to workers` inability to find “volunteers” who would act as their spokesmen against the Ministry: “It is well known that in England those who make themselves conspicuous in strikes become marked men.”\textsuperscript{363}

In fact, according to the Consul-General`s report in 1876, workers` dependence on their jobs and on their wages made workers reluctant to use the second option, that is, going on strike. As industrial establishments in Istanbul were largely limited to the state factories, they had nowhere else to go when they were dismissed from the Arsenal due to disciplinary problems. Adding to that was the fact that their negotiating power was increasingly weaker in the mid-1870s, as the increasing number of local skilled workers with far lower wages than the British would push the Ottoman elites to replace the latter with the former at the first opportunity. Therefore, now that many British were settled migrants in Istanbul, and leaving without a better prospect in Britain or elsewhere was their last choice, their primary interest lay in maintaining their good relations with the state authorities to keep their jobs. In fact, they wanted to avoid a “general strike” as much as possible, since it “might distort the harmony and good feeling which they desire to maintain with the government they serve.”\textsuperscript{364}

The remaining option was to “seek the amicable intervention of the British authority with the Porte.”\textsuperscript{365} As we showed above, this option was frequently used by the British workers in the earlier decades and proved to be a viable option to help these workers receive payment, as the Ottoman government was concerned with maintaining its political and economic ties with the

\textsuperscript{363} Ibid (emphasis in original).
\textsuperscript{364} TNA.FO.195/1102.
\textsuperscript{365} Ibid.
British, as well as maintaining its financial credibility in the eyes of the Europeans. In the 1870s, a larger number of British workers in the Arsenal and other state establishments continued to keep the British authorities in Istanbul busy with their complaints, which were not limited simply to delayed wages,\textsuperscript{366} but also started to include issues ranging from working conditions, such as problems over the length of working-time,\textsuperscript{367} and disagreements or additional requests pertaining to their contracts,\textsuperscript{368} to living conditions and everyday life in their neighborhood, as discussed above.

Aside from the economic burden of increasing dependence on foreign workers for skilled labor, such interventions also affected the naval projects of the Ottoman government, as it had to withdraw from some projects to be able to pay its workers. For example, in 1874, when the British Consul-General in Istanbul learned of the Ottoman government’s negotiations to purchase ships from a British company, he complained: “…how outrageous it was for the Turkish admiralty to be spending 19,000 pounds… whilst they were meanly pleading day after day that they had no money to pay the arrears of wages of some unfortunate British engineers.”\textsuperscript{369} Upon the intervention of the British ambassador to Istanbul, the deal was cancelled, in spite of the protests of the British businessmen who were involved in it, so that the wages of engineers working in the Aziziye Company (the state’s steamship company), whose wages were in arrears for a while, could be paid.\textsuperscript{370}

\textsuperscript{366} TNA.FO.195/1145, 17 April 1877, and TNA.FO 195-1145, 17 September 1877.
\textsuperscript{367} On the complaints of engineers, mostly working in the Imperial Gun Factory (Tophane) about being forced to work over 9 hours a day, which they believed to be the “universal” norm of working time back in Britain, see TNA.FO 195/991, 14 March 1872.
\textsuperscript{368} TNA.FO.195/890 and FO.195/1247, 1 October 1879.
\textsuperscript{369} TNA.FO.195/1044, 13 January 1874.
\textsuperscript{370} TNA.FO 195/1042, 5 March 1874.
As discontent over such interventions overlapped with the tightening problems in payments, the Ottoman government opted to eliminate such “nuisance” by simply speeding the process of replacing these British workers with the local graduates of vocational classes in the Arsenal. In 1873, with the increasing escalation of financial troubles and the payment of wages, coupled with the belief that native workers now could replace their masters, the state began to dismiss British workers. In this year alone, around 50 of the Englishmen who had worked at the Arsenal between 5 and 15 years were discharged, a move which was accompanied by dismissals in the Imperial Gun Factory (Tophane) as well. The same year, the government decreed an increase to the number of both the industrial and the boys’ battalions, in another effort to replace civilian workers (including the British) with soldiers. In a short while, in fact, the Porte’s intention to replace all British workers with locals (preferably soldiers), due to their high cost, became clear.

The reactions of the British community, as reflected in the protests of British diplomats and newspapers, not only demonstrate workers’ discontent over these dismissals, but also offer further evidence of how they expected to remain a permanent part of the workforce. Already by November 1873, the British ambassador was working hard to convince the government to step back from the schemes to discharge British workers, going as far as seeking an audience with the Sultan for this goal. As these dismissals were also covered by the English press in Istanbul as well as in Britain, the government had to defend these dismissals on the ground that these workers were dismissed mostly because their contracts were over or they were not needed.

372 BOA.İ.DH.667/46467, 29 Rebiülevvel 1290 (27 May 1873).
373 “Turkey,” The Morning Post, 22 November 1873.
374 TNA.FO.195/1023, 20 November 1873.
anymore on the vessels, and that they were all paid in full.\textsuperscript{375} In effect, according to a consular dispatch in March 1874, which lamented the departure of 27 engineers together with their families from Istanbul, some of the workers had left their service voluntarily, without waiting their “turn” to be dismissed. Considering this course as a “suicidal folly” on the part of the government, the dispatch ended with a note of disapproval of the scheme to replace these workers with natives, warning that it would be too late if the service of these skilled British engineers would be needed ever again, as had happened during the Crimean War in 1854.\textsuperscript{376}

Around 70 British workers remained in the Arsenal by 1876 after these dismissals.\textsuperscript{377} They were most likely aware of the fact that their tenure in the Arsenal was coming to an end, since industry had come to a halt after 1875, when the Ottoman government declared a moratorium on its debts.\textsuperscript{378} Nevertheless, unlike hundreds of local workers, many of them were able to keep their jobs during the crisis, although they continued to be not paid for five or six months in a city where inflation was rampant, basic necessities were absent, and circumstances were calling for a “revolution.”\textsuperscript{379} This was most likely due to the temporary necessity of their service upon the start of the Ottoman-Russian War of 1877-78. By the end of the war in 1878, most of them, together with their counterparts in the \textit{Tophane}, would be discharged as well.\textsuperscript{380}

In 1878, the British Consul-General was expecting a high number of applications to the British Relief Fund from discharged workers and their families who were unable to afford traveling back home.\textsuperscript{381} This expectation was not without grounds. Since most of these workers

\begin{footnotes}
\item[375] DMA.MKT.160-13a, 5 Zilhicce 1290 (24 January 1874).
\item[376] FO 195/1042, 6 March 1874.
\item[377] FO.195/1102.
\item[378] “Affairs at Constantinople,” \textit{Pall Mall Gazette}, 15 March 1876.
\item[379] \textit{The Western Times}, 8 May 1876, p.2, and “Turkey in Europe-Sailing of the Turkish Fleet Under and English Admiral,” \textit{The Western Times}, 12 July 1876.
\item[380] TNA.FO 78/2877, 28 February 1878.
\item[381] Ibid.
\end{footnotes}
settled on a permanent basis, they had made investments with the expectation that they would continue to work, even after their contracts came to an end. As we have seen, many of them bought or constructed houses for their families or invested in local societies. However, the crisis of the mid-to late 1870s left many of these families in distress, leading them to sell their houses at far lower than their market value and to give up “their shares in social establishments.”

Although their original contracts included the reimbursement of their travel back home, many of them apparently could not claim it, since they continued to work without contracts afterwards. Even when they did claim such a reimbursement, it was not enough to cover all of their family members.

An illustrative case in this regard, which came to the attention of the British Consulate in 1878 also shows how the British community in Istanbul depended for their survival on their jobs in the Arsenal. Sarah Ellis, a 73-year-old woman, came to Istanbul with her husband George, who worked in the Imperial Arsenal and in the Mint in Istanbul. Upon his death in 1868, she continued to live in Istanbul, living off the money he had left her for two years. When her funds were exhausted, Sarah moved to the home of her daughter, whose husband, a Mr. Till, also worked in the Arsenal, until he was dismissed in September 1877. Till left Istanbul with his wife and five children shortly after, but in such a state of financial distress that he was unable to afford Sarah`s travel costs. Before he left, he paid off his debts from loans he had made to sustain his family during long periods when he was not paid by the Arsenal. Sarah then moved to live with her other daughter in Istanbul, whose husband was a shipbuilder with three children. However, they also were in a state of financial distress and could not afford to maintain her within the family. In the end, the Consulate offered her the funds to travel to Liverpool, where she could

382 “English Colonies on the Bosphorus,” The Times, 22 February 1876.
live with another one of her daughters. During the trip, she would be accompanied by a Mr. Thompson, an Arsenal worker returning to England, and who offered to take care of her until they landed in Liverpool.\textsuperscript{383}

Already by 1876, the Times correspondent “could not but regret that what had promised to become a flourishing and permanent settlement should be so likely soon to vanish from the land, leaving no trace…”\textsuperscript{384} He did not have to wait long to see what he had predicted. At the end of the following decade, only 20 foreign workers remained at the Arsenal, around half of whom were Germans.\textsuperscript{385} This declining trend continued through the turn of the century, in parallel to the increasing inactivity in production and in technology transfer, as the golden years of industrial transformation were now over. Thus, even these remaining workers seem to have left by 1905, when another correspondent mentioned the existence of only “one or two Englishmen and a few Germans,” mourning the bygone era of British workers in the Arsenal once upon a time.\textsuperscript{386}

What were the relations of foreign workers with Ottoman workers during these years? Unfortunately, the documents at hand give little information about such relations. Most obviously, language was a huge barrier for such contacts, and although some foreign workers who lived in Istanbul long enough might have learned some Turkish, they probably did not need to do so in order to communicate with naval officers, most of whom learned English in the Naval School and most likely served as their translators within the Arsenal. Still, since their contracts

\textsuperscript{383} TNA.FO 78/2877, 11 January 1878.
\textsuperscript{384} “English Colonies on the Bosphorus,” The Times, 22 February 1876.
\textsuperscript{385} DMA.BN.140/3196, 14 Şevval 1306 (13 June 1889). The existence of German workers was most likely due to the Ottomans’ growing contacts with Germany, and their deteriorating relations with Britain, during the reign of Abdulhamid II (r.1876-1909). See İlber Ortaylı, Osmanlı İmparatorluğuunda Alman Nüfuzu (İstanbul: Kaynak Yayınları, 1983).
\textsuperscript{386} “Tershana-A Turkish Shipyard,” The Engineer, 8 December 1905.
stipulated that they were supposed to train local workers, they had to remain in contact at least with those who were assigned to them as apprentices. Some of these apprentices were the child workers in both civilian and military status, whom we will discuss in the next chapter. Apart from them, there were also older local workers who were assigned to them as their apprentices, mostly to master in the production and maintenance of machinery. In some registers, these latter workers were referred to as “accompanying workers” (refakat amelesi), who numbered 61 by 1875.\textsuperscript{387}

It would thus not be surprising to see that their relations with the rest of the labor force were largely limited to these apprentices, in addition to officers. In this regard, there are at least a couple of cases which may point to the existence of closer relations between these workers, to the extent that they may have formed a separate faction at least within the workplace. In 1868, for example, when many local workers were complaining of not being paid, 13 local workers who accompanied the British workers received a raise, after their British foreman petitioned for an increase in their wages due to their hard work.\textsuperscript{388} A more illustrative case took place in 1876, in the midst of the economic crisis, when most workers either lost their jobs or could not receive their wages for long months, leading to the above-mentioned strikes. In June 1876, an internal correspondence referred to the complaints of local workers about the payment of wages to these accompanying workers. Accordingly, when British workers were finally paid, again most likely upon the intervention of British diplomats, the wages of these accompanying workers were also paid together with their masters’, leading to the immediate outrage of other local workers who still had not been paid. As a result, the administration decided to pay the future wages of these accompanying workers together with other local workers, rather than with their masters, since

\textsuperscript{387} DMA.BN.225-6148, 1 Zilkade 1292 (29 November 1875).
\textsuperscript{388} DMA.Env.1897/2, 18 Cemaziyülevvel 1285 (6 September 1868).
doing otherwise could provoke other workers for “going on strike” and resorting to “various complaints and disturbances” in the Arsenal.\textsuperscript{389}

**Conclusion**

In this chapter, I have underlined two points: First, the global context of industrialization and the development of political and economic connections between the Ottoman Empire and the British Empire in the mid-nineteenth century were centrally significant to understand the history of industrial transformation in the Imperial Arsenal. The Ottoman state’s efforts to remain competitive against the increasing threats to the state’s existence, marked by the disaster in Navarino, the independence of Greece, and the Egyptian crisis, pushed the Ottoman navy to modernize its fleet and the shipbuilding process. In the context of industrialization, this meant adaptation to the new technologies of production, and thus dependency on the transfer of technology and skilled labor. The increasing connections with Britain beginning with the early 1840s allowed the Ottomans to partially transcend the financial constraints that limited the industrialization efforts in the earlier decades, especially by means of foreign loans after the Crimean War. This technological transformation, initially a response to competitive pressures, was marked by capitalist motives as well. On the one hand, industrial investments were consciously driven by the necessity to reduce labor costs. On the other, these investments could be made only by cutting labor costs, through attempts such as militarization, replacing foreigners with local workers, or withholding wages for long periods of time. In other words, the expansion of capital was both the reason and the goal of keeping labor costs low in the Arsenal.

\textsuperscript{389} DMA.Islahat.2/46a, 11 Cemaziyülevvel 1293, 4 June 1876.
My second point is that, British workers, who migrated to Istanbul within this context, figured in the development of class relations in this period. Increasing connections with Britain led to growing number of British workers migrating to work in government establishments, first and foremost, in the Imperial Arsenal. As both mechanization and production increased, more and more British workers saw the Arsenal as their permanent workplace, which led them to bring their families, and settle down in Istanbul. As they did so, their relations with the government changed as well, since they considered themselves not only permanent workers, but also permanent inhabitants of Istanbul. Now that they, with their families, were immigrants, rather than temporary workers, their expectations and experiences changed accordingly. This also transformed their actions against the government for their discontent. Exiting became less of an option, and striking was risky since they could not tolerate dismissals, which pushed them to seek alternative ways, the most favorable of which was the intervention of British diplomats. These active struggles especially against the problem of non-payment of wages, in addition to the high cost of British labor, pushed the Ottoman government to play its own cards against these workers, by capitalizing on workers’ increasing dependence on their jobs in the Arsenal.

This struggle between the government and the British workers had a larger influence on the labor relations in the Arsenal as well. Having failed to militarize its civilian labor force and in the face of increasing dependence on foreign skilled labor, the Ottoman government sought an alternative to reduce the cost of labor in order to reserve more resources for the transformation drive in the navy. This alternative came in the form of vocational-military classes, through which British workers would raise local children as skilled industrial workers. Ottoman state elites expected that this alternative would not only compensate for the partial failure of the militarization process but would eliminate their dependence on civilian labor, including the foreigners. Although training children was mostly a part of their initial contract with the Arsenal,
those among the British workers who hoped for a more permanent tenure would soon realize they were assigned to kill their own prospects for employment in the Arsenal.
CHAPTER 4

RAISING AN INDUSTRIAL WORKING-CLASS IN THE IMPERIAL ARSENAL

In the nineteenth century, Ottoman policies on child labor integrated children in the Imperial Arsenal into the making of capitalist relations. The goal was to create workers whose control over the means of production and the production process was taken away, who were systematically organized and disciplined to become more productive and profitable, and who became increasingly dependent on the sale of labor power. Especially throughout the Tanzimat Era (1839-76), the Ottoman state elites systematized, institutionalized, and expanded their involvement in the production process by targeting the children, who now had a crucial role to play in the official efforts to create a regular, skilled, profitable, and disciplined labor force in the Arsenal. 390

In the early nineteenth century, the Ottoman naval authorities shaped their policies toward the employment of children according to the latter’s impact on the stability and efficiency of production and the mobilization of labor for the Arsenal. Children, as apprentices, had an important role to play in the reform plans of the military elites, which overall aimed to create a regular and productive labor force in the Arsenal. However, aside from these apprentices, the Imperial Arsenal employed children whose changing level of involvement in production was largely connected to their accessibility as labor draftees for the Ottoman navy, on the one hand,

390 Ottoman children, as historical actors, have started to draw historians’ attention only recently. For examples of recent works, see Yahya Araz, 16. Yüzyıldan 19. Yüzyıl Başlarına Osmanlı Toplumunda Çocuk Olmak (İstanbul: Kitap Yayinevi, 2013); Nazan Maksudyan, Orphans and Destitute Children in the Late Ottoman Empire (Syracuse University Press, 2014); Gülay Yılmaz, “Becoming a Devşirme: The Training of Conscripted Children in the Ottoman Empire,” in Children in Slavery through the Ages, ed. G. Campbell, S. Miers, and J.C. Miller (Ohio: Ohio University Press, 2009).
and to the reluctance of Ottoman authorities to employ child workers, whom they considered to be mostly inefficient, unskilled, and liable to accidents, on the other.\textsuperscript{391}

As discussed in the previous two chapters, in the mid-nineteenth century efforts to increase the top-down control over production were curtailed on the one hand, by the increasing dependence on foreign-civilian skilled labor largely due to the mechanization of production, and on the other, by the partial failure of the conscription system due to the massive numbers of desertion and resistance against the process. In parallel to these processes, the state elites re-defined the role of children in production in the Tanzimat Era.

The dramatic change in the role of child workers could, thus, only be visible within the context of the contradiction between the industrialization and the militarization campaigns in the Arsenal. In parallel to the increasing presence of British mechanics, children-apprentices in this era were first seen as the local, thus cheaper and more disciplined, replacements of these mechanics. In line with the decreasing share of conscript workers in production, they were also assigned to maintain and increase the share of military labor against civilian wage labor. Starting with the 1860s, these processes overlapped with the dramatic intensification of mechanized production, and with the rise of urban poverty, due to wars and famines that created a mass of poor children in the capital, making them a potential threat in the eyes of urban elites. As a result, the participation of children in production was institutionalized through vocational schools, in the

\textsuperscript{391} Although the age of puberty was the threshold for adulthood in Ottoman society, especially following the introduction of the modern conscription system, the threshold became the minimum age of conscription, which was 19 for the Ottoman navy. As to the employment of children, there was not an official policy regulating it in Ottoman society, and, as Araz shows us, there were cases where children as little as five years old were employed as apprentices in workshops in earlier centuries. See Araz, \textit{I6. Yüzyıldan 19. Yüzyıl Başlarına Osmanlı Toplumunda Çocuk Olmak}, 147. However, when it comes to the employment in the Imperial Arsenal in the nineteenth century, we could suggest that the Ottoman authorities generally did not approve the employment of children below 12-13 years old. This was not only due to moral concerns, but also, as we will see, to concerns regarding their productivity.
form of civilian classes to train mechanics and boys’ companies and battalions. These schools of practice marked the intersection of the schemes to create a productive and profitable labor force in the Arsenal and the larger Tanzimat efforts to create a mass of modern citizens with industrial skills, considered as indispensable for the “progress” of the Empire.

It was in this context that children’s labor power became a crucial element in the Ottoman transformation schemes concerning the Arsenal. It was not simply because their labor power was cheaper than both civilian and conscript workers. In the long run, they were also promising to contribute to the capitalist transformation of the Arsenal, and eventually of the Empire, as they would become a more exploitable labor force that normalized the basic premises of industrial capitalism in this period, from increasing division of labor to competition and time-work discipline. In this way, throughout the second half of the nineteenth century, the labor power of children became a central component of capitalist relations between the Ottoman state and its workers in the Imperial Arsenal.

**The Employment of Children in the Early Nineteenth Century**

As discussed in Chapter 1, beginning with the introduction of the “New Order” in the 1790s, the Ottoman naval elites attempted to control the labor process by reorganizing the labor force in the Arsenal, by means of a regulation, through which a regular force of around 500 carpenters and augerers was created. The regulation also ordered the assignment of around 40 apprentices to these workers, basically to standardize the labor profile in the long run. However, the regulation underlined that these apprentices (şakird) should be selected from among those who were talented and healthy (“işe güce yarar”) and that “children and the like must never be registered”
as apprentices.\textsuperscript{392} The text did not specify what age group this statement referred to, but considering that the lower limit was specified as 12 in the 1827 Code of Laws (Bahriye Kanunnamesi) and thereafter, we can suggest that it only referred to those who had yet to reach the age of adolescence. Still, such a special emphasis on these apprentices highlighted the significant role of training workers for the reorganization plans in the Arsenal.

Although this reorganization was originally meant to bring more top-down control over the production process, by the 1820s, it became apparent that it mostly empowered the overseers within each column (posta). Originally, both carpenters and augerers were organized along different columns, each of which was headed by a carpenter or an augerer journeyman (kalfa). The 1827 Kanunname, which critically describes the contemporary situation in the Arsenal to justify the necessity for reforms, points out to the corruption of the overseeing journeymen of each column (posta kalfaları). These overseers were supposed to employ ten workers in each column, though “they employ(ed) only a few carpenters, and a couple of little children as apprentices, as well as writing one to two apprentice-wages for themselves” referring to their embezzlement. Employing little children instead of adult carpenters did not only give these journeymen more power in the labor process. As these overseers were also responsible from the registration and distribution of wages to the workers in their columns, it also created an alternative space for embezzlement since children’s weak presence in the labor process gave the journeymen the ability to add a couple of apprentice wages to the register in absentia. The Kanunname, which overall aimed to reinstitute the government’s control over the production process, repeatedly ordered that neither carpenters nor augerers should employ children under 12

\textsuperscript{392} Vak'anüvis Halil Nuri Bey, Nûrî Tarihi, 377.
years old, and increased the apprentice wages from 10 _para_ to 20 _para_, along with increases in the wages of carpenters.\textsuperscript{393}

The emphasis on the age limit of children to be employed in the workforce reflects a concern that was far more visible in the more irregular parts of the labor force. In spite of their cheap wages and the advantages regarding their discipline, children were not as skilled and experienced as grown-ups, and thus especially in shipbuilding tasks that required a certain level of artisanal skill and training, any redundant increase in the number of small children threatened the production process with inefficiency. This inefficiency further increased with the disruption of the labor process due to frequent job accidents, which was more likely to increase in parallel to the number of children, due to the latter’s relative inexperience at work. This contradiction between childhood and productivity also shaped the child labor policies in other parts of the capitalist world. Employers in France, for example, contrary to dominant assumptions, did not always prefer children especially in those production sites that required more skills and experience. However exploitable they were, their limited skills and experience also limited the level of exploitation.\textsuperscript{394} This concern on the part of state elites also marked their problems with the practice of labor draft from Istanbul, as children who were sent by the guilds could not address the increasing demand for skilled and experienced labor in the Tanzimat Era.\textsuperscript{395}

In cases where the employment of children did not necessarily lead to a problem of efficiency or productivity, however, the state did not refrain from employing children rather than the adults, as they were easier to be drafted, more disciplined in the production process, and far cheaper compared to the adult forced workers. The case of the Riştehane (Imperial Yarn Factory)

\textsuperscript{393} BOA.A.\{DVNS.KNA.d.06/97. See Chapters 1 and 2 for details about the Code.
\textsuperscript{395} See Chapter 1 for details.
deserves special attention since it exemplifies how child labor became more preferable as a form of employment when the production process allowed the authorities to do so.

The Factory, which produced sails and ropes for the Ottoman navy, operated until the early 1870s and almost entirely rested on forced labor, as spinning and rope-making did not require a labor force with artisanal-industrial skills. In other words, the most important requirement of the production process in the factory was the amount of labor power, rather than the quality of it. Thus, the state elites worried mostly about how to acquire the maximum number of hands, be they skilled or not. This mostly explains why such production processes were largely marked by the massive employment of women and children throughout the world, not only because they could be exploited more intensively than adult men, but also because they could be mobilized more effectively for a low-wage work under harsh circumstances. 396 Thus, it was not a coincidence that we find the most intensive level of child labor in a factory where the major concern for the authorities was how to mobilize as many forced workers as possible. Child labor was a preferable solution to this problem, not merely due to their lower wages and higher docility, but also because of the greater feasibility on the part of the government to draft and employ them, compared to adult workers.

The wage registers of the Imperial Yarn Factory in 1837 show that two different categories of child workers were employed in the factory. According to the wage register of

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396 By the 1860s, the silk factories in Bursa, one of the headquarters of Ottoman silk industry with around 7,000 workers, largely employed women and children. See Elçin Arabacı, "Kapitalizmin Victoria Çağında Bursa'da Hukuksuzluk, Müllksüzleştirme ve Bir Şehir Ayaklanması," in Tanzimat'tan Günümüze Türkiye İşçi Sınıfı 1839-2014: Yeni Yaklaşımalar, Yeni Alanlar, Yeni Sorunlar, ed. Mehmet Ö. Alkan and Y. Doğan Çetinkaya (İstanbul: Tarih Vakfı Yurt Yayınları, 2015). Khater, in his analysis on women silk workers in Mount Lebanon in the nineteenth century, argues that the overwhelming rate of women in the labor force largely emanated from the patriarchal culture that put the burden of proletarianization on women. See Akram Fouad Khater, ""House" to "Goddess of the House": Gender, Class, and Silk in 19th-Century Mount Lebanon," International Journal of Middle East Studies 28, no. 3 (1996).
October/November (Receb) 1837, there were 27 “boy soldiers of the naval troops” (neferat-i sibyanan-i asakir-i bahriye) and 74 “boy soldiers of the reserve troops” (neferat-i sibyanan-i asakir-i redife).\textsuperscript{397} It is most likely that these children were the conscripts drafted below the age of conscription by the local authorities, who concerned with filling their quotas for conscription assigned by the center, as was the practice before the Lottery Regulation of 1846. Employing these child conscripts as soldiers was against the law, but sending them back would cost time, money, and problems with the local authorities. The central government instead sought out to train these soldiers either as apprentices or in schools instead of sending them back until they reached the age of conscription.\textsuperscript{398} It seems likely that some of these child conscripts in the navy were sent to work as apprentices in the Arsenal or workers in the Yarn Factory.

Besides these conscript-boys, a considerable part of the labor force consisted of civilian Armenian children who were mostly brought from inner Anatolia and numbered 273 in November/December (Şaban) 1837.\textsuperscript{399} Kabadayı shows that non-Muslim boys, mostly Armenians from Anatolia, were forcefully mobilized to work in the Riştehane in the 1830s and official documents describe their conditions at work as “perishing”.\textsuperscript{400} These work conditions also explain the persistent complaints of the Armenian community, in response to which the government also decided to draft 100 boys each from Catholic and Greek communities in the mid-1830s, in order to alleviate the burden on orthodox Armenians. The correspondence on the subject reveals that the state authorities expected some form of resistance from these

\textsuperscript{397} BOA.D.BŞM.TRE. d.15713.
\textsuperscript{398} An example of this in the land army was a military school called Talimhane, which trained these children until the age of 15, when they would join the regular conscripts, see Ahmet Yaramış, "Osmanlı Ordusunda Çocuk Askerler Meselesi (Talimhane-i Sibyan)," \textit{Afyon Kocatepe Üniversitesi Sosyal Bilimler Dergisi} 8, no. 1 (2006).
\textsuperscript{399} BOA.D.BŞM.TRE. d.15716. In the previous month, the number was 240.
\textsuperscript{400} Kabadayı, "Working for the State in a Factory in Istanbul: The Role of Factory Workers’ Ethno-Religious and Gender Characteristics in State-Subject Interaction in the Late Ottoman Empire " 34.
communities as well, since neither Greeks nor Catholics had been asked to send their children before. Thus, the initial target for the draft would be the children of families with two or three boys (a principle that was also implemented in military drafts) and the children “who were orphaned and thus were in the service of someone else.”\textsuperscript{401} Although the register does not assign them a military status, other documents suggest that non-Muslim boys were drafted in the same way as military conscripts, by means of their patriarchs, and were to be replaced by their counterparts after 12 years of employment, the regular length of military duty in this period.\textsuperscript{402}

The wage distribution of the \textit{Riştehane} suggests that the employment of civilian children here could not be explained only by the cheap cost of their labor power. In effect, if we go through the same wage register, we see that these children were paid exactly the same wages (10 \textit{para}) as all other workers, except the regular Muslim troops whose boys received 15 and adults 20 \textit{para}. Considering that the major concern of the administration was not the level of skills but the scarcity of labor power, it is likely that drafting children from the provinces was the easiest and fastest way to overcome this shortage, since it was easier for the local authorities to draft children as opposed to the older members of local families, as the absence of those breadwinner members for a long period would be a significant blow to the livelihood of these families and thus incite more resistance from them.

The issue of accessibility also explains why these civilian children were drafted exclusively from the Armenian community, as opposed to the other communities. In those early years of the conscription campaign, the government did not opt for adding another burden on Muslims, who were already required to send the main share of conscripts. On the other hand,

\textsuperscript{401} BOA.HAT.1321/51599B (undated).
\textsuperscript{402} See BOA.A.]DVN.21/90, 2 Safer 1263 (20 January 1847) and BOA.İDH.126/6463, 22 Ramazan 1262 (13 September 1846).
Greeks were to be avoided as untrustworthy especially in the 1830s following the Greek Revolution. As a result, this equation left only the Armenian community in the provinces to be drafted for forced labor in the Riștehane. The reason that the Arsenal asked specifically for the children of this community can only be understood by highlighting the nature of the production process that encouraged the employment of children as well as the higher ability of the authorities to draft these children as opposed to adult subjects.

**The Naval School and the Commodification of Children’s Labor Power**

The industrial reorganization in the Arsenal and the history of the militarization of labor in the first two decades of the Tanzimat redefined the role of apprentices in the production process. The campaign to create a fully militarized labor force that could be trained and employed long enough to eliminate the dependence on skilled civilian workers had significantly failed by the time of the Crimean War. As a result, the Arsenal increasingly became dependent on civilian wage workers particularly during the two decades of industrial transformation following the Crimean War of 1853-56. The initial phases in the new reorganization largely rested on the employment of British workers, who, as we showed in the last chapter, threatened to undermine the government’s plans to militarize the labor force in the Arsenal. During this period marked by the increasing dominance of and dependence on civilian, including British wage workers, apprentices/children became a tool in the hands of the government to reinstitute the state`s control over the production process. An important result of this struggle was the increasing visibility and significance of the economic value of employing children in the Arsenal.

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403 See Chapter 2 for details.
In this way, the employment of children as apprentices started to take a capitalist form, that is, children’s function in the production process became more than simply the maintenance of the craft and its standards by training future masters. In parallel to the capitalist transformation of the relations between workers and the state in the Arsenal, the state elites primarily saw in employing children a way to profit from labor, by extracting more surplus out of the labor process. However, this transformation took place still within the existing framework of the traditional apprenticeship system. Children continued to be employed as apprentices who would eventually replace their masters in the long run. However, the nature of relations between the master and the apprentice changed in this period. Now the apprentice was going to replace the master not to maintain the traditional relations that dominated the craft or the guild, but rather to offer a cheaper source of labor to the employer. In other words, although the employment of children as apprentices took place within the traditional discursive framework, the changing relations between the state and these children in the production process pointed out to the capitalist nature of these relations.

Before analyzing the transformation of these relations, we need to understand the role of apprenticeship in the early nineteenth century, especially its relation to foreign labor, since it is important to acknowledge both continuities and ruptures regarding the role of apprentices in the production process. The employment of foreign employees in the Arsenal was not new, nor was the goal to replace them with local ones. In parallel to the reforms led by Grand Admiral Küçük Hüseyin Pasha in the 1790s and the concomitant transformation of the Arsenal’s Chamber of Mathematics (Hendesehane), founded in 1775-76, into a full-fledged naval engineering school,
French engineers, who had been brought for the construction of vessels, were also appointed as professors to train students in shipbuilding.\textsuperscript{404}

Throughout the technological reorganization of the Arsenal by means of new machinery and production techniques in the 1830s and 1840s, training a local workforce who could run this machinery and engage with the new techniques became critical for the sustainability of the industrialization efforts in the Arsenal. The reason was more than the need to possess a skilled industrial labor force especially in the context of a growing number of factories. It was also meant to increase the leverage of the Arsenal’s administration against its workers by increasing the supply of skilled labor power, which would eventually curb the power of both foreign and local skilled workers against the administration in the workplace.

To begin with, the increasing number of British mechanics in the Tanzimat Era, who worked for higher wages and were more vocal for their wage-based discontent, invited the continuous intervention of the British government in Ottoman affairs, and thus alarmed the Ottoman authorities to decrease this dependence as soon as possible. The first efforts to train skilled mechanics in this regard were thus made through an existing institutional channel, the Naval Engineering School, called the “Naval School” (Mekteb-i Bahriye) after 1838. As the difference between a “mechanic” and an “engineer” was vague at this point, the mechanics, who were supposed to install and run the machinery, were initially trained by means of these schools. In 1843, three local graduates of the Naval School who had then been employed along with the foreign engineers in the Arsenal, were finally given certificates and upgraded to the status of zabit (officer). This meant that they would now be entrusted to run the steam engines in the

\textsuperscript{404} Kaçar, "Osmanlı İmparatorluğu'nda Askeri Teknik Eğitimde Modernleşme Çalışmaları ve Mühendishanelerin Kuruluşu (1808'e Kadar)," 115-17. On foreign engineers who were brought as part of reforms in this period, see Bostan, "Osmanlı Bahriyesinin Modernleşmesinde Yabancı Uzmanların Rolü (1785-1819)."
factories and on the ships on their own, a task which so far “was entrusted to foreigners.” In other words, the primary reason for training these officer-mechanics was to replace these foreign masters.

Furthermore, the limited number of local mechanics proved to be threatening for management purposes as those local workers used this dependence to their own advantage, by pushing for wage increases. In 1844, local mechanics serving in the Arsenal asked for a wage increase after their counterparts on the ships were given raises, from which they were excluded. The mechanics wrote a strongly worded petition in which they threatened to go and complain to the Sultan if their demands were not met. Eventually they were given the raise, not only due to the effectiveness of the threat “to go to the Sultan”, an oft-used strategy among the subjects in negotiating with the bureaucratic authorities. The bureaucratic correspondence that accepted the wage increase highlighted the Arsenal’s dependence on these local workers, as their alternatives were foreigners who would demand far higher wages for the same task.

The increasing economic burden led by the scarcity of skilled local labor created a pressure on the Arsenal administration to not only train skilled local workers but also get the most out of the existing ones. The latter meant more exploitation of especially the students of the Naval School, who apparently were obliged to work in factories and shipbuilding, under the cover of practical training. This came at the expense of their theoretical training, however,

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405 BOA.İ.DH.75/3727, 9 Rebiülevvel 1259 (9 May 1843).
406 Training local mechanics, however, did not eliminate dependence on foreign workers, especially in tasks that required a specific experience. For example, when the Naval Council decided to replace six British mechanics with the local graduates, which would save the Ottoman navy for around 2,800 piasters a month, it did so on the condition that the British would continue to be paid until the new machines of two other ships were installed and set to run. See DMA.ŞUB.9/165b-166a, 5 Cemaziyülahir 1266 (18 April 1850).
407 BOA.İ.MSM.16/344, 28 Şevval 1260 (10 November 1844). Especially in war time, this limited availability of local mechanics increased the leverage of British workers as well, who were well aware of the Arsenal’s dependency on their skill. See Chapter 3 for examples.
leading to their continuous resentment and complaints. In 1847, the students who were employed in mechanized factories as part of their training to become engineers, grew vocal about how their work started to hinder their military career in the navy. They complained that they could not have time for their examinations, which they needed to upgrade and graduate from the school. As a result, the administration decided to introduce arrangements to the ongoing reform efforts for the Naval School, triggered by the concern to train officers who would be skilled enough to work both in steamships and in factories and shipyards, being mobilized for the ongoing technological transformation in the navy.\textsuperscript{408}

Training skilled officers for production was particularly important for the overall militarization plan in the Arsenal, which would enter a new phase in 1850, when the government decided to discharge all civilian workers to save on wages by increasing the number of industrial battalions in their place. In this way, according to the plan, the Treasury would save a considerable amount of money. The increase in the number of battalions, however, would also increase the demand for officers who would oversee these battalions. Thus, the Naval School, as the only school to raise officers for the navy, came to acquire a special role in the militarization plan, as they would be the representatives of the administration not only for the surveillance of workers, but also for the strict control over the labor process. Thus, the militarization plan in 1850 also proposed that as the practical training of the students should start much earlier, the first grades of the Naval School should be sent to these industrial battalions in order to learn and improve their crafts, and then, following their graduation, be appointed to these battalions as officers.\textsuperscript{409}

\textsuperscript{408} BOA.C.BH.128/6223, 19 Muharrem 1263 (7 January 1847). See also Bal, "XIX. Yüzyılda Osmanlı Bahriyesi'nde Gemi İnşa Teknolojisinde Değişim: Buharlı Gemiler Dönemi," 228-30.
\textsuperscript{409} A.AMD.18/2.
These efforts proved to be insufficient to meet the labor demands of a large-scale industrial transformation. The Naval School had hitherto been designed as an elite school to train officers for the Ottoman navy, rather than regular factory workers. In effect, the main goal of these students was to become naval officers, and thus only those who failed in their exams to join the navy were supposed to remain in the factories.\(^{410}\) Especially when the required number of mechanics increased following the Crimean War, the number of these students proved insufficient to meet the demand for skilled industrial labor. As a result, in 1856, for example, the administration ordered 60 civilian apprentices to be employed in the factories.\(^{411}\) At this point, it had become obvious to the Ottoman elites that neither the traditional way to train skilled workers through apprenticeship nor training them through the Naval School could address the need to create a labor force out of which profits could be made. Thus, the time had come to design a new framework to bring labor under the absolute control of the Ottoman state’s interests.

It is crucial to underline, once again for the sake of this chapter’s argument, the connection between the government’s failure to completely militarize the labor force and the redefinition of children’s role in the production process, as the exclusive focus on the employment of children could mislead one to conclude that children continued to be employed as apprentices in the traditional way. Indeed, at first sight, nothing seems to have changed even throughout the industrial transformation of the Tanzimat Era. Children were now assigned to the apprenticeship of these British masters, and they were expected to replace their masters just as apprentices had always been expected to do so in different crafts for centuries. A superficial look

\(^{410}\) Bal, "XIX. Yüzyılda Osmanlı Bahriyesi'nde Gemi İnşa Teknolojisinde Değişim: Buharlı Gemiler Dönemi," 229.
\(^{411}\) BOA.A.MKT.MHM.103/42, 11 Rebiülevvel 1273 (9 December 1856).
at this relation would suggest that this traditional phenomenon continued into the industrial era, with no essential change in the relationship between master and apprentice.

However, the difference was essential. Until this period, the apprentice’s role was to simply replace the master, with the same set of skills and experience to maintain the same level of productivity and thus the same level of artisanal control in the production process. Even the New Age reforms that reserved a specific quota for apprentices in the labor force simply aimed to ensure the regularity of the labor force by raising workers for the future and maintaining the productivity of current masters by transferring their skills to the next generation. The main goal, in other words, was the continuity of production at the same level of productivity and standards. The assignment of apprentices in the Tanzimat Era, on the other hand, aimed not only at maintaining the stability and the skills of the labor force, but also at making it more profitable by suppressing the cost of labor and by increasing its productivity through military-industrial discipline. In other words, it aimed to create an industrial proletariat in harmony with the necessities of modern capitalism. In a context which proved the inadequacy of modern conscription for this purpose, the administration employed another tool of modern state-formation, a tool that, just like conscription, theoretically was to serve the creation of modern “citizens” for a modern nation-state: public schools.412

The Boys’ Companies in the Imperial Arsenal

Immediately after his enthronement in 1861, Sultan Abdulaziz launched his naval program to construct a competitive and powerful navy, marked by the almost exclusive investment in

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412 For a comprehensive study on educational reforms and the increasing expansion of public schools in this period, see S.Akşin Somel, The Modernization of Public Education in the Ottoman Empire, 1839-1908: Islamization, Autocracy, and Discipline (Boston; Leiden: Brill, 2001).
steamships and ironclads with the help of foreign credits. As part of this program, new factories were built, existing ones were renovated and/or mechanized, and a higher number of (native and British) wage workers were recruited into the Arsenal. Aside from the construction of new ships (including an ironclad) and renovation of the existing ones with steam power, several ships were bought from Britain, the continuous maintenance of which soon became a major concern. This dramatic and ambitious program eventually made the question of productivity a major issue for the Arsenal administration. In order to competitively catch up with the naval powers of the world, in the context of limited availability of financial and material resources, a mere increase in the size of labor power and machinery was not sufficient. The workers themselves had to be skilled and disciplined enough to address the problem of efficiency in the production process. The administrators were well aware of the fact that simple artisanal skills would not be enough. Rather, the workers needed to be trained in new technical skills and machinery, and they should be able to develop and adapt their skills to the continuously changing technologies in this period. Thus, aside from expertise in these new tools and techniques, they should be ready to learn new ones, and thus have the basic background to do so.

Within the context of this full commitment to the capitalist production regime, which initially increased government’s dependence on local and foreign civilian workers due to the partial failure of militarization, the Ottoman elites had to create a new system through which industrial workers, with the set of skills as required by this regime, could be employed for lower wages, for longer terms, and under strict military discipline, thus eliminating this dependence in the long term. The institutional answer to this question was the establishment of the boys’ companies (sibyan bölükleri) in the Arsenal, which would take the name of “idadi”, high school in Ottoman Turkish, underlining their function as a form of industrial school for the military.
The Ottoman state authorities did not need to look far to find out an answer to this question, as there was already an institutional model to be adopted within the Arsenal. The past two decades of the Industrial Battalions, now being interchangeably referred to as the Industrial/Labor Regiment (Sanayi/Esnaf Alayı), where soldiers were employed for at least eight years by the early 1860s, proved that organizing the labor force in a military format was successful enough to implant the required skills and discipline the Arsenal needed for production. In fact, correspondence on the establishment of the boys’ companies within the Industrial Regiment suggested that these battalions had been serving as “a sort of a school of practice” for Ottoman subjects to gain artisanal-industrial skills, which would help them make a living even after they left the military service.

Thus, almost two years after his enthronement, in 1863, the Sultan gave the first approval to the Naval Council’s proposal to form two boys’ companies within the Industrial Regiment, to serve as an idadi for these battalions, by recruiting the children of the poor families in Istanbul, excluding those in the provinces. According to the regulation (nizamname) of the boys’ companies, each of these companies would possess the same number as their counterparts in the industrial battalions. The officers in charge of overseeing the boys would be assigned from the industrial battalions, but the students would exclusively be drafted from the families residing in Istanbul. As opposed to the industrial battalions, the draft for these companies would be voluntary. Accordingly, their parents, or in their absence, close relatives would petition with

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413 This is in response to the increase in the number of industrial battalions from two to six by the end of the 1850s, as planned in 1850. Although originally a battalion (tabur) should consist of around 800 soldiers, the number of soldiers in these battalions could not achieve this number during most of the period, as proven by the wage registers. See Chapter 2 for details.
414 DMA.Env.650/3, 24 Şaban 1280 (3 February 1864).
415 BOA.İ.DH.519/35368, 6 Receb 1280 (17 December 1863).
documented evidence of their willingness to register their children, who would then be registered after they pass the medical examination.\footnote{416}{For the full text of the regulation, see DMA.Env.1824-54/55, 6 Zilhicce 1279 (25 May 1863).}

The children wouldn’t be younger than 13 or older than 16 when they first registered, and they would be assigned to a certain craft where they would be trained until the age of 18, when they would be transferred to the industrial battalions to serve their military duty, as naval conscripts, for another eight years. The \textit{nizamname} specified that the time they spent in these companies would not be deducted from the time they required to serve their military duty in the industrial battalions. Nevertheless, these children would have the same benefits with their adult counterparts in the battalions, such as uniforms, food rations (\textit{tayinat}) and in case of an accident that would obstruct their employment, retirement benefits, as well as a monthly salary (20 piasters).\footnote{417}{Ibid. Retirement benefits were of significance to the child workers. As we saw with children sent by the guilds in the first half of the century, job accidents that involved children were not infrequent, and compensation was not guaranteed. A petition dated 1861 from a former Haddad apprentice was exemplary in this respect. The petitioner, Mehmet, was discharged from the military a few years ago after two of his fingers were broken by a machine in one of the factories, signing a statement that he would not demand any compensation after he was discharged. However, in his hometown, he could not find a job due to his injury, and thus petitioned to be appointed as the head of police department in a town in Trabzon. A.MKT.NZD. 341/60. For more on the introduction of retirement benefits, see Chapter 5.}

Since in the industrial battalions, the most talented of these children could be elevated to the officer status in the future, their literacy was a must, and thus, imams would be appointed to help them gain literacy and teach religious courses at nights. In a way that underlined the school’s mission to raise citizens with industrial skills, at the end of their military service, if they wanted to leave the military, they would be given the necessary equipment to continue their crafts. The \textit{nizamname} also offered them the option to be automatically transferred to the ships, if they wanted to.\footnote{418}{DMA.Env.1824-54/55.}
The Naval Council’s decision underlined that these companies would be of relief to the poor and orphaned children in Istanbul. This highlight is particularly important as it explains both the feasibility of establishing these battalions and the way such battalions would serve the socio-political interests of urban classes during this period. The two decades following the Crimean War of 1853-56 were marked not only by the debt crisis of 1875 and the Ottoman-Russian War of 1877-78, but also a severe famine between 1873-75 that killed tens of thousands in Central Anatolia.\footnote{See Özge Ertem, "Considering Famine in the Late Nineteenth Century Ottoman Empire: A Comparative Framework and Overview," \textit{COLLeGIUM} 22, no. 9 (2017).} As refugees and immigrants started to flow into Istanbul and other Ottoman territories in large numbers, urban poverty started to become particularly visible in this period. This phenomenon was especially critical in paving the way for the formation of such initiatives that targeted the voluntary recruitment of children into military status, and helped them survive in the long term. In the absence of a large number of poor in the city, these companies could not be upheld, as there would be little incentive for the city’s residents to join them since they were already exempt from conscription by law. Thus, the new system could only rest on a high number of indigents and orphans, who would have no choice but to join the ranks of the military to survive.

This urban poverty turned into a crisis especially in the eyes of the urban elites, whose relatively isolated urban life was severely disturbed by refugees and immigrants with the increasing visibility of poverty, vagrancy, and petty crimes in urban spaces. As Maksudyan pointed out, during this period, unattended children who were not at school or work and thus labeled “vagrant” started to become a major target of concern and fear for the urban elites, as their vagrancy was seen as a potential threat for urban life.\footnote{Maksudyan, \textit{Orphans and Destitute Children in the Late Ottoman Empire}, 85.} Thus educating and disciplining
these children and turning them into productive citizens in line with their modernist ideals of “order” became a priority for the Ottoman state elites. Beginning in the early 1860s, several orphanages were opened throughout the Empire for this goal, and both in Istanbul and the provinces the newly forming police forces were assigned to collect these vagrant children to be sent to these orphanages and vocational schools. 421 Like orphanages, the industrial battalions in the army and the navy also offered an institutional response to the overall concerns of the Tanzimat statesmen to raise citizens through a public education system that particularly emphasized the importance of technical-vocational training in the curriculum.

Efforts to Replace British Workers

The availability of poor children in Istanbul did not only serve the socio-political interests of the Ottoman elite, but perhaps more importantly, also their economic interests, as boys’ companies offered a far cheaper source of labor, both in the short and the long term, compared to civilian wage labor. Thus, the concern to replace the British was a central concern in the formation, and later expansion of these companies. In 1868, for example, a new class of riveters (perçinci), consisting of 27 students, was formed within the boys’ companies. Just like other boys in the companies, these would be recruited from among children aged between 12 and 18 in Istanbul, with a daily wage of 60 para (one and a half piasters) for those below 16, and two piasters for the ones between 16 and 18. The proposal for the formation of this class referred to the “benefits” of having such a skilled class of local workers both for the state and the country (memleket), aside from the economic value of replacing British workers with locals for decreasing the labor cost in the Arsenal. Again, like other boys, they would gain literacy and basic religious education until

421 Ibid., 88-89.
the age of conscription. The only exception for them was that “they should not be made to work for more than six-seven hours in daytime,” due to the intensity of working with iron, as the absence of such a limit could “be harmful for their health.”

Another critical arrangement along the same lines was made with the apprentices who had already been assigned with the mission to replace their British masters. The Haddad (blacksmith) apprentices, who were assigned to the British mechanics to raise local mechanics in ships and factories, were reorganized into a company with the same edict in 1863. The reform basically systematized the training of these apprentices, at the end of which they would graduate as officers in the rank of mülazım (lieutenant). Originally the company was designed to have two idadi grades and 4 haddad grades. Like the boys’ companies, the haddad idadisi aimed to provide the children literacy and basic religious education, whereas the next four years would be reserved for technical training to raise mechanics. However, a year later, in 1864, the Naval Council, with the Sultan’s approval, decided to increase the length of training in haddad classes from four to five years, since the four-year training was found insufficient for graduating mechanics. The company, excluding the idadi grades, had 80 students at this point, distributed to five grades, with each grade being assigned a specific quota and monthly salary. Aside from their salaries, these students were also given daily wages, between 20 and 40 para, same as the conscripts. According to the table attached to the document, the grades and their salaries would be distributed as follows:

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422 BOA.İ.DÜİT.185/89, 29 Safer 1285 (21 June 1868), and BOA.A.MKT.MHM.413/8, 20 Rebiülevvel 1285 (11 July 1868).
423 The reason that these apprentice-mechanics were called by “haddad” (blacksmith) or identified with “haddehane” (the Rolling Mill) was, according to Alpagut, that their barracks were located closeby the Rolling Mill. See Alpagut, Marmara'da Türkler, 147. Another possible reason is that, aside from the fact that the Rolling Mill was the first steam-powered factory, and thus the first place the apprentice mechanics worked in the 1830s, most of the master mechanics, including the chief engineer James Herdman, were blacksmiths (see Chapter 3).
<table>
<thead>
<tr>
<th>Grade</th>
<th>Number</th>
<th>Salary (piasters)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>20</td>
<td>45</td>
</tr>
<tr>
<td>2</td>
<td>18</td>
<td>60</td>
</tr>
<tr>
<td>3</td>
<td>16</td>
<td>80</td>
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<td>4</td>
<td>14</td>
<td>120</td>
</tr>
<tr>
<td>5</td>
<td>12</td>
<td>180</td>
</tr>
</tbody>
</table>

The **Haddad Company in 1864**

The *idadi* students who numbered 200, on the other hand, were divided into two grades, with 155 students reserved for the first, and 45 for the second grade. They were most likely paid the same amount of as their *sanayi* counterparts, 20 piasters.\(^{424}\)

Considering the decreasing number of spots with each grade, it seems that the system was trying to inculcate a sense of competitiveness among the students. Thus, simply passing the exams was not enough to be upgraded in these classes. A student should also be able to supersede their fellows in order to acquire one of the fewer places in the superior grade. This competition was particularly harsh in the *idadi* classes, where only less than half of the students could pass to the next grade. Apparently, this system led to a serious discontent among the students, which played against the competitive characteristic of the system, as students were found to be discouraged by the fewer spots available in the upper grades. This was cited as a main reason behind a revision made in 1868, in addition to the reason that the system could not produce sufficient number of local mechanics to meet the increasing demand for such workers in the Arsenal. Thus, in the new system, the *idadi* classes were divided into 65 and 55 students, whereas the five grades of *Haddad* company were distributed more equal spots (45, 35, 30, 25, 25 respectively). In this way, the proposal for revision argued, the students would have more incentive for working hard, and the Arsenal would acquire a much more number of officer-mechanics soon enough.\(^{425}\)

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\(^{424}\) BOA.İ.DH.530/36735, 10 Cemaziyülahir 1281 (10 November 1864).

\(^{425}\) BOA.İ.DH.576/40154, 22 Safer 1285 (14 June 1868).
Just like the conscript workers in the Industrial Battalions, these boys’ companies were seen as a means not only to train local mechanics, but perhaps more importantly to decrease dependency on civilian wage workers, whose existence in the labor force caught the eyes of the authorities especially in the 1870s, when financial difficulties increasingly threatened the rate of production in the Arsenal with civilian workers going on strikes to demand their unpaid wages. In 1873, when the government decided to add one more battalion to the industrial battalions, it also added one company to "the industrial boys’ companies that are a school of training for the mechanics’ class," apparently referring to the Haddad classes. It was not a coincidence that this increase came in the same period when the Arsenal began to discharge British mechanics due to their costs. The decision, in justifying these increases, referred to the need for "training skilled men" because of the increasing intensity of industrial tasks that required such workers. It argued that the battalion and the company, by replacing civilian workers, would not only help the Treasury to decrease the cost of labor and save a considerable amount of money. They would also help the Arsenal to "totally eliminate the necessity to hire workers with high wages" in the future.

The concern to train local mechanics did not remain limited with these military classes. During this period, another haddad class of civilian students, who would not be conscripted after graduation, was also opened. It consisted of six grades, with the same goal of replacing British mechanics with local ones. According to the original arrangement, the first classes would not be paid, and from the second class up until the sixth class, their wages would increase as they were upgraded in the school. Upon graduation, they would be transferred to the “English register”, thus their wages would be significantly increased. A register of 61 students from the year 1868 shows

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426 BOA.İ.DH.667/46467, 29 Rebiülevvel 1290 (27 May 1873).
427 Ibid.
that at least 31 of these students have non-Muslim names, and their wages, even within the same class, differed according to their skill, experience and/or age.  

Why did the authorities need to open civilian classes for training mechanics? The answer was probably to be able to attract those children of Istanbul residents who did not want to join the military for a considerable period. The documents concerning reform in these classes in 1868 clearly state that the primary goal with these “boy-workers” (sibyan amelesi) was to raise Muslim mechanics, although non-Muslims would be admitted as well. In a short while, however, non-Muslim families proved to be more interested in sending their children to this school. In fact, it was this failure in accomplishing the goal to train Muslim mechanics, in the eyes of the officials, that prompted reforms in these classes. The number of Muslim students in the classes apparently did not meet the expectations of the authorities, as the proposal claimed that this distribution contradicted the original mission of this school. The proposal, arranged by the Department of Factories (Fabrikalar Nezareti) within the Arsenal, attributed the low interest from Muslim families to the practice of unpaid employment of first year students, since Muslims were supposedly poor compared to non-Muslim subjects (a discourse widely popular in the 1860s).

Thus, the proposal suggested a new arrangement, in which the wages of students in each grade would be fixed and equal, and the students would start with 1.5 piasters/day in the first grade and their wages would gradually be increased to 15 piasters/day in the sixth grade. It also decided to increase the total number of students to 100. Although the following year this measure was put into practice, the distribution of the first class that registered in 1869 suggests that having

428 DMA.Env.1897/2, 12 Cemaziyülevvel 1285 (31 August 1868).
429 This civilian class was also interchangeably called Apprentice Workers (Amele Şakirdani) or Civilian Haddad Apprentices (Başıbozuk Haddad Şakirdani) throughout different records in this period.
430 DMA.ŞUB.55/51a, 4 Cemaziyülevvel 1285 (23 August 1868).
an overwhelmingly Muslim cohort was a long shot. Out of the 24 students who registered to the first class, at least half of them had non-Muslim names.\textsuperscript{431} By 1871, the number of these civilian students was still 89. Apparently all of them were trained by the British, as they were all concentrated in the two factories dominated by them. 68 of these children were working in the Repair Factory, whereas the remaining 21 were working in the Yalıköşkü Engine Factory across the Arsenal, both of which focused on the production and maintenance of machinery.\textsuperscript{432}

Each year, their examinations were given by their masters, and if they succeeded, they were upgraded with a proportional increase in their wages, and at the end of their sixth year, they were transferred to the register for English workers, with a daily wage of 20 piasters.\textsuperscript{433} However, another document from 1873 suggested that this mechanism did not function as smoothly as it appeared on paper. According to the document, some of the recent graduates were not transferred to the English register, although they were employed for 20 piasters, and upgrading across the classes did not necessarily run one by one, as some first, second, and third year students were upgraded two classes. Also, it appears that only two students matriculated that year, and 17 students were registered. This document nevertheless underlines that the idea to transfer them to the British register was due to the primary mission of these classes to replace British workers.\textsuperscript{434}

**From Companies to Battalions**

The financial crisis in the mid-1870s, worsened by the Ottoman-Russian War of 1877-78, left the Ottoman government in a most-challenging situation regarding the employment of workers in the

\textsuperscript{431} DMA.Env.1897/2,4,5, and 8; Env.650-44, 6 Cemaziyülahir 1285 (24 September 1868); and ŞUB.55-51a.

\textsuperscript{432} DMA.Env.742 for Nisan 1287 (April/May 1871).

\textsuperscript{433} DMA.ŞUB 54/166a, 19 Şevval 1287 (12 January 1871).

\textsuperscript{434} DMA.BN 207/5320, 28 Rebiülahir 1290 (25 June 1873).
Imperial Arsenal. On the one hand, a particularly severe refugee crisis erupted especially in the capital, marked by the dramatic visibility of poverty, unemployment and the establishment of orphanages, making the Imperial Arsenal one of the few havens of employment in the city, as much of the industry came to a halt in this period. On the other hand, however, the state`s ability to pay wages, as we saw in the previous chapter, was curtailed by the financial challenges caused by the war and the moratorium, which led to strikes in this period.

The industrial battalions, which had been employed as a tool against civilian wage labor, were negatively affected by the decreasing length of military service from 10 years in the 1840s to five years by the early 1880s, as well as their decreasing number due to the war and to the dramatic reduction in industrial production in the Arsenal after the crisis. During this time, British workers became less of a challenge, as they were overwhelmingly discharged during the crisis. Thus, the major challenge before the Ottoman state elites was more than a mere replacement of the British. First, they wanted to decrease dependence on civilian workers by extending the term of military employment. Second, within the industrial battalions, they wanted to increase the number of children at the expense of adults, since, by the 1880s, the role of skilled and experienced labor became less important due to the decreasing industrial production in the Arsenal as the internal and external crises led the Ottoman government under Sultan Abdulhamid to decrease investments dramatically. Now, the Arsenal needed a labor force committed not to the expansion but to the mere maintenance of the navy. Thus, the labor force had to be restructured and reorganized according to this context marked by a drained treasury to pay wages, reduced and limited industrial activity, the decreasing availability of conscripts, and the increasing availability of poor and orphaned children in the Empire, who would be dependent on wage labor. The solution would save more for the Treasury on the one hand, and would still
continue the commitment to raise citizens with industrial skills against the problem of urban poverty and unemployment in the long term.

Again, as had been the case two decades earlier, the administration found the solution from within, by expanding the role of boys` companies into battalions, relying on their proven success in the last two decades. In April 1882, the Naval Council took a decision to expand the role of boys` companies by replacing two of the four industrial battalions with a boys` battalion in the Arsenal. In its proposal, the members of the Naval Council, following their counterparts two decades ago, underlined the success and usefulness of the industrial battalions, though with a caveat this time. The proposal underlined that the conscripts in the industrial battalions gained skills and experience in industrial crafts, which took at least three to four years, and upon their release they continued to practice these crafts in their hometowns. This, of course, was a major service to the public, according the Council, but it severely disrupted the industrial production in the Arsenal, since they left the Arsenal almost as soon as they gained the required skill and experience, and were replaced by unskilled and inexperienced conscripts. In order to break this vicious cycle, the Council pointed out to the three boys` companies in the Arsenal, which proved to be successful in both raising industrial workers that were available for the Arsenal for a long period and serving the public by recruiting the poor and orphaned children.

The Council proposed the formation of a battalion exclusively from these boys, with eight companies each joined by 60 children. Since one boys` battalion and two industrial battalions would be sufficient for industrial activity in the Arsenal, the Council argued, the remaining two industrial battalions could be dissolved. In the attached document which calculated this saving, the current number of 2,713 soldiers (four industrial battalions and three boys` companies) would be reduced to 1,788 soldiers (one boys` battalion and two industrial battalions), and thus the Treasury could save almost 1.5 million piasters for the cost of their wages, rations and uniforms.
In addition to this economic benefit, these battalions would also serve the “industrial progress” of the Empire and as an exit for “children who were left unattended and in poverty since there were not many industrial factories in Istanbul, unlike Europe” to employ them. The proposal was approved by the higher commission and the ministry, who highlighted both the social and economic benefits of this initiative, with the only adjustment that the minimum age be held flexible between 12-14, rather than only 13, in order to facilitate recruitment.

Only a year later, this time the Manufacture Commission in the Imperial Arsenal proposed to expand this initiative with a second boys’ battalion, to consist of Haddad students in the factories, who would replace another battalion of conscripts. In the correspondence on this battalion, the same reasons and benefits were highlighted to justify the expansion of the role of these battalions, who would serve at least 12 years in military service. The correspondence provides us with further proof of the commodification of children’s labor power through these battalions in two ways.

On the one hand, it reveals the explicit goal of this initiative to make use of the increasing number of poor and orphaned children in this period as urban proletariat, who would be dependent on wage labor. Both the Commission and the Naval Council that approved this proposal suggested that as the children would mostly be recruited from the poor refugee children in the capital, even after their release at the end of 12 years, they would have to continue to work in the Arsenal, either in military or civilian status, as opposed to conscripts who immediately went back to their hometowns. In other words, the administration was capitalizing on the recent refugee flow during and after the Ottoman-Russian War of 1877-78, when almost two

435 BOA.Y.A.RES.15/34, 24 Cemaziyülevvel 1299 (13 April 1882).
436 BOA.Y.MTV.8/47, 3 Rebiülevvel 1299 (23 January 1882).
437 BOA.Y.MTV.11/74, 3 Şaban 1300 (9 June 1883).
438 Ibid.
million Muslims from the Balkans and Russia arrived in Ottoman territories, leading to a “chaos” especially in Istanbul.439

Related to this goal, on the other hand, it revealed how these battalions were the ideal way to decrease the Arsenal’s dependence on hiring skilled workers from among the civilians. In justifying the addition of another boys’ battalion to the existing one, the reports explicitly stated that these battalions, by training skilled workers in different crafts, would “eliminate the necessity to hire skilled masters from outside” of the Arsenal, i.e. from the market, thus serving to the “interests of the Treasury” (menfaat-i Hazine). This was crucial not merely due to the increasing inability of the Treasury to pay the wages of civilian workers properly, but also due to the increasing conflicts between the Arsenal and its civilian workers due to the latter’s collective actions to receive their wages in arrears.440 Indeed, perhaps the most important catalyst in the decision to expand the role of children in the production process was the dragging crisis with the timely payment of civilian workers’ wages, which had turned into a crisis of governmentality with workers’ strikes, in the previous decade. In other words, children’s labor power became a very critical tool in the hands of the Ottoman government in the class struggle between the workers and the state.

In response to this proposal, another boys’ battalion was finally launched with an edict in 1887.441 The decision particularly emphasized the increases in production after the era of financial crisis, marked by the construction of five new factories, including a torpedo factory, as

440 BOA.Y.MTV.11/74.
441 DMA. BN.27/372-1, 6 Rebiülahir 1304 (2 January 1887). For memos on the budgetary calculations and curriculum, see DMA.BN.27/372-1 and 2.
well as the purchase of new machinery, again from Europe.\textsuperscript{442} In spite of these efforts, however, the number of workers was inadequate, since most workers preferred to work in the private sector for higher wages, which forced the administration to make workers, including children, work at night. Thus, according to the decision, the new battalions would not only decrease the Arsenal’s dependency on civilian workers, but would also prevent the Arsenal from “resorting to foreigners” for skilled labor. As a result, the edict ordered the establishment of a new boys’ battalion to be employed in the factories, by adding 100 to the existing 280 Haddad students in the Arsenal. Besides the edict also ruled to increase the number of boys in the first battalion to 800, by adding another 160 boys.\textsuperscript{443}

Raising a Working Class through Military-Industrial Discipline

In this period, a bill (\textit{layiha}) was prepared in 1882, for the first battalion, known as the Boys’ Battalion for Industry (\textit{Sanayi Sibyan Taburu}), in order to regulate and coordinate the battalion’s administration by the officers in charge, explaining and detailing their specific duties in this regard.\textsuperscript{444} In addition, for the second battalion to be employed in factories, which was called the Boys’ Battalion for Manufacture (\textit{İmalat Sibyan Taburu}), a \textit{nizamname} (regulation) was issued to regulate these battalions.\textsuperscript{445} Both the \textit{layiha} and the \textit{nizamname} provide us with important

\textsuperscript{442} These efforts proved to be short-lived, as an observer in 1905 referred to “unpacked” machines from “twelve years ago.” See “Tershana-A Turkish Shipyard,” \textit{The Engineer}, 8 December 1905. This was most likely due to ongoing financial problems in this era, as well as political choices. For an overview of the state of the navy, including the Arsenal, under the reign of Abdulhamid II, see Batmaz, “II. Abdülahmid Devri Osmanlı Donanması.”

\textsuperscript{443} DMA.BN.27/372-1. For the numbers of children in both battalions throughout the 1890s, see the tables in Batmaz, “İI. Abdülahmid Devri Osmanlı Donanması,” 83–87.

\textsuperscript{444} See DMA.BN.27/372-4, 5, and 6, 6 Safer 1300 (17 December 1882). See also BN.27/372-3 for their curriculum.

\textsuperscript{445} Although it is issued under the title of “The Regulation for the Boys’ Battalion for Manufacture,” the final sentence of the text underlines that the articles should also be applied to the one for Industry, with the only difference being that the soldiers in Industry could spend the final three years (reserve service) wherever they wanted to serve, whereas the Manufacture boys had to spend it working in the Arsenal. The
information about the training and disciplining of these children in order to prepare them for their employment in the industrial battalions.\textsuperscript{446}

According to the regulation, a boys’ battalion would consist of eight companies, each of which would ideally have 100 soldiers. The battalions would admit children from all over the Empire, including the capital, who applied voluntarily, with the permission and petition of their parents, and with the approval of the government if they were orphans. The minimum age was 12 and maximum 15. After a medical examination approving their fitness to join the military, the boys would also take a placement exam, and subsequently placed in the appropriate grade. The first half of the ten-year military service, which corresponded to the ‘\textit{idadi}’ in the previous system, would have five grades. The first one would exclusively be for the illiterate children, who would be taught letters and basic courses on religion. Regardless of the grade they were placed in, they would have to spend five years in training before they were transferred to the industrial battalions. After spending five years as “boys”, they would start to work as “industrial soldiers” for another five years. They would then be transferred to the reserve for which they were expected to work another three years, though with a much higher wage.\textsuperscript{447} At the end of 10 years, they would receive a certificate which proved their training in a specific craft, and in case the Arsenal needed to recruit civilian workers, those with such certificates would be favored. Those difference was most probably due to the lower availability of skilled workers for the tasks in manufacture.

\footnotetext[446]{For the full text of the regulation, see "\textit{No:188-Daire-i Bahriye İmalat Sibyanı Taburunun Sureti İdaresine Dair Nizamname} (6 R 1304/21 KE 1302)," in \textit{Düstur, 1. Tertip} (Ankara: Başvekalet Matbaası, 1937).}

\footnotetext[447]{In cases where some of the articles of the \textit{layiha}, prepared in 1882 specifically for the first battalion, conflicted with the relevant ones in the \textit{nizamname}, I followed the latter as, in addition to the above-mentioned final note at the end of the regulation (see ibid., 757), it was prepared three years after the \textit{layiha} and was an officially published document, contrary to the intra-bureacratic characteristic of the former.}

\footnotetext[Ibid., 746-47.]{The regulation is not clear to what extent the employment in these last three years in reserve status was compulsory, as it literally says that “employment for 10 years is compulsory and work in the reserve class for three years is natural (\textit{tabii})”. Since the last sentence stated that the boys in industry could spend the three years “wherever they want to serve”, it seems that this was a requirement only for those employed in factories, as part of the Boys’ Battalion for Manufacture.}

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who were injured at work, and as a consequence could not graduate, would be entitled to retirement wage as compensation. Except for such cases, children would not be allowed to leave their battalions unless they paid back the cost of their training, in line with the regular practice for other military schools in the Empire. 448

The wages were distributed according to their grade which would be determined by an annual examination. Regular classes consisted of 10 grades, with additional three grades for the reserve classes. The first grade, who would not be employed since they would focus on gaining literacy, would not be paid. The second grade would start with 20 para (0.5 piasters), which will be increased 10 para (0.25 piasters) per grade, up until the 10th grade, who would receive 2.5 piasters. In the reserve class, on the other hand, a worker would start with 4 piasters for the first one, 5.5 for the second, and 7 for the third. Aside from their daily wages, all of them, including the first grade, would receive salaries and uniforms, like other soldiers. They would take a general exam each year, which they would have to pass to qualify for the next grade, as well as private exams to measure their progress within the year. The first grade would only take a written exam, boys in other grades would take both the written and practical exams, and the conscripts would only take the practical ones, as they would not take courses after they finished the boys` section. 449

As such, the boys` training would be divided into didactic and practical courses. For the former, in morning and night classes, they would take basic courses on religion, grammar, mathematics, and geography. In the practical part, during the workday, they would learn the crafts which they were most talented and interested in, under the supervision of masters. The layiha of 1882 specifically ordered that the children should be assigned to the best masters of

448 Ibid., 756.
449 Ibid., 750-52.
their craft, who should put their best efforts to have their children learn their craft ahead of those of other masters, encouraging competitiveness between the masters in this regard.450

These crafts, as listed by the nizamname, mostly referred to the tasks concerning iron and copper works, reflecting the history of industrial transformation that was discussed in the previous chapter, although the list included a few traditional crafts, such as caulkery as well. This was important, because it points out to the dominance of an increasing division of labor, which characterized the capitalist production regime. The nizamname underlined that although there were also other crafts employed in the Arsenal, the children would not practice them, as they were irrelevant outside the Arsenal and thus would not be useful to the workers, after their release from the military service.

This was in harmony with the goal to train industrial workers not only for the Arsenal, but also for the overall industrial transformation at the imperial level. For this goal, the battalions were not only introducing the capitalist form of industrial organization, as characterized by a specific division of labor within the same workplace, which further alienated the worker from the final product. The capitalist labor regime required a strict time-discipline, obedience to the hierarchically organized factory management, and dependence on the synchronized production of workers assigned with different tasks in the factory. As such, it required a different form of culture and discipline compared with the autonomous labor process of an artisan. Through constant training and practice in a specialized task for at least ten years, the boys’ battalions, together with other industrial battalions, served to implant a capitalist industrial culture by their commitment to create workers who would normalize time-and-work discipline and the capitalist organization of production. Thus, disciplinary arrangements, which may initially seem to concern

450 DMA.BN.27/372-4.
military discipline in these battalions, were ultimately serving to discipline the labor process and
the laborer as required by the capitalist production regime. Let us analyze how this discipline was
inculcated under military supervision, by reconstructing first the daily routine of these boys,
based on the nizamname and the layiha.

A day in the Boys’ Battalions started with the morning prayer, which would be followed
by their breakfast and morning study. Two hours before the noon prayer, they would be gathered
by their officers with a trumpet to be sent to the drydocks, factories and workshops. Under the
supervision of the officers, they would then march to their workplace, their youngest ahead of the
group in a strict discipline, during which they were not supposed to talk to anybody outside or
with each other, and without making any noise. During the march, the boys would be distributed
to their specific workplaces by the officers, who would turn them into the masters that would be
in charge of them during the workday. The boys were supposed to work at least five hours in
winter and six hours during summer (April to November). At the end of the workday, they would
be collected back one by one by the officers in charge, again in strict military discipline. After
they were discharged, and back in their barracks they were to eat their dinners, which would be
followed by a 45-minute break outside the barracks, during which they would play games
“appropriate to childhood” and sometimes gymnastics under the supervision of their officers. At
the end of this break, attendance would be taken and they would pray for the Sultan. With the
“ablution trumpet” they would go to observe their evening prayers, at the end of which all of
them would be sent to their classrooms. On Thursdays and Fridays, they would not go to work.
Thursday was the day of cleaning, having a haircut, cutting their nails, having their clothes
washed, and then for two hours afternoon, they would have training for marching and using
swords or rifles. On Fridays, after the breakfast, they would don clean uniforms (for the Friday Prayer), and those who wanted to go outside would do so under the supervision of officers.\textsuperscript{451}

A number of measures were taken to inculcate time and work discipline in these students, particularly by directly connecting their discipline to their wages. Those who worked less than their specified workday hours were not entitled to receive their wages. But working full time was not sufficient for this entitlement neither. The students who attended their classes would be given a white badge and those who completed their workday would be given a yellow one. Those who were found to be particularly hardworking in their classes would be given two or even three badges from each. At the end of the day, those who could not present two badges, white and/or yellow, could not receive their wages. These badges were also important if a student was sentenced with imprisonment that day, as they would have to work for free unless they had an extra badge that day. In addition, if they damaged the tools at work or tore apart their dark-blue work uniforms, their cost would be cut from their wages.\textsuperscript{452} As such, the battalions tried to implant a capitalist work culture, marked by their lack of control over the means of production and the labor process, which normalized the fact that they were paid not merely in return for their labor, but more importantly in return for the absolute submission of their labor power to the interests of those in control of the production process.

The \textit{nizamname} also outlined how this discipline would be enforced by means of punishment. It specifically detailed the immediate punishment meted out to those who deserted their barracks or work, those who did not obey or listen to their officers or masters, and those who acted improperly by fighting or cursing their fellows, or by smoking. According to the

\textsuperscript{451} DMA.BN.27/372-5
\textsuperscript{452} “No:188-Daire-i Bahriye İmalat Sibyanı Taburunun Sureti Ġdaresine Dair Nizamname (6 R 1304/21 KE 1302),” 753-55.
degree of his crime and its frequency a boy could be sentenced to three kinds of punishment: He could be sentenced to detention, for light misconducts, not being allowed to go out of the barracks during breaks or holidays; he could be sentenced to abstention from food, standing on one foot during the meal time, receiving only bread for food; or at the harshest level he could be imprisoned. Imprisonment, as mentioned above, did not keep boys away from work, but from their wages, which apparently aimed to give them the sense that the continuity of production and work was the most important thing. As part of this work discipline, desertion from work or the barracks was punished in the harshest way: Those who deserted were to be beaten with a stick, five to ten times, depending on the strength of their bodies, and then would be sentenced to detention for six months, in addition to a one-week abstention sentence. In case of repeated desertion, in addition to these sentences, the runaway would also be sentenced to imprisonment between three days and one month.\textsuperscript{453} Aside from desertion, disobedience to the masters or any other signs of misconduct and laziness that caused the assigned work to remain incomplete or improperly finished would be punished as soon as they were reported by masters.\textsuperscript{454}

A main aspect of work discipline was the normalization of the hierarchical organization of the labor process, marked by the absolute authority of the superiors in this process. Being upgraded in rank and wages by working hard and with complete discipline was a characteristic feature of not only the military organization but non-military industrial organization as well. Both in the barracks and at the workplace, children would be under the constant supervision of officers and masters. The internal officers, who would be in charge of their discipline in the barracks,

\textsuperscript{453} Desertion did not necessarily mean running out of the Arsenal, but running away from work in any way. An article of the layiha, demonstrating different ways of running away from work, instructed the masters to prevent the children from going to the seaside for fishing and gathering mussels, or washing their uniforms. DMA.BN.27/372-5.

\textsuperscript{454} “No:188-Daire-i Bahriye İmalat Sibyanı Taburunun Sureti İdaresine Dair Nizamname (6 R 1304/21 KE 1302),” 754-56.
were supposed to teach the children how to treat their superiors with respect. From the very beginning, the best boys in the companies with regard to hard work, intelligence and talent were given honorary ranks, both as an incentive for their work and to accustom them to the hierarchical military-industrial organization. As they were transferred to the battalions after five years, these ranks were converted to the actual ones, received according to their grades in annual exams. In case of an opening for the rank of lieutenants of the industrial battalions, these were also to be selected from among the best students in these companies.\textsuperscript{455}

\textbf{Conclusion}

This chapter has discussed the integration of child workers into the capitalist relations of production in the Imperial Arsenal throughout the nineteenth century. In doing so, it has underlined how the Ottoman state elites started to see their labor power as a valuable commodity compared to the labor power of especially civilian (including foreign) workers. Furthermore, it has also analyzed the central role the naval-vocational schools played in class formation by converting the urban poor into modern industrial workers and introducing the industrial-capitalist norms to Ottoman children through military discipline.

Until the mid-nineteenth century, the role children played in the production process was largely determined by a) the primary goal to create and maintain a regular body of carpenters and augerers, b) the compatibility of their limited level of skill and efficiency with the requirements of the production process, and c) the higher availability of children for recruitment compared to adult forced labor. The transformation of production process especially through mechanization highlighted the economic value of employing children, which was further revealed by the

\textsuperscript{455} Ibid., 753.
increasing dependency on civilian wage labor. This increasing commodification of child labor, nevertheless, remained limited due to the relatively slower tempo of industrialization in the first two decades of the Tanzimat, which allowed the transformation of labor relations to take place within the confines of the existing institutional structure, marked by the Naval School and the traditional apprenticeship system.

In the 1860s, when this structure proved to be insufficient to respond to the rapidly changing naval technologies as well as the dramatic modernization of production led by Sultan Abdulaziz’s policies, a new institutional framework was launched, marked by the introduction of the boys’ companies, the reorganization of the Haddad students as a military school to raise mechanics, and the introduction of a civilian school of mechanics. Aside from technological transformation, however, this reorganization also owed much to the rise and the increasing visibility of urban poverty in the capital in this period, which gave the Tanzimat statesmen the opportunity to couple the economic demands of the capitalist production regime with their socio-political ideals to create a modern Ottoman citizenry through vocational schooling. These companies, which expanded into battalions in the face of growing economic challenges in the 1880s, meant to play an important role not only to create a cheaper labor force, but also to normalize the basic ideas and promises of the industrial-capitalist culture, such as competitiveness, division of labor, success through hard work, and time-work discipline by means of military supervision. The dominance of this culture would further be consolidated by the formation of a factory regime at the workplace, which will be discussed in the next chapter.
CHAPTER 5

THE EMERGENCE OF A FACTORY REGIME IN THE IMPERIAL ARSENAL

In the earlier chapters, I analyzed the struggles between the Ottoman state and workers over the transformation of the labor force to create a regular, disciplined, skilled, and profitable labor force in the Imperial Arsenal. From the time of Selim III, these efforts were justified by the necessity of an “order” (*nizam*) in the Imperial Arsenal. However, this necessity was not limited to the profile of the labor force. An equally important issue was how to make these workers work efficiently and productively enough to construct a modern and competitive navy and to maintain its competitiveness throughout the ever-changing industrial techniques and technologies. Bringing the workers into the Arsenal, albeit regularly through conscription, was not enough for this purpose. Order was also necessary both to maximize the efficiency of the labor process and to keep the skilled and experienced workers in the Arsenal.

From the 1840s onwards, a series of instructions were issued both to standardize the labor processes and to systematize the top-down surveillance over workers and their labor processes. These policies were further refined in parallel to the increasing complexity of the production process in the Arsenal by the 1860s, characterized by an increasing division of labor. As a result, the Arsenal was divided into different spatial-administrative units; the number of workers, their wages and tasks were fixed; and regulations were issued to introduce and inculcate time-discipline at work for the workers.

There was an additional problem, however, which emerged as a result of the Ottoman state’s struggles to transform the labor force in the Arsenal. Throughout these struggles, in contrast with the 1838 plan to possess a fully militarized labor force, the profile of workers that
the Imperial Arsenal employed became a rather anarchic one. In addition to conscripts who were part of the labor battalions, there were foreign and local civilians as well as military and civilian children in this labor force. As we saw in Chapters 3 and 4, the Ottoman government’s dependence on skilled local labor particularly increased especially when the government started to discharge the foreigners with the looming of the financial crisis in the 1870s. The presence of, and the increasing dependence on, local civilians on a more regular basis made challenging not only the implementation of disciplinary policies, but also the reproduction of this labor power, as these civilians showed their reluctance to work through turnover, especially when these circumstances overlapped with wage problems. Therefore, these disciplinary policies had to be accompanied by certain concessions that would encourage these workers to stay even when their wages remained in long arrears. For this goal, in addition to the limitation of working-time and the payment for overtime work, a modern social security regulation was issued, which aimed to maintain workers’ loyalty to their workplaces.

Altogether, these policies contributed to the formation of the Imperial Arsenal as a modern factory, where production apparatuses were introduced to regulate the experiences of workers and their relations to the production process, their fellow workers, the Arsenal administration, and the state. The history of industrial working-class formation cannot be clearly understood without acknowledging the role of these apparatuses that aimed to constitute a production politics in the workplace. As I will show in this chapter, these apparatuses emerged both in response to the struggles between the Arsenal and its workers and in order to regulate
these struggles. In this sense, these regulations and instructions point out to the emergence of a “factory regime” in the Imperial Arsenal by the early 1870s.\footnote{For a description and a comparative analysis of modern factory regimes and production politics, see Michael Burawoy, \textit{The Politics of Production: Factory Regimes under Capitalism and Socialism} (London; New York, N.Y.: Verso, 1985).}

\textbf{Labor Control in the Arsenal}

In the early nineteenth century, reforms targeting the production process largely focused on the organization of the labor force, rather than directly controlling the labor process itself. Although productivity was a major concern, the naval administration was apparently convinced that creating a regular and skilled labor force, with their raised wages, would solve this problem. Hence, the creation of a regular corps of carpenters, augerers, and caulkers, in addition to the enforcement of guildsmen to work in the Arsenal. Despite the accounts which refer to the strict surveillance of the production process by the Grand Admiral Küçük Hüseyin Pasha in the 1790s, his proposal did not offer a systematic policy to regulate this process.\footnote{See Chapter 1 for details of the reforms introduced by Küçük Hüseyin Pasha in this period.}

Indeed, by the time the Code of 1827 was issued, it already had turned out that the reorganization of the labor force was not enough to ensure productivity and efficiency. According to the Code, the main group among the workers, the carpenters, were still not working efficiently, since their primary concern was to produce chips which they could sell outside in order to compensate their low wages. Indeed, according to the Code, carpenters were wasting lumber of 20-30 piaster worth for chips worth 10 piasters. From time to time, the administration attempted to stop them, but this was only leading them “to leave after working a few hours every day, saying ‘our wages are so low that we are just working for free, like the corvée (\textit{yevmiyemiz kalılı olup bayağı angarya işliyoruz})!’” Another main group, the augerers, were also stealing nails and
copper to sell in the market. In addition, the Code was also implying embezzlement on the part of journeymen, who were paid for apprentices whom they did not employ.\textsuperscript{458}

As a result, production was not only slow and at low quality; it was also causing huge loopholes in the budget. The Code was an attempt to bring these problems to an end by again reorganizing the labor force. First, presently-employed carpenters and augerers, aside from their journeymen, would be divided into first and second classes, according to their skills, and their upgrading from the second class through the rank of journeyman would strictly be overseen by the architects and the harbormaster (\textit{liman reisi}), who would test their skills and knowledge. In addition, with the intention to discourage them from stealing and selling chips and other materials, their wages would be raised substantially.\textsuperscript{459} In spite of these reforms, the Code was still reflecting the earlier mindset of the ruling elite, which assumed that increasing the skill sets of workers and reorganizing the labor force would be enough to solve the problem of efficiency and productivity.

Following the Tanzimat Edict of 1839, as part of the bureaucratic reforms that included the naval administration, a series of instructions were sent to the officials in administrative positions in the Imperial Arsenal. The instructions were likely a part of the larger efforts in naval bureaucracy to designate and clarify the obligations and boundaries of each administrative post, including that of the Grand Admiral, who received such an instruction in 1845.\textsuperscript{460} Following the Grand Admiral, similar instructions were sent to the people occupying lower administrative ranks, including the directors of the Marine Hospital and the Rolling Mill, the chief warden of the

\textsuperscript{458} BOA.A.\{DVNS.KNA.d.06/97.
\textsuperscript{459} Ibid.
\textsuperscript{460} DMA.Env.1827/4, 9 Şevval 1261 (11 October 1845).
prison and the chief of the watchmen (*manda ağası*), and the heads of each craft group in the Imperial Arsenal in 1846.⁴⁶¹

The details of the instructions, analyzed closely, demonstrate a specific concern on the part of the administration to control not only the labor force but also the labor process itself, by means of a set of rules written specifically for each craft about how workers should handle the raw materials and how they should be supervised during worktime. The instructions justified these rules by arguing that standardizing the labor process in this way would reduce the wasting of raw materials and help workers finish in the tasks on time. In other words, the instructions were clearly shifting the emphasis from the labor force to the labor process, championing the idea that efficiency and productivity could only be realized by standardizing the labor process and by strictly supervising the labor process from top to bottom, hence curbing the autonomy of the worker at work for the benefit of the administration.

In this regard, the instructions sent to the heads of the sailmakers, caulkers, augerers, cabinet makers, painters, the Rolling Mill workers, ironsmiths, and carpenters all shared the same concerns for the labor process. Each head was supposed to make sure his workers did not “waste a minute” after they were assigned to their specific tasks every day. During work, they had to inspect the jobs periodically, to make sure the work was done properly, that is, in line with what was asked by the harbormaster and/or architects, without causing any damage to the tools or the materials and without wasting any materials or labor during production. For this purpose, craftsmen were strictly ordered to consult every phase of manufacture with the architects and/or the harbormaster, so that no extra material to be used, no extra item to be produced, and no extra worker should be assigned without their permission. In addition, each head was supposed to

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⁴⁶¹ These instructions are located in DMA.ŞUB.5/10-a,b,c,d,e; ŞUB.5/11-a,b,c,d; and ŞUB.5/12-a,b,c, 5-9 Muharrem 1262 (3-7 January 1846).
ensure that their workers should not waste their time during work and should not leave their workplace other than the lunch break, which was to be marked by a trumpet call. The instructions also put the liability of the extra costs on these heads, whose salaries would be cut according to the cost of materials and/workers that were used without the permission of the superiors.\footnote{Ibid.}

At first glance, the main goal of the instructions was clearly to bring the bureaucratic operations in the navy and the Imperial Arsenal into an order, as part of the overall bureaucratic reforms that defined the Tanzimat Era. Indeed, the instruction to the Grand Admiral clearly referred to the lack of clarity regarding the duties, responsibilities, and limits of each official in the navy.\footnote{DMA.Env.1827/4.} However, the contents of these instructions regarding the production processes in the Arsenal suggest that efforts in this regard, aside from bureaucratic concerns, aimed to bring the production into a capitalist order as well, an order that primarily targeted the extraction of profit out of the labor process. This order was marked by a strict hierarchy between the mental and the physical phases of the labor process, that is, between the administration and the most skilled workers, including the architects, on the one hand, and the craftsmen-cum-manual workers on the other, in which the former dominated the latter.

This hierarchy presumed a clear division of the labor force along these lines, and indeed, at least since the 1820s, the administration had already been taking steps to strictly divide the labor force as such. The post of architect (mimar) was a clear concern in this regard, as they were mostly selected from the experienced and skilled carpenters. However, since there were no strict criteria for upgrading these carpenters, in 1825 the administration decided to bring a limit to the number of architects in the Arsenal, and instructed that these architects should preferably be selected from among the graduates of the Naval School, and in their absence, from among the
most talented carpenters.\textsuperscript{464} However, this effort had largely failed by 1837, when the administration, as part of reforms led by the undersecretary Safveti Musa, decided to dismiss the old and untalented architects, by subjecting them to an examination by the American head carpenter, Charles Ross.\textsuperscript{465}

In this sense, instructions were clearly taking another step to consolidate this hierarchy, by underlining and systematizing the dominance of both the top bureaucrat of the Arsenal, the harbormaster, as well as the architects- who, by this time, had been clearly differentiated from the rest of the labor force- over the labor process. Such a strict differentiation of the labor force and the top-down standardization of the labor process is important to understand the transformation of the workers’ role in the production process. By eliminating their autonomy and control over their labor processes, the administration was clearly intending to turn these workers, who still were identified with their crafts, i.e. as craftsmen, into manual workers, whose main function was to execute what was decided and designed by the top-tiers.

Aside from the directors and heads of the crafts, the administration also mobilized another group of employees, called the mutemedan, who had been acting as overseers in the Arsenal since earlier times, in order to strictly regulate how workers handled the materials, as a further layer of control over the labor process.\textsuperscript{466} According to the instructions sent to the two chief mutemeds in 1846, one being exclusively responsible for the construction in the drydocks, they were supposed to come before the workers every morning, to be present during the assignment of workers to their specific tasks, and to send one of their mutemeds to accompany each group of workers to

\textsuperscript{464} BOA.C.BH.171/8053, 11 Muharrem 1251 (9 May 1835).
\textsuperscript{465} DMA.ŞUB.1/32b, 26 Şaban 1253 (25 November 1837).
\textsuperscript{466} For those ones who were employed in the seventeenth century, see Bostan, \textit{Osmanlı Bahriye Teşkilâtı: XVII. Yüzyılda Tersâne-i Âmire}, 79.
their assigned worksites. They were themselves supposed to inspect each worksite a few times a day, to make sure that materials were provided to the workers at sufficient amount or quantity, and no materials would be wasted and lost during work or during their transportation from the stores to the worksites. Especially during maintenance and repair, when parts of a ship were disassembled, the chief mutemed was the one to be held responsible for the safety of each item, from pieces of iron and copper to nails. Reflecting the earlier concern to stop workers stealing the materials, a mutemed had to be present “wherever a nail was hammered during production.” Indeed, most likely to ensure the diligence of the mutemeds especially for the safety of chips, which were to be protected from the carpenters who produced them, their salaries were funded by the sale of these chips.

The Naval Regulation of 1849 underlined once again the need to control the labor process. It specified that the mutemeds and the chiefs of carpenters, augerers and caulkers were supposed to take attendance twice a day, and strictly watch for workers who were not working hard enough or who were wasting time elsewhere, as well as watching for the safety of materials such as chips and nails. Similarly, the Regulation also ordered the officers to watch the conscripts under their supervision in the labor battalions, making them work efficiently, without leaving them before the end of workday. Like it did for the supervisors of civilian workers, the

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467 DMA.ŞUB.5/10a and ŞUB.5/12c.
468 This practice was abolished in 1849, after which they were paid daily wages, since the procedures regarding the sale of chips were delaying the payment of these salaries, leading many of these mutemeds not to show up every day. By this time, there were 29 mutemeds in the Arsenal. See DMA.Env.341/32 and 33, 29 Cemaziyülahir 1265 (22 May 1849). The mutemedan were dissolved following the decree that ruled the dismissal of all civilian workers in 1851, when many mutemeds desperately petitioned to return. See, for examples, BOA.A.MKT.NZD.41/29 and BOA.A.MKT.NZD.43/84-1. Mutemeds continued to appear in many registers in the following decades, however. In 1871, for example, there were 37 of them who were most likely employed to supervise the shipwrights in the Square and the Drydocks, see DMA.Env.742. Nevertheless, the task of supervising the remaining force was largely assigned to different officials and officers, as we will see.
Regulation also made a particular emphasis on the protection of the materials from the workers who labored on them, ordering that officers should not allow conscripts to take “one single nail” out from the worksite.\textsuperscript{470}

In the 1860s, in parallel to the transformation process marked by the increasing heterogeneity of the labor force, division of labor, and the physical expansion of the Arsenal, the control over the labor force and the labor process had to be sophisticated as well. This paved the way for new regulations and instructions that aimed to erect an institutional form of control to adapt to this transformation. An important precondition to control the labor force and the labor process was to possess the basic knowledge about the labor force throughout the ongoing dramatic changes. This was a necessity already admitted by the administration in 1864, when the authorities once again felt the need to underline that no extra workers, not demanded by production, should be recruited and the existing ones should be released as soon as they were not needed anymore, and that workers should not be promoted arbitrarily.\textsuperscript{471} Thus, by means of a new series of instructions (\textit{talimat}) in 1870, the number of workers, their wages, and their specific workplaces were clarified and fixed.\textsuperscript{472} The administration clearly justified this policy by the necessity of an order for the recruitment process and the wages of workers. The absence of specific set of rules and criteria that would arrange how workers would be recruited and dismissed was leading to fluctuations in the labor force, which made the management of these

\textsuperscript{470}Ibid., 48.  
\textsuperscript{471} DMA.Env.650/4, 4 Zilhicce 1280 (11 May 1864). 
\textsuperscript{472} BOA.ŞD.2/29, 25 Cemaziyülevvel 1289 (31 July 1872). This file contains the correspondence series concerning minor revisions in these instructions and, in an attached booklet, reproduces the full set of the original instructions, which consisted of 13 articles. These instructions had originally been issued and approved on 14 Muharrem 1287 (16 April 1870), according to DMA.Env.1900/19. See also DMA.Env.1900/17, 18 and 19 for an incomplete copy. The 1872 revisions made no changes to the first article, which provided a breakdown of all workers in the Arsenal “at the present time” (i.e. 1870). See also Appendix B for an overview of this distribution.
In other words, the administration had to bring an order to these fluctuations, stopping arbitrary recruitment or dismissal, in order to better implement its surveillance of the labor force and the labor process.

Thus, the first article of the instructions in 1870 ruled how workers should be organized. Accordingly, the workers were divided into two main groups: The first group was the “permanent workers” (amele-i daime), who were interchangeably referred to as “regular workers” (amele-i kadime) or “first class workers” (birinci sınıf amele). The second group of workers was called “temporary workers” (muvakkat amele), or “second-class workers” (ikinci sınıf amele). The article also gave a detailed account of the number of workers employed in each worksite as well as their wages/salaries. As such, there were 4,830 permanent workers, who were employed in the construction and maintenance of ships and the manufacture of materials. Since, according to the third article, the present number of workers and their wages/salaries were enough to address the long-term necessities of the Arsenal, changes in this regard should not be allowed in the future. The only exception would be the wages/salaries of workers who demonstrated an “exceptional effort and talent,” which were to be increased as an incentive, once every three months. In addition to the permanent workers, the Arsenal also employed 546 temporary workers, who worked in the construction of ships or other buildings, and whose numbers would be decreased or increased in parallel to these projects, though these increases or decreases would also be subject to approval by the Naval Council.

The classification of these permanent workers also reflected the recent dramatic changes in the division of labor. Traditionally, workers in the Imperial Arsenal were mostly classified

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473 DMA.MKT.139/2a
474 BOA.ŞD.2/29. Although the regulation ordered the number of regular workers to be fixed, this should be seen as a target, as especially in parallel to high turnover, the number fluctuated. See, for example, DMA.Env.742 for the wage register of April/May 1871 as a comparison.
according to their crafts, as carpenters, caulkers, augerers, ironsmiths, etc. Those who did not belong to a specific craft group were simply classified as rençbers (day laborers). In the first half of the nineteenth century, the construction of the two drydocks gradually led the authorities to refer to the workers in the Drydocks, located on the east of the Divanhane (the Headquarters of the Ministry of Marine) and those in the main arsenal on the other side distinctively. Other than that, the rest of the organization remained the same, as the above-discussed instructions in the 1840s also confirmed. Throughout the Tanzimat Era, the construction of new factories, workshops and shipbuilding slips and the concomitant physical expansion of the Arsenal increasingly divided the workforce among different worksites. The breakdown of workers in the instructions of 1870 acknowledged this as a permanent reality, by classifying the workers primarily according to their workplaces, rather than their crafts.

According to the instructions, aside from the existing division between the Drydocks-which included the two, and later three, drydocks and the attached workshops and factories here-and the Arsenal area, the latter was also divided into three different units. The first one was the Sites/Department of Manufacture (İmalat Mevkileri/Dairesi). These sites mainly referred to the factories and workshops that primarily aimed to produce main materials for shipbuilding and for the navy. Among these sites were the Ironworks, the Foundry, the Rifle Factory, the Boiler Shop as well as the two factories for the production and maintenance of machinery: the Yalıköşkü Factory (across the Golden Horn) and the Repair Factory.475

The second category was the Sites, or Department, of Construction (İnşaiye Mevkileri/Dairesi). The Construction sites mostly included the shipbuilding slips and the workshops/factories, which produced items directly related to shipbuilding, located mostly

475 BOA.ŞD.2/29.
around these yards. These ranged from the sail-makers’ shops and joiners’ shop to the steam-hammer shops, block makers’ shop, and the other Ironworks that exclusively produced items used in ironclad construction. In addition to these sites and their workers, there were also other workers who were not required to come every day, and did not belong to a shop as such, but still were listed as permanent workers. These floating workers were still identified with a site, being listed as the Square Workers (*Meydan Amelesi*). Originally referring to a large area where a mosque, built in the previous century, was located as well as storehouses and smaller yards for shipbuilding, the Square in this division included the streets that stretched from one end of the Arsenal to the other, where such workers were employed. These square workers were not attached to a specific worksite, and were called in only when needed in a specific workplace, mostly as carpenters in shipbuilding, as well as porters and day laborers.\(^{476}\)

In this way, the administration was identifying the worker not with his own craft or job, but rather with the workplace which he was affiliated. In other words, workers were not classified as a single occupational unit, but divided into several spatial-administrative units, corresponding to the workplace which employed them. Aside from the factory workers, each of whom was identified with the factory that employed him regularly, the traditional craftsmen such as carpenters, augerers, and caulkers were also divided into different shops. A carpenter, thus, was identified with one of the workshops such as the Mast Makers’, Boat Builders’, or the Joiners’ Shop. In case they did not work in a specific workshop, but rather were employed in shipbuilding, as was the case with most augerers and caulkers, they still were affiliated with a shop, such as the Augerers’ or the Caulkers’ Shop, where they had to come every morning, only to be divided and assigned to the worksites they were required to work that day.\(^{477}\)

\(^{476}\) Ibid.

\(^{477}\) Ibid.
An important outcome of this classification was the affiliation of the worker with the Arsenal itself, rather than with his craft, as a step in transforming the craftsman into the factory worker, by alienating him further from the labor process. In fact, we may suggest that the very idea of the categorization between the “permanent” and the “temporary” workers would serve to this end. This was in a way the outcome of a long process that was intentionally launched at the end of the eighteenth century, when Selim III’s administration attempted to create a regular group of carpenters, augerers, and then caulkers. Although in the following decades these regular workers continued to work, they did so as craftsmen who had a permanent lot in the Arsenal or the navy. Even the instructions of the 1840s, which aimed to increase the top-down control over the labor process, stuck with the traditional organization of these workers, as separate instructions were written for each craft and they were directly sent to the head of each craft group. The category of “permanent workers” in the instructions of 1870, along with the other regulations of this era, were taking one step further in redefining these craftsmen with the place where they worked, as the workers of the Imperial Arsenal, or simply as “arsenal workers” (*tersane amelesi*).

The supervision of these workers and their labor processes became also complicated in parallel to the complexity of this division of the labor force along spatial, administrative, and occupational lines. The same year, the administration issued another series of instructions that specifically addressed the duties and workplaces of a small bureaucratic army that was supposed to “keep the workers working.”

Consisting of both civilian foremen and officers, this body was basically charged with what the traditional *mutemedan* had been, who continued to supervise carpenters and augerers in shipbuilding. However, the new force was much more sophisticated to correspond to the transformation in the Arsenal. It consisted of 188 officials in total, being

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478 DMA.Tersane.392/41a and 42a, 4 Safer 1287 (6 May 1870).
assigned to the workplaces in parallel to the division of the labor force in the previous 
instructions. Thus, the sites of Manufacture, Construction, and the Drydocks, each had their own 
group of officials, who in turn were distributed to the specific workshops and factories. The 
Square also was divided into three different zones, each one being assigned a certain number of 
officials. The officers, among these supervisors, had different ranks, ranging from colonels to 
sergeants, whereas the civilian ones consisted of foremen, masters, and journeymen. Regardless 
of their ranks or status, their primary function was to ensure the presence of the workers at their 
worksites during worktime, to accompany them if they were sent or distributed to different 
places, and to report them in case “they were lazy or useless.”

These instructions represented the ways the state elites wanted to control the production 
process, in minute details. In this sense, it underlines the vision of the state elites to create a 
factory regime in the Imperial Arsenal at this period. However, this does not necessarily mean 
that these instructions and regulations were enforced as strictly as it appeared, since neither 
workers nor their foremen and officers lacked the agency to resist this top-down control in 
everyday life. In 1883, an internal correspondence complained that both civilian workers and 
conscripts in the Arsenal were wasting their time at work “here and there” (ötede beride), without 
actually doing their work. The reason, according to the correspondence, was that neither the 
officers of the conscripts nor the foremen of civilian workers were present at the worksites they 
were obliged to supervise. Thus, the correspondence underlined the necessity to issue strict 
warnings to remind these officers and foremen their responsibilities. The problems of 
enforcing these instructions seem to have increased in parallel to the stagnation of production at 
the end of the century. In 1897, another correspondence underlined the lack of discipline in the 

479 Ibid. 
480 DMA.MKT.409/79, 20 Cemaziyılıvelvel 1300 (29 March 1883).
industrial battalions, where most conscripts were not doing their jobs, but wasting time elsewhere, some of them at the houses of their officers, who employed them in their own service. The discipline was so lax, according to the correspondence, that when 40-50 conscripts were assigned for a specific task in the Arsenal, only 10-15 of them showed up.481

Time Discipline

In the same period, at least two regulations were also issued detailing how work and workers would be supervised in the Arsenal, both in factories and in sites of construction, starting from March 1869.482 Regardless of workers’ tasks, sites, or status, the most important concern for the officials was inculcating a time-discipline in the Arsenal, evidenced by the fact that many articles of these regulations were reserved for instructions in this regard. Indeed, the first articles were clarifying the length of the workday and the exact times for when work should start and end, with the following articles detailing how this temporal organization was to be supervised and implemented by the officials.

These articles were basically paralleling the efforts of the bureaucratic elites during the Tanzimat Era to create a legal point of reference regarding what was to be understood by a “workday”, a common temporal principle that was to be strictly implemented for every employee in state institutions.483 Until the mid-nineteenth century, there was not a clear-cut temporal division to designate the workday or working hours in workplaces, but rather days were mostly organized in harmony with the prayer times. This did not mean that the Ottomans were

481 DMA.MKT.1059/11, 25 Zilkade 1314 (27 April 1897).
482 For the full texts of both regulations see DMA.Env.1900/10-13, 25 Zilkade 1285 (9 March 1869).
483 For these efforts and the changes in temporal organization in the nineteenth century, see Avner Wishnitzer, Reading Clocks, Alla Turca: Time and Society in the Late Ottoman Empire (Chicago; London: University of Chicago Press, 2015).
completely lax or ignorant about time discipline. Even in the absence of laws or regulations, people were expected to start working in a short while after the morning prayer and leave work before the evening prayer, or shortly after the afternoon prayer. In 1826, the journeymen of the sailmakers’ guild presented a collective petition to complain about their masters, who paid them such low wages that they could not make ends meet. Since the sailmakers were officially bound to the Arsenal, as they were supposed to produce sails for a designated price (lower than the market) whenever the navy needed them, it was the Arsenal administration that mediated between the masters and the journeymen. During the negotiations, an important complaint of the masters which justified their low wages, in their opinion, was that while masters were showing up at work on time, the journeymen were coming late and leaving early, working only a few hours a day. As a result of the negotiations, the masters agreed to increase the wages, only on the condition that every day, the journeymen would come at ten o’clock in the morning (alaturka time, meaning two hours before the sunrise) during summer, and at the daybreak during winter, and leave the work in both seasons at eleven in the afternoon (one hour before the sunset).484

In spite of this, as the actual working times were not fixed even for the state bureaucracy, this became more of a concern especially during the Tanzimat Era reforms, when a more rational time-organization was needed to tackle with increasing bureaucratic work and, in the case of the industrial sites, increasing rate and complexity of production. Thus, the state elites started to set clear-cut working hours in different institutions, structuring time after western societies, which had almost universally adopted mean time (alafranga) as opposed to real solar time (alaturka) by

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484 DMA.MKT.1/35, 2 Receb 1231 (29 May 1826). In this case, sailmakers, when they were not supposed to work for the navy, were producing for merchant ships, and the masters were receiving three and a half piasters a day for each journeymen from the merchant, but paying two piasters (80 para) to the former. At the end of the negotiations, they agreed to raise the wage to 90 para.
this point, thanks to the advances in mechanical clocks.\(^{485}\) However, the state elites continued to keep in harmony with the traditional habits and expectations, i.e. workday was to be compatible with the length of the day, which varied seasonally and was divided into prayer times.\(^ {486}\) Avner Wishnitzer observes, based on the decrees and regulations for different bureaucratic institutions throughout the nineteenth century, that the workday between March and September varied between five and a half and nine, and in winter between five and seven hours. The main focus of these decrees and regulations was, thus, not to extend the length of the working day, but rather, to designate a clear temporal line between work and non-work.\(^ {487}\)

In the regulations of 1869, the range of the workday was similarly kept compatible with the seasonal variations of daylight, though working hours were longer and worktime was more clearly defined than what Wishnitzer observed in the offices. Accordingly, the year was first divided into three periods, depending on the length of daytime. In March and October, when daytime was mostly equal to nighttime, the work would last nine hours, from 7.30am to 4.30pm, \textit{alafranga}. Between April and September, when the days were longer, the working day would start at seven in the morning, and end at five in the afternoon, a total of 10 hours. In winter time, between November and February, the workday would be shorter, from eight in the morning until four in the afternoon, a total of eight hours. Regardless of the period and the length of the workday, the workday included a one-hour lunch break for the workers.\(^ {488}\)

The following articles in both regulations were apparently aiming to inculcate a sense of punctuality at work by strictly organizing the working time and penalizing those who offended this organization. Accordingly, each worker, regardless of whether they are local/foreign civilians

\(^{485}\)\textit{Wishnitzer, Reading Clocks, Alla Turca: Time and Society in the Late Ottoman Empire}, 152. \\
\(^{486}\)Ibid., 47. \\
\(^{487}\)Ibid., 50-52. \\
\(^{488}\)DMA.Env.1900/10-11.
or conscripts, was supposed to have a personal badge, a small metallic plate on which his name and his personal number was inscribed. Every morning, each worker was supposed to pass, one by one, by the office of the time-keeper (muvakkit odası). In this office, there would be two clocks, hanging on the wall, one being alafranga time (zevali), in reference to which above-mentioned working hours were determined. However, confirming the ongoing dominance of the alaturka time (ezani) in everyday life, there would be a clock showing the alaturka time as well.\(^{489}\)

The existence of two clocks, displaying time in both temporal systems, was clearly meant to preempt any excuses or manipulations on the part of workers for lateness, which were not unexpected considering the strict fines for being late outlined in the following articles. In the office of the time-keeper, there would be a chest with three drawers, into which workers would leave their badges when they passed by in the morning. The first drawer would be for the workers who came on time, and it would be closed five minutes after the starting hour. The second drawer would be closed ten minutes after the first drawer, and the wages of workers who had to leave their badges to this drawer would be cut for half an hour. The third drawer would close 15 minutes after the second, wages would be cut by an hour. Those workers who were late for more than half an hour would not be accepted until the lunch break, missing half a day of their daily wages. The regulations were also organizing the remaining working time as well. At the beginning of the lunch break, marked by a trumpet, workers would come back to the office of the timekeeper to pick their badges, only to leave them again at the end of the break. Again, there would be three drawers for the afternoon session, to be used in penalizing those who came late afternoon.\(^{490}\)

\(^{489}\) Ibid.

\(^{490}\) DMA.Env.1900/10 and 12.
Like other labor control policies, discussed in the previous section, these articles pointed out to the vision of the state elites, rather than completely representing the everyday reality in the Arsenal. Indeed, both Wishitzer’s accounts from other institutions, and the specific documents from the following decades, suggest that at least in this initial period, time-discipline may not have been strictly enforced, due to low compliance of these regulations even among the bureaucratic officials.\textsuperscript{491} The main problem, especially for the working people in this period, was likely that mechanical watches were not common, meaning that they lacked the main tool to arrange their time as strictly as envisioned by the regulations. Of course, for the conscripts, who were brought from the barracks under the supervision of their officers, the implementation could be easier, though it still depended on the compliance of these officers. Thus, the soldiers would individually not be held responsible for late coming, as at least regulation for the construction sites admitted.\textsuperscript{492} Among the civilian workers, this was probably not a major problem for the British, who were mostly settled right near the Arsenal, and who were most likely more familiar with personal watches and time-discipline. However, for local civilians, many of whom not only lacked personal watches, but were also most likely illiterate, this was probably a major source of distress. In other words, the strict enforcement of these articles may not have been realistic at least in the initial period, as this would have been likely to further infuriate the workers who were already displaying serious reactions to the long arrears in their wages in the 1870s.

\textsuperscript{491} Wishnitzer, \textit{Reading Clocks, Alla Turca: Time and Society in the Late Ottoman Empire}, 57. See similar examples from 1886 and 1892, respectively, which documented that officers were coming late to work, and sometimes were not showing up at all, stopping the production in the Arsenal. See DMA.MKT. 431/165, 22 Safer 1304 (20 November 1886) and DMA.MKT.732/20-23 14 Cemaziyülevvel 1310 (4 December 1892). Of course, these cases should be considered within the context of the crisis of naval production especially after the 1880s.
\textsuperscript{492} DMA.Env.1900/12.
The temporal organization offered by these regulations conformed to the traditional expectations for limiting the workday to the daylight, as changes in the former were kept in harmony with the latter. However, the strict regulations aiming to inculcate a sense of punctuality and the supervision of workers by a large bureaucratic army still signified an important adaptation to an important characteristic of capitalist production especially after the Industrial Revolution, that is, the commodification of labor through time-discipline.\textsuperscript{493} In Thompson`s words, capitalist production would not suffice with “task-orientation”, the temporal organization that characterized rural/non-industrial contexts and according to which working-time was bound to the completion of a specific task or need.\textsuperscript{494} Through the dramatically increased pace of industrial production in the nineteenth century, the main goal of production increasingly shifted toward making profits by producing as much as possible within a specific period of time. In other words, the system rested on a never-ending tempo of production, since profits could only be created by the efficient use of time in the workplace. Less time at workplace might mean less profit, or even a loss, for the capitalists.

It was such an awareness that pushed the Ottoman administration to make a new arrangement of the wages of civilian workers, who consisted of around 3,500 workers by 1862 including those who were employed in the construction of buildings in the Arsenal.\textsuperscript{495} In September 1862, as part of efforts to stabilize currency and prices in order to secure more foreign loans, the Ottoman government cancelled and withdrew the \textit{kaime} (the paper money).\textsuperscript{496}

Immediately after, the naval administration attempted to rearrange the workers` wages by

\textsuperscript{494} Ibid., 60.
\textsuperscript{495} DMA.Env.341/5 and 6, 17 Cemaziyülevvel 1279 (10 November 1862).
reducing them so as to hold them compatible with the decreasing prices.\textsuperscript{497} In doing so, it attempted to divide the wages into two periods. Accordingly, workers would be paid more in the summer season (the six months between April and September) than the winter one (between October and March), since in the latter period, they worked fewer hours due to shorter daytimes. Therefore, for example, carpenters, who were the largest group in the labor force with a number of 1,319, would receive between 2.5 and 13 piasters per day in summer, and between 2 and 11 piasters in winter. Another large group, the ironsmiths, who numbered 314, would be paid between 5.5 and 35 piasters per day in summer, and between 4.5 and 30 piasters in winter.\textsuperscript{498}

Since this meant that workers had to live in the winter off whatever they could save in the summer, it would lead them to quit their jobs as soon as they could find higher paying jobs especially in summer months. Indeed, shortly after this arrangement was implemented, workers responded to it by quitting their jobs massively, threatening the goals of the recently enthroned Sultan Abdulaziz to build a powerful and competitive navy. The administration had dramatically increased the number of workers to achieve these goals only recently, and thus the new arrangement turned out to contradict these efforts. Eventually, the government stepped back, removing the seasonal division of wages and offering more competitive wages to keep the workers in the Arsenal. As a result, workers were offered higher wages to be paid for the entire year. The above-mentioned carpenters, according to the new rates, would receive between 3 and 15 piasters, whereas the ironsmiths would be paid between 6 and 40 piasters.\textsuperscript{499}

\textsuperscript{497} DMA.Env.341/5 and 6.
\textsuperscript{498} Ibid.
\textsuperscript{499} DMA.Env.341/6, 15 Cemaziyülahir 1279 (8 December 1862).
Incentives for Workplace Loyalty

This example demonstrated a very critical problem for the Arsenal administration to tackle in order to catch up with the dramatically increased production targets in the Abdulaziz Era. The efforts to exponentially increase the rate of production could not tolerate a high rate of turnover, especially when the increasing division of labor and complexity of the production process further increased dependence on skilled and experienced workers. No matter how strictly workers would be supervised and their time would be organized through regulations and instructions, these efforts would be meaningless without successfully keeping the skilled and experienced workers in the Arsenal, whose existence was now critical for the increasing concerns of efficiency and productivity. Therefore, perhaps the most important mission of the Arsenal administration was to stop the high rate of turnovers for an efficient production process. Although creating a regular labor force was always an important concern since the time of Selim III, both the partial failure of the militarization campaign and the increasing rate of turnovers amid financial problems in the 1850s and the 60s, proved that new steps had to be taken in this regard.

This was not an easy task, however. Despite increases in the naval budget, owing to the personal interest of Sultan Abdulaziz in naval modernization as well as the increasing availability of foreign loans after the Crimean War, these funds were largely spent on the mechanization of production, purchase of new ships and the construction of new vessels and factories, leaving little resources for labor costs. In May 1861, shortly before the enthronement of Sultan Abdulaziz, a correspondence stated that 300 workers recently left due to unpaid wages, and the rest did not show up regularly. As the problem of unpaid wages persisted for both local and foreign civilian workers in the Imperial Arsenal, this made the implementation of disciplinary practices

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500 BOA.AMKT.NZD.354/32, 19 Zilkade 1277 (29 May 1861).
particularly difficult when workers had the opportunity to leave for better jobs in Istanbul or elsewhere.\textsuperscript{501} It was obvious that this problem could not be solved by simply raising wages, as this was the last thing the administration wished for in light of persistent budgetary problems and increasing expenditures. On another level, the Arsenal may have been slightly lucky due to the closure of many of its competitors in Istanbul in the earlier decade, which left it as one of the few large-scale industrial establishments in Istanbul. Indeed, this was the exact reason why many British mechanics became dependent on their jobs in the Arsenal. However, for more traditional craftsmen, from carpenters to caulkers and ironsmiths, there were always other options, including self-employment.

So, how to maintain a sense of loyalty among the workers to their workplace, and to make the Arsenal a workplace attractive enough in spite of these arrears and disciplinary policies, so that especially skilled and experienced workers would not look elsewhere at the first opportunity? The temporal organization, as detailed in the regulations, could also be interpreted as an important step in this regard, a written assurance on the part of the government for not overworking the workers without pay, even when the rate of production required extra amount of labor. The regulations did not only limit working hours to the daylight in harmony with traditional expectations and habits, but they also guaranteed payment for extra-hours following the workday. Accordingly, when their labor was needed at night time, they would be guaranteed to be paid in double if they worked extra four and a half hours in summer, and five hours in winter. This assurance, however, also limited the rate of production, since the regulations discouraged authorities to continue production at night. The reason was not only the labor cost of

\textsuperscript{501} For example, in 1867, a Muslim mechanic, named Kamil, petitioned to leave the Arsenal for another state-run ferry company, Şirket-i Hayriye, since his wages were not paid there. BOA.MVL.530/49, 8 Zilkade 1283 (14 March 1867). See also Chapter 3 for a detailed discussion of this issue.
doing so, but also the inefficiency of it, since workers would be too exhausted to continue performing at the same level after a workday. Therefore, making a clear connection between money, time, and efficiency, the administration assumed that “a five-hour work at night could only correspond to two-hour work in daytime, thus a full wage would have to be paid for an only two-hour work in practice.”\(^\text{502}\) Furthermore, working at night would also decrease workers` efficiency the following day, which again would contradict with the goals of extra working time.\(^\text{503}\)

A more comprehensive and institutional step to guarantee the reproduction of skilled labor power in the Imperial Arsenal came in the form of social security benefits, which were guaranteed by a regulation in 1875. The current state of research on the history of social security in the Ottoman Empire suggests that this regulation might have been the first regulation that exclusively addressed industrial workers in the Ottoman Empire, although it should be underlined that we still lack information for many industrial establishments in Istanbul and elsewhere.\(^\text{504}\) Regardless of whether this was the case, why such a regulation was decreed in this period had much to do with the process of forming and maintaining a regular and permanent labor force, which in turn would guarantee the efficiency of production, considered together with other disciplinary policies targeting the labor process.

Before this regulation, in the Imperial Arsenal and in other state establishments, employees who served for a long time or who were injured by a job accident that made them

\(^{502}\text{DMA.Env.1900/10.}\)

\(^{503}\text{Ibid. This concern on cost-effectiveness of night-time work seems to have led to interrogations when workers were frequently employed at night. See DMA.MKT.165/181, 11 Şevval 1289 (12 December 1872).}\)

\(^{504}\text{Abdullah Martal, "Osmanlı İmparatorluğu'nda Emeklilik ve Buna İlişkin İlk Düzenlemeler," Kebikeç, no. 9 (2000): 39-40; Nadir Özbek, Cumhuriyet Türkiye'sinde Sosyal Güvenlik ve Sosyal Politikalar (İstanbul: Tarih Vakfı Yurt Yayınları, 2006), 46.}\)
unable to work, often petitioned for a pension. Although in most cases they were granted some form of pension for the remainder of their lives, this was never guaranteed, and was often subject to approval by an imperial decree, since there were no clear-cut criteria that regulated the granting of these pensions. Usually petitions were accepted or denied in light of a variety of different factors, including the state of the budget, the skill or status of the worker, the conditions of the worker and his family, and his time spent in the state service. Since there was no fixed law or regulation, the most common reference point was similar and preceding cases. For example, in 1817 Kosti, a carpenter who lost his leg after injuring it with an axe during the construction of a galleon, was allowed to continue receiving his wage and his daily bread for the rest of his life, as well as being exempted from the poll tax. The decision was justified on the basis of a similar grant made to another carpenter, named Yorgi, who lost his arm in another shipyard. Such grants were made due not only to the compassion of the Sultan, according to these documents, but also to the idea that they would also motivate the rest of the workers.505

The use of this reference point by the state was also leading the workers to use it when they were demanding pensions, to justify their claims and positions. Thus, most petitions were referring to “similar cases” (emsal) for this purpose. For example, in 1839 another carpenter who lost his leg petitioned to be granted 45 piasters a month as a pension, by pointing out to a similar case of another worker who was granted the same amount of money after he was injured at work.506 The practice was so well-established that most workers who worked for a long time came to see this as a right. The head painter of the Arsenal, a Garabet, who was dismissed without a pension, wrote in a petition in 1847 that he deserved half of his regular salary as a retirement pension, as was granted “in similar cases”. He was still denied, as he worked only for

505 BOA.C.BH.91/4367, 10 Rebiülevvel 1232 (28 January 1817).
506 DMA.ŞUB.1/117b, 26 Cemaziyülahir 1255 (6 September 1839).
some time, and dismissed since “he was not needed anymore.” In another case, a group of carpenters, caulkers and augerers, whose claims to retirement pensions were accepted, but who were still not put to retirement by the naval administration, went to the Sultan’s Friday Prayer Ceremony to give a collective petition to complain about it, only to draw the protest of the administration for “daring to disturb his majesty” upon a delay caused by procedural problems.

Until the mid-nineteenth century, when the number of employees in state service was much lower, this way of granting pensions to compensate for injuries or for old age, largely worked. However, throughout the Tanzimat Era, when the number of regular employees in state service, both civilian and military, considerably increased, the situation became more chaotic and much costlier, since every pension granted put an extra cost on the budget. Thus, as part of bureaucratic reforms, pensions for soldiers and bureaucratic classes were initially systematized throughout the 1860s and 1870s, by deducting a percentage of an employee’s salary as a premium for retirement. The idea of instituting a social insurance system for the civilian workers in the Imperial Arsenal paralleled these larger efforts to systematize the insurance practices for employees in state establishments.

This trend was in line with the increasing trends in the industrialized world, particularly in Western Europe, to institute welfare policies in the second half of the nineteenth century, in parallel to the rise of heavy industries, including mining, where workers were more liable to job accidents and thus would be more reluctant to work. This was especially the case in contexts where, unlike Britain, the development of these industries preceded, or at least overlapped, with the rise of an urban proletariat. In the Stephanois region in France, for example, where the

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507 BOA.A.MKT.93/20, 3 Ramazan 1263 (15 August 1847).
508 DMA.ŞUB.4/134a, 9 Cemaziyülevvel 1264 (13 April 1848).
509 Martal, "Osmanlı İmparatorluğu'nda Emeklilik ve Buna İlişkin İlk Düzenlemeler," 39.
development of mining industry required a stable labor force, which the region lacked since the working classes were characterized by their ties to their rural homelands, social security benefits specifically served to encourage workers to settle down in cities with their families, by promising to eradicate the sense of uncertainty for doing so. Such welfare institutions were launched largely for industrial working classes, and eventually consolidated the notion of a “male breadwinner,” transforming the gender roles in the family throughout the process.

A more specific reason for the establishment of a social security system in the Imperial Arsenal in this period, however, was explained in a correspondence between the Office of the Grand Vizier and the Ministry of Marine in 1867, eight years before the regulation on the Arsenal workers was approved by an imperial decree. The correspondence was addressing the case of a worker, called Tatos, who injured his fingers in a job accident in the steam-hammer shop (çekiç fabrikası). Apparently, Tatos had asked for a pension to cover his livelihood as he would not be able to work for the rest of his life. According to the correspondence, since there was not a regulation for such workers, and pensions were granted only to some of the workers out of “compassion”, the state was not obliged to pay a pension to such workers. However, the correspondence added, it was obvious that “workers whose future circumstances were not insured would not be interested in working in state service.” Thus, it suggested that, just like it was done for the soldiers, a retirement fund should be established to cover such expenses, by deducting one or two percent of workers’ wages, and that Tatos would be granted 50 piasters as a pension until then.

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511 See Canning, *Languages of Labor and Gender: Female Factory Work in Germany, 1850-1914.*
512 BOA.BEO.AYN.d.988/6, 30 Muharrem 1284 (3 June 1867).
The reason why the traditional practice of granting pensions became a problem to be “regulated” particularly in this period is clear, considering the transformation process in the Imperial Arsenal in the 1860s. The administration was trying to create a regular labor force as a solution to contradictions between the increasing demand for skilled labor and the increasing problems in the payment of wages. Thus, “insurance” for workers’ future became an incentive to convince workers to remain at the Arsenal. On the other hand, as the number of workers substantially increased, and the administration now intended to keep them employed for longer periods, the number of such petitions would rapidly escalate in the near future. In parallel, the cost of these grants would also rise, as a result of the growing number of both the victims of job accidents and the workers who would apply for retirement due to old age.

However, such a system had first to wait for the organization of the labor force by means of the above-discussed regulations and instructions in the early 1870s. Only after these regulations clearly divided the workers into permanent and temporary ones were the efforts to write a social security regulation for the former intensified. A correspondence in 1873, sent from the Ministry of Marine to the Sublime Porte clearly points out how these efforts to install a social security system for regular workers were now justified by rationalized reasons, rather than merely by the discourse of “compassion”. The system would be cost effective, as these regular workers would all expect a certain form of remuneration after retirement or compensation in the case of accidents in the near future. Working in the Arsenal was heavy and challenging, and thus exhausting, as the correspondence admitted, and therefore an insurance system would alleviate workers’ concerns regarding life after leaving the Arsenal, either due to old age or accidents. In addition, the recognition of workers as “permanent workers” could only be functional through
such incentives, as now these workers would not be excluded from the same privileges offered to the conscripts and the civic employees, with whom they worked side by side in the Arsenal.\textsuperscript{513}

The Retirement Fund for local workers, which excluded foreigners,\textsuperscript{514} was first established in December 1873/January 1874 (\textit{Kanun-i Evvel 1289}) and the regulation for how this fund would be administered was prepared throughout 1874, approved and issued in 1875.\textsuperscript{515} Accordingly, two percent of workers’ monthly pay (2 for every 100 piasters, and 1 for every 50 piasters) would be deducted and put into the Retirement Fund. The Fund would have its own office, and workers would gain the right to retirement after 30 years of employment in the Arsenal, when they would be able to claim one third of their monthly pay as a pension. The Fund would also give loans to workers applying for them, on which a one percent interest rate (5 piasters for every 500) would apply, and workers would have to pay them back within a year. This was especially important for civilian workers, whose wages were constantly in arrears in the Arsenal.\textsuperscript{516}

The regulation consisted of articles that clearly aimed to be an assurance on the part of the state to retain the workers by discouraging them to leave the Arsenal to work elsewhere, especially within the context of long arrears and the decreasing number of skilled foreign workers, as a result of their dismissal in the early 1870s. According to Article 20, if a worker wanted to leave, he would not be able to reclaim his money in the Retirement Fund. The following article, on the other hand, allowed such workers to be readmitted if they wanted to

\textsuperscript{513} DMA.MKT.168/51, 9 Zilkade 1290 (29 December 1873).
\textsuperscript{514} This was most likely due to the fact that although they were originally classified as regular workers, by 1875 the Arsenal administration had already begun to replace all of them with native workers. See Chapter 3 for details.
\textsuperscript{515} BOA.İ.MMS.52/2299-4, 5 Cemaziyülevvel 1292 (9 June 1875). For the full text of the regulation see BOA.İ.MMS.52/2299-2.
\textsuperscript{516} Ibid.
come back. However, in this case, they could claim their past premiums for retirement only on the condition that they did not work elsewhere after they left the Arsenal.\textsuperscript{517} In this period of industrial transformation, one of the most important concerns for the Arsenal administration was not to lose especially local workers who gained skills and experience after long years of training and working in the Arsenal. Thus, in this regard, the Retirement Fund became a tool in the hands of the administration to retain the skilled and experienced labor force, who would be more likely to leave especially when they could not receive their wages regularly, and when they had the opportunity to work for higher wages elsewhere.

The Regulation also consisted of systematic benefits for workers and their families as a result of injuries and deaths during employment in the Arsenal. Accordingly, those who were injured in job accidents were divided into two: In the case of first-degree injuries, which led to disabilities that required the permanent care of these workers by someone else, such as the loss of limbs or eyes, workers were entitled to receive three-quarters of their monthly pay as a pension. In the case of second-degree injuries, which did not require care but still disabled them from working, workers were entitled to half of their pay, if they had worked 20 years or more, or the regular pension if they had worked less. If they were not permanently disabled, the Arsenal promised to give them half of their regular pay during their absence. Similarly, if they were absent due to a chronic illness, they were still guaranteed their jobs, subject to documentation of these conditions by the imams or stewards of their neighborhood, although they would be paid for no more than one month’s absence. The regulation also offered benefits to the families of these workers, in case the latter lost their life during employment. If workers died as a result of a job accident, their families were entitled to receive half of their monthly pay. If the cause of death

\textsuperscript{517} Ibid.
was not job-related, then the survivors were still promised a quarter of the monthly pay. These payments would continue until the women in the family (wife or daughters) (re)married and the boys reached the age of 20.\textsuperscript{518}

That the regulation particularly targeted the loyalty of the permanent workers was also proved by the top-down requests to get workers’ consent for this system.\textsuperscript{519} When the system was first launched in 1874, the Ministry asked for the consent of the workers, by means of their representatives, to deduct two percent of their monthly pay to establish the Fund. When the Regulation for the Fund was ready to be issued in 1875, the Sublime Port again asked the Ministry of Marine to take the consent of the workers for the regulation, in order to approve it. In both cases, according to the correspondence of the Ministry, workers declared their consent and support for the practice.\textsuperscript{520} In effect, the Grand Vizier’s correspondence to the Sultan for the approval of the regulation also underlined that “all of the workers gave their consent in gratitude,” although it is difficult to confirm this since the details of these discussions among the workers were less likely documented.\textsuperscript{521}

The government’s concern for seeking the support of workers for a policy that would cost them two percent of their monthly income was not surprising. The process overlapped with the increasing discontent among the workers upon their persistently delayed wages, which was brought to a new level in 1873, when workers, with their wives and/or mothers, gathered around the \textit{Divanhane} (Headquarters of the Ministry) to demand their unpaid wages, which was interpreted in a correspondence as an attempt to “coerce the government by means of rebellion

\begin{thebibliography}{99}
  \bibitem{518} Ibid.
  \bibitem{519} The limitation of retirement benefits to regular workers was also characteristic of similar arrangements made in other state and private establishments, like ferry and railway companies, in the following decades. See \textit{Yıldırım, Osmanlı’da İşçiler (1870-1922): Çalışma Hayatı, Örgütler, Grevler}, 309.
  \bibitem{520} BOA.İ.MMS.52/2299-3, 19 Rebiülahir 1292 (25 May 1875).
  \bibitem{521} BOA.İ.MMS.52/2299-4, 4 Cemaziyülevvel 1292 (8 June 1875).
\end{thebibliography}
hükümeti isyan suretiyle cebr altına alarak)’’ to achieve their goals.\textsuperscript{522} Workers continued to demand these wages not only by not working, but also preventing others from working, and by presenting collective petitions during the Sultan’s Friday Prayer Ceremony.\textsuperscript{523} This context of social crisis, as well as its dangers for the stability of production, most likely added further impetus to the government’s efforts to maintain and increase workers‘ loyalty and commitment to the Arsenal. However, the state elites had to proceed cautiously, since the regulation was intending to put the entire financial burden of these efforts on these workers again. Hence, the state’s concerns not to alienate the workers from the process.

Indeed, even after the financial crisis erupted with the state bankruptcy in 1875, the policy remained popular among the workers, as proved by the demand of workers employed in ironclad construction to be enrolled in the system. By means of their foremen, the workers applied for an enrollment based on the reason that their work was also liable to job accidents. Originally, by the time of the classification between permanent and temporary workers, these workers had been classified under the second, as there was only one ironclad being constructed at the time, which was finished in 1874. By 1876, it became clear that ironclad construction would be a permanent task in the Arsenal. Therefore, in response to this application, these workers were also switched to a permanent status, and were enrolled in the social security system.\textsuperscript{524} Nevertheless, the crisis hit the Retirement Fund as well, when the number of civilian workers dramatically decreased to 800 by 1879 as a result of dismissals, bringing the Fund to the brink of bankruptcy. As this would disable the government to pay the pensions and thus would lead to

\textsuperscript{522} DMA.MKT.155/81, 24 Zilkade 1289 (20 January 1873).
\textsuperscript{523} DMA.MKT. 155/82, 26 Zilkade 1289 (22 January 1873). See also Chapter 3 for the repercussions of these strikes.
\textsuperscript{524} BOA.İ.DH.717/50103, 16 Muḥarrem 1293 (12 February 1876).
more discontent, the government increased the rate of deductions from two to five percent of the wages in this period.525

**Epilogue: Who were Arsenal Workers?**

In this chapter, I have discussed how a factory regime was formed through regulations and instructions by the early 1870s. These instructions and regulations aimed to intensify the control over the labor process, in harmony with the sophistication of production process and the division of labor throughout the era of transformation in the Imperial Arsenal. As a result, in addition to a more complicated system of labor control, which had its own bureaucracy, the administration also adopted capitalist techniques of management, by enforcing time-discipline and implementing policies that aimed to mobilize the consent of workers to continue working in the Arsenal.

This process was particularly important for the goal of transforming craftsmen and casual wage workers into “arsenal workers”, workers who were dependent on (and, thus, loyal to) their workplace, throughout the mid-nineteenth century. In other words, the making of a factory regime in this way further consolidated the class positions of the administration on the one hand, and the workers on the other. This chapter has highlighted that this consolidation was not exclusively an outcome of objective transformations that consisted of the increasing rate and sophistication of production and division of labor in the production process. The course of production politics and the apparatuses that systematically addressed the relations between the workers and the administration also intensified the increasing loss of workers’ control over the labor process. Thus, it was not only the material transformation of the labor processes, but also

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525 See BOA.İ.ŞD.48/2649, 14 Şevval 1296 (1 October 1879).
the specific policies of the Arsenal administration to control these processes that intensified workers` alienation from their labor.

This increasing alienation from their particular crafts also overlapped with their increasing dependence on and perhaps identification with the Imperial Arsenal especially throughout the late nineteenth century. Increasingly after this, at least government documents and periodicals would simply refer to these workers as “arsenal workers” rather than mentioning their specific crafts or tasks within the Arsenal. We unfortunately lack sources written by these workers, which would give us a better idea of whether, and how, their self-identification also changed throughout this process of alienation. Nevertheless, at least documents regarding the collective actions of the late nineteenth and early twentieth century suggest that at times hundreds of workers from different workplaces in the Arsenal could come together in collective protests, and most of these protests took place around the headquarter of the Ministry of Marine, located in the Imperial Arsenal. Thus, whereas the factory regime, including the spatial-administrative organization of these workers, alienated and divided workers with the increasing penetration of the state into the labor process, it also created new spaces for these workers to share their experiences, relate to one another and come together, which likely played an important role in the formation of these protests. These shared experiences and relations at workplace would also be corroborated by their shared spaces in everyday life outside the Arsenal, as most of them, as regular/permanent workers, started to live with their families in the emerging working-class neighborhoods around the Arsenal during this period.

Although a more directed research is needed to elaborate these everyday experiences and relations, the information on the cultural profile of workers in the Imperial Arsenal could serve as a starting point for this purpose. Although the actual number changed due to the high frequency of turnover, until the crisis of 1875, after which hundreds of workers were dismissed in large
numbers, the Imperial Arsenal employed 5,000-6,000 workers. There were around 3,000 regular civilian workers, in addition to around 1,500 conscripts, around 150-200 British workers, and 500-800 workers. All of these workers were male, a fact on which the Ottoman bureaucrats based their case against a French woman doctor in 1857, who requested the permission to examine the prisoners in the Bagnio twice a week. The administration refused, not merely because of the fact that there was no necessity for an additional physician, but also on the ground that “women are forbidden to enter the Arsenal since time immemorial.”

Perhaps the most important source for the identities of these workers is the wage registers of the era, which not only documented their names, wages, and the number of days they worked, but also, for the sake of identification, their fathers’ names, badge numbers, and occasionally their neighborhoods (in Istanbul) or their hometowns. Since they were categorized alongside the by-then complicated division of labor, rather than their religious communities, we have little knowledge about their ethnic-religious background. Still, an onomastic analysis of the names can give us some clues about the ethno-religious distribution of these workers. The following section will focus on one of the complete registers of civilian workers (both regular and irregular), as by the 1870s almost all conscripts consisted of Muslims.

In April/May (Nisan) 1871, there were 3,794 civilian workers who were registered on the monthly roster (excluding the British, who were registered separately, since they were mostly paid in British pounds, or their equivalent). As part of the spatial-administrative division we

526 “…derun-i tersaneye nisa taifesinin girmesi dahi minelkadim memnu bulunmuş...” DMA.ŞUB.31/215a, 17 Safer 1274 (7 October 1857).
527 DMA.Env.742 for Nisan 1287 (April/May 1871). See Appendix C for the distribution. The numbers here are based on an onomastic analysis of DMA.Env.742, and thus should be approached with caution, for while it is relatively easy to distinguish names on the basis of religion, it is rather challenging and open to possible mistakes when we attempt to categorize them according to sects and ethnicities. Here, I will mostly follow the recent attempts by Kırlı, Kabadayı, and Kırlı&Başaran, by trying to identify workers according to their possible belonging to four major etho-religious populations within the Empire, namely
have detailed above, these workers were divided into four main units: The sites of Manufacture and Construction, the Square, and the Drydocks. According to the distribution, almost two-third of the workers were Muslims, whereas the second largest group was Armenians, with much lower numbers of Orthodox Christians and Jews. In 1828, Macfarlane reported that the overwhelming majority of skilled artisans were Greeks and Armenians, although there were a considerable number of “Turks” among the carpenters. This perception of an ethnic and/or religious division of labor between different communities, which dominated mainstream historiography for a long time, has recently been challenged by the above-cited works by Kırıl, Kabadayı, and Kırıl & Başaran, who in different studies showed ethnic-religious diversities within most of the craft populations in Istanbul. This register largely confirms these studies, although there were some occupational groups where a single community was overwhelmingly present, at least in this period, which is worth highlighting.

Muslim workers, who constituted “a good number” of carpenters in 1828 according to Macfarlane, came to dominate the production of wooden shipbuilding by 1871. According to the register, those who were employed in the construction and maintenance of wooden vessels,

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MacFarlane, Constantinople in 1828: A Residence of Sixteen Months in the Turkish Capital and Provinces: With an Account of the Present State of the Naval and Military Power, and of the Resources of the Ottoman Empire, II, 256.
mostly as carpenters, augers, and caulkers (distributed to different sites, except the
Manufacture) were almost exclusively Muslim. Although, until the Greek War of Independence,
the government mostly drafted workers from coastal areas where Greeks were a majority due to
their experience with shipbuilding, and although it attempted to draft them as soldiers at least
until 1856, official distrust toward the employment of Greeks in such a critical military industry
seems to have continued.\textsuperscript{529} Indeed, Kabadayı’s findings also support this explanation, as the
number of Orthodox Christians were also very low, compared to, for example, Armenians, in the
Fez factory, another military-industrial establishment in Istanbul.\textsuperscript{530}

Another equally possible explanation, however, was the problem of labor draft by this
period. As discussed in Chapter 1, forced labor draft became increasingly challenging, especially
when it came to non-Muslim populations due to the possible interventions of European powers
using this as a pretext. Indeed, that there were still Orthodox Christians (at least 88 of all
workers), and that they overwhelmingly dominated at least one of the crafts might underline this
dimension: Out of the 30 masons (duvarcı) who were employed as regular workers in the Square,
21 of them were Orthodox. In any case, the reason for the overwhelming dominance of Muslims
in wooden shipbuilding and the relative absence of Greeks should be understood within the
socio-political context of the Tanzimat Era.

\footnotesize{\textsuperscript{529} An important proof of how the issue of distrust against the Greeks still mattered even decades after the
Greek Revolution is a petition by the head-augerer of the Arsenal, named Yanko, who, in a petition in
1851, argued that he was put to retirement against his will, although he worked 46 years in the Arsenal
(apparently, somehow, surviving the 1820s). When Yanko applied more than once to be recruited, due to
the low amount of his retirement wage, he heard that the reason he was discharged was his being a
“Yunan” (citizen of Greece), an allegation which he denied. In response, his petition was rejected on the
ground that his post was already given to someone else (a Muslim) and that all civilian workers would
gradually be discharged after the Sultan’s edict in 1850 (see Chapter 2). BOA.A.MKT.NZD.41/54, 26
Şevval 1267 (24 August 1851).

\textsuperscript{530} Kabadayı, "Working in a Fez Factory in Istanbul in the Late Nineteenth Century: Division of Labour
and Networks of Migration Formed Along Ethno-Religious Lines," 78-80.}
Another visible pattern of occupational divisions along ethnic-religious affiliations concerns the employment of Armenians, whom the above-cited source in 1828 mentioned to constitute almost the entire “smiths”. In 1871, there were a noticeable number of Armenians in factories in the Manufacture, particularly in the Ironworks, where at least 51 out of 185 workers were Armenians. However, most of the rest of Armenians in the Arsenal were employed either as porters or day-laborers. Indeed, their numbers in the Manufacture might be misleading in this sense, as there were also many day-laborers and porters who were registered to a factory, most of them Armenians. This is the case for example in the Yalıköşkü (Engine) Factory, where out of the 34 Armenians (of 94 workers in total) 31 were employed as rençbers. This is not surprising, as recent research on Armenian migration to Istanbul from Eastern provinces in the nineteenth century has shown that most of them worked as porters and day-laborers in Istanbul. This also may be an outcome of a socio-political process, rather than a mere ethnic-religious “division of labor”. In his research on port workers in the nineteenth century, Donald Quataert suggested that this increasing dominance of immigrant Armenians among lower-classes should be understood within the context of the abolition of the Janissaries in 1826, whose popular support largely rested on Muslim lower classes. As part of efforts to undermine this popular support, the state elites likely encouraged or allowed the immigration and employment of Armenians, who were seen as loyal to the state at the time, at the expense of Muslims.

531 Such migrant workers would join the Armenian demonstrations in support of the Armenian rebellions in Eastern provinces in the 1890s, as a result of which most of them would be dismissed from state factories afterwards. See Florian Riedler, "Armenian Labour Migration to Istanbul and the Migration Crisis of the 1890s," in The City in the Ottoman Empire: Migration and the Making of Urban Modernity, ed. Malte Fuhrmann Ulrike Freitag, Nora Lafi and Florian Riedler (New York: Routledge, 2011).

In spite of these patterns, if we put aside wooden shipbuilders (carpenters, augerers, and caulkers) and the only craft group who were identified with a religious community, the Jewish Tinsmiths (Tenekeci-i Yahud), there are also examples that underline the ethnic-religious diversity and co-existence of labor in the Arsenal. Even among port workers and day-laborers, where Armenians were a majority, around 30 percent of these workers were Muslims. Indeed, although most overseers (çavuş) of columns (kol or posta) were also Armenians, in almost all of them Muslims and Armenians worked together. Similarly, in some other worksites such as the Joiners’ Shop, the Ironworks, and the Boiler Shop, workers from different ethnic-religious backgrounds did the same jobs, working side by side.

Unfortunately, we do not have a solid evidence clearly demonstrating whether, and how, these ethnic-religious patterns played a role in workers’ discontent. However, silences might be meaningful. Almost none of the official documents concerning wage workers’ discontent, including their strikes, throughout the mid-nineteenth century referred to the ethnic-religious belongings of these workers. This may indeed point out to the possibility of the development of a solidarity based on shared experiences in the same workplace, particularly among civilian wage workers, many of whom worked side by side for long years as “permanent workers” in the Arsenal. Thus, while it cannot be denied that common language, religion or sect was an important component in the building of solidarity among the workers, many of them may have developed an equally important relationship based on their shared experiences at the workplace over long years.

533 This was a small group of 17 craftsmen, according to the register, and they had been employed in wooden shipbuilding in the Square. However, they were not peculiar to this period, as registers of earlier decades show that they had been categorized as such traditionally.
Aside from shared work experience and ethnic-religious background, an equally important pattern that tied workers to each other was a shared hometown or neighborhood. Unfortunately, most registers lack a complete list of these hometowns/neighborhoods, but based on what we have, there are again some visible patterns. On the one hand, there are cases where a considerable number of workers shared not only the same workplace, but also the same neighborhood in Istanbul. For example, in the roster of the Boiler Shop, where 186 workers were employed, there were 16 workers from Kasımpaşa and 32 workers from Hasköy, neighborhoods immediately adjacent the Arsenal. As discussed in Chapter 3, almost all of the British workers, who were not listed in this roster, also settled in Hasköy. Given that many other workers were settled close by, in addition to the immigrants most of whom lived in bachelor inns in or near these neighborhoods, it is highly likely that workers’ interaction was not limited to their workplace.

On the other hand, there seems to have been distinct migration patterns, as a considerable number of workers came from the same towns, provinces, or regions. Many among the wooden shipbuilders (carpenters, augerers, and caulkers) came from Black Sea towns or their surroundings. Among the 304 carpenters employed in the Square, at least one third came from the towns of the Kastamonu province, located on the Western Black Sea, 45 of them from the same town (Gerze). Similarly, although this register does not identify the hometowns of porters and day-laborers, other registers from the era suggest that most of them came from Eastern Anatolia. In effect, this may be at least one of the factors that explains the co-existence of both Muslims and non-Muslims working in the same column.

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534 See, for example, DMA.Env.676, 1282 (1865-66).
Indeed, there are signs that shared hometown can also be used as a ground for solidarity, to the level that it could transcend both ethnic-religious and workplace divisions. A good example is a petition from 1859, given by the arsenal workers from Şirvan, a town in Eastern Anatolia in the Bitlis Province. The petition complained about the injustices of the local notable (derebey) of the town and demanded that the High Council (Meclis-i Vala) order him to be brought to the capital and tried for his actions, since workers could not sue him in the town due to his local power there. The petitioners particularly underlined that their numbers in the capital exceeded one thousand, and that they consisted of both Muslims and non-Muslims (in this case most of them were most likely Armenians).\textsuperscript{535}

How did such relations have an impact on workers’ self-identification? How did everyday relations, identities, solidarities, and networks weave through class relations and experiences in this period? Such questions beg a systematic research on the everyday life and relations of these workers. However, even the limited set of data outlined above is enough to demonstrate that the answer is complicated enough to trigger many new and exciting questions about the industrial working classes in the nineteenth century Ottoman Empire.

\textsuperscript{535} BOA.MVL.588/42, 10 Muharrem 1276 (9 August 1859).
CONCLUSION

“An Englishman I once met told me that he had called on the late Minister of Marine, who asked him to go through the works and give him his opinion of them when he returned. This he did, and when he returned his Excellency asked him his opinion in Turkish. The Englishman replied in the same language, ‘Excellency it is a huge scrap heap.’”

In 1875, the Ottoman State declared a moratorium, since it was unable to pay its debts, thus bringing the entire industry almost to a halt in the capital. Throughout the next few years, the Empire went through perhaps one of the most chaotic periods in its six-centuries long history. In 1876, Sultan Abdulaziz was overthrown by a coup, and shortly after committed suicide (or, allegedly was murdered); his successor, Sultan Murat V, survived the political intrigues for barely a few months, before he was overthrown by yet another coup and replaced by Sultan Abdulhamid II. In 1876, the first constitution in Ottoman history was announced, and was followed by elections and the convening of the first parliament. Both the constitution and the parliament, however, could not survive the devastating war with Russia in 1877-78, which cost the Empire a large chunk of its territories and control especially in the Balkans. Their suspension by Abdulhamid II paved the way for his autocratic rule which lasted for thirty years, and was brought to an end by a constitutional revolution in 1908, a year after which he would be overthrown as well. Although some investments and reforms were made especially in his first

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536 Tershana—A Turkish Shipyards,” The Engineer, 8 December 1905.
decade, Abdulhamid’s interest in the navy and the Arsenal was far from that of Abdulaziz, allegedly due to his fear that a possible coup against him would be supported by the navy.

The reply of the Englishman who was asked for his opinion on the state of the Imperial Arsenal in 1905, perfectly encapsulates the present-day perception among historians on the Ottoman experience of industrialization, and thus on industrial workers in the nineteenth century. This dissertation is not an attempt to prove otherwise. Its intention is not to judge the success, or failure, of industrialization -or, on a larger level, the process of “modernization”- in the Ottoman Empire. Nor is its aim to discuss whether there was an “industrial working class” in the Ottoman Empire. This dissertation initially developed as a response to the observation that the eventual failure of certain industries in the nineteenth century, due to either competition or, as in the Arsenal’s case, political-economic crises, has cast an overwhelming shadow on a remarkable portion of historical actors and experiences, rendering them invisible as if they never existed at all. This work offers to shift the focus of analysis to a different level, to the experiences of workers-regardless of how posterity has identified them- who lived through an era of unprecedented change and transformation.

An analysis of these experiences, as this dissertation has sought to demonstrate, could show us that in a site of production, what is produced may be more than capital-labor relations. Chapter 1 and 2 revealed the links between the capital-labor relations in the Arsenal and state-formation efforts led by the state elites. The increasing concerns over efficiency and productivity pushed the state elites in the first half of the nineteenth century to reorganize capital-labor relations in the Arsenal, and this effort went hand in hand with the reorganization of the state structure. The success and failure of these initiatives, however, was largely decided by popular responses against these efforts. Chapter 3 identified the connections between the transformation of the relations of production and the trans-border mobilities and movements within the context.
of the impacts of the Industrial Revolution on naval competition. The necessity of technological transformation, coupled with the failure of militarization efforts in the Arsenal, made the production process increasingly dependent on skilled wage labor, particularly British workers, whose experiences and struggles pushed the Ottoman state elites to develop alternative schemes to overcome this dependency, and thus would be central to the formation of capitalist class relations in the Arsenal. Chapter 4, on the other hand, underlined how the introduction of modern schools in the Tanzimat Era was not merely an effort to convert “subjects” to “citizens”, but also an attempt to create an industrial working class compatible with the contemporary requirements of modern capitalism. This initiative was particularly a response to the increasing visibility of the urban poor and the concerns to decrease dependence on skilled wage labor. The fifth and final chapter highlighted how the Ottoman elites tried to consolidate these efforts and transformations by introducing a factory regime, which aimed to mobilize the fruits of the transformation processes in state and industry to further systematize the extraction of profits from the labor process. In short, from modern conscription to the emergence of modern schools and factories, historical processes that we identify with “modernity” were, at least partially, either produced or reproduced within this “hidden abode of production.” The Imperial Arsenal was a place that produced not merely the class relations in modern capitalism, but also what we understand by “modernity” itself.

This argument should not mislead us to think that the narrative here exhausts the entire complexity of working-class experiences, both in the Arsenal and other workplaces. Although many dimensions of this narrative, from the employment of conscripts to the migration of foreign workers, seem to have taken place in other state-military factories, such as the Imperial Gun Factory (Tophane) or the Zeytinburnu Ironworks, future studies on these state establishments in the mid-nineteenth century will hopefully complicate this narrative. Similarly, the experiences of
working classes at the privately-owned workplaces in this process still largely remain in the dark, a fact that only highlights the limits of a study that focuses specifically on a worksite, even if it was perhaps the largest one of its counterparts and lay at the heart of the Ottoman efforts to adapt to the global processes of modern state-formation and industrialization in the nineteenth century. Still, the findings of this dissertation will hopefully encourage further studies on the experiences of urban working classes in the nineteenth century Ottoman Empire. Acknowledging the significance of these experiences promises to deepen and complicate historical analyses of Ottoman/Middle Eastern societies, especially by revealing the class dynamics in the formation of the Modern Middle East.

A micro-historical analysis of specific worksites could reveal a great deal for labor history studies, especially when it is informed by recent methodological contributions in both social/labor history and world history. This dissertation has used these approaches by focusing on the relations of production, a focus that brings its own advantages, in addition to new questions for research. First, a focus on the transformation of the relations of production extends the scope of labor history and class analysis, as it shows that wage-labor was (and is) not the single component of capitalist class relations. In effect, as this dissertation has shown, from conscripts to convicts and forced laborers, coerced forms of labor are as integral to the making of capitalist relations as wage labor. In addition, this focus also reveals that throughout historical processes, the methods of recruitment and employment were fluid and complicated enough to argue against a strict and ahistorical categorization between “free” and “unfree” labor, as the very definition of “freedom” was subjective as well as being subject to change historically.

An equally important benefit of a focus on the relations of production is the opportunity it gives labor historians to transcend political boundaries that have constrained the scope of historical analyses of working classes and their experiences. This dissertation has demonstrated
that the formation of capitalist class relations cannot be fully understood outside global processes or trans-border movements and connections. Following the transformation of production processes is an opportunity to highlight the connections that cross-cut political boundaries, as this dissertation has shown in the example of technology and labor transfer. In addition, approaching foreign workers through their national affiliation or their status and/or wage-based differences with local workers, however important they are, should not lead historians to miss how their role in the relations of production situated them in the same ranks with their local counterparts, through similar processes of exploitation. In other words, a focus on production encourages us to remember that political (and/or national boundaries) should not overshadow the larger scope of experiences and relations of working classes.

In addition to extending the scope of working class analyses, this focus also promises to expand the frontiers of working-class agency, which labor historians have largely limited to strikes and collective action at the workplace. This dissertation breaks away from many of its counterparts in labor history by not specifically focusing on strikes and demonstrations. Indeed, especially before the 1860s, going on strike seems to be a marginal way of discontent among the workers of the Imperial Arsenal. A main reason for this was the fact that a large part of the labor force did not identify themselves as “arsenal workers” in the modern sense of the word, who saw their lives and futures tied to a specific workplace. As we saw in Chapters 1 and 5, even the carpenters, augerers, and caulkers, who constituted the regular part of the labor force, opted not to come regularly to the Arsenal to work elsewhere, and when they came, they tried to compensate their low wages in more “hidden” ways, rather than engaging in an open confrontation with their employer. On the other hand, as the remaining, and larger, part of the labor force mostly consisted of different forms of coerced labor, the main way of contention was not striking but rather desertion, or running away from work. In other words, strike, as a systematic tool of
negotiation between capital and labor, seems to belong to a period when a considerable part of the labor force consisted of wage workers who started to see themselves and their futures more permanently tied to their jobs in a specific workplace. Thus, although going on strike was always a tool in the repertoire of contention among wage workers perhaps for centuries, that it was more frequently and systematically used starting with the second half of the nineteenth century had largely to do with the transformation of capital-labor relations.

An equally important use of analyzing the relations of production could only partially be addressed in this dissertation. How did the transformation of capital-labor relations shape urban modernity, including the everyday experiences of working classes outside the site of production? By the late nineteenth century, aside from the Imperial Arsenal, the Ottoman capital became a largely industrialized city, where large-scale state factories were joined by privately-owned factories and workshops especially around the Golden Horn. This process was accompanied by the transformation of the city into a hub of capitalist trade networks, especially with the advent of steamships and railways, which substantially expanded the size of working-class populations in the city. An important result of this was not merely the increasing presence and visibility of working-classes in the capital, but the possible impacts of their settlements and movements on the urban transformation processes of the nineteenth century.

In parallel to the transformation of production relations, which by the 1870s significantly increased the role of both local and migrant wage labor within the labor force, these workers, including the foreigners among them, started to expect working on a less temporary basis, identifying themselves more permanently with their workplace. Understanding this process is important for understanding urban modernization, because as we saw in the case of British workers in Chapter 3, expecting to work more permanently paved the way for settling on a more permanent basis, bringing in their families, building or buying houses in the city. Indeed, as also
documented in Chapter 5, aside from a considerable number of migrant workers, many of whom likely lived in bachelor inns close by, many workers in the Arsenal were resident in neighborhoods around their workplace, particularly in Hasköy and Kasımpaşa, according to the wage registers of the 1870s.

This phenomenon was most likely not limited to the Imperial Arsenal, as the second half of the nineteenth century witnessed the emergence of other industrial settings especially around the Golden Horn, as well as the growing numbers of workers in other sectors, such as the port workers, many of whom most likely lived in these and other neighborhoods side by side. It was not a coincidence that in exactly this period, the Tanzimat Regime initiated a series of urban reforms in the capital, expanding the efforts to “put everything into an order” to urban spaces. These urban policies ranged from the institutionalization of policing to the spatial reorganization of certain neighborhoods, particularly the ones where middle and upper classes resided, along its European counterparts.537

What was the connection between the rise of urban working classes, their visibility, their settlements, and their movements in the city on the one hand, and the making of these urban reforms on the other? A research agenda along this line promises to reveal much about the ways class formation processes were complicated in everyday life and relations, and about the class dynamics of urban modernity. Parts of this dissertation give at least a glimpse of this connection. British workers in Hasköy actively sought to transform their neighborhood not only by building a “colony” there but also transforming it along their own notions of what an urban space should look like. Chapter 4 also discussed how the increasing concerns over urban poverty among the

urban elites in this period led the government to attempt to convert them to industrial workers by means of vocational schools in the Arsenal.

Still, this is far from being enough to reveal the connections between working-class formation and urban modernity, which would pave the way for a deeper understanding of working-class culture(s) in this period as well. In addition to worksite-specific studies, we may also need a more neighborhood-based studies for this purpose. Hasköy, for example, was a particularly interesting neighborhood that could shed light on how cultural identities and space could impact working-class formation. Originally a Jewish village, in the 1860s and 70s, it became home to the hundreds of British workers and their families in the Arsenal. Aside from them, the wage registers of the Arsenal tell of the presence of Muslim and Christian workers who resided in this neighborhood. Clearly, the village became a largely working-class neighborhood thanks particularly, if not exclusively, to the transformation processes in the Arsenal throughout the nineteenth century. However, it is equally clear that this is only part of the story. The rest is yet to be written.

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538 See, for example, Cem Behar, "A Neighborhood in Ottoman Istanbul Fruit Vendors and Civil Servants in the Kasap Ilyas Mahalle," (Albany: State University of New York Press, 2003).
APPENDIX A: THE SCHEME FOR THE FORMATION OF LABOR BATTALIONS IN THE IMPERIAL ARSENAL (1838)\(^{539}\)

<table>
<thead>
<tr>
<th>Craft</th>
<th>Present Number of Workers to be Registered to Labor Battalions</th>
<th>Present Total</th>
<th>Soldiers</th>
<th>Craftsmen/Civilians</th>
<th>Soldiers Promoted</th>
<th>Craftsmen Promoted</th>
<th>To be dismissed</th>
<th>Remaining</th>
<th>Planned Total</th>
<th>To be Drafted</th>
</tr>
</thead>
<tbody>
<tr>
<td>To be Drafted from among the Naval Conscripts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carpenters (Shipwrights) (marangozan)</td>
<td>939</td>
<td>122</td>
<td>414</td>
<td>0</td>
<td>180</td>
<td>223</td>
<td>716</td>
<td>1070</td>
<td>354</td>
<td></td>
</tr>
<tr>
<td>Caulkers</td>
<td>240</td>
<td>84</td>
<td>77</td>
<td>0</td>
<td>69</td>
<td>10</td>
<td>230</td>
<td>425</td>
<td>195</td>
<td></td>
</tr>
<tr>
<td>Augerers</td>
<td>130</td>
<td>5</td>
<td>76</td>
<td>0</td>
<td>45</td>
<td>4</td>
<td>126</td>
<td>267</td>
<td>141</td>
<td></td>
</tr>
<tr>
<td>Block Makers</td>
<td>60</td>
<td>43</td>
<td>0</td>
<td>0</td>
<td>17</td>
<td>0</td>
<td>60</td>
<td>106</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>Boxmakers (kutucu) and Joiners (doğramacı)</td>
<td>11</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>9</td>
<td>2</td>
<td>9</td>
<td>106</td>
<td>97</td>
<td></td>
</tr>
<tr>
<td>Painters (nakkaş)</td>
<td>24</td>
<td>0</td>
<td>4</td>
<td>7</td>
<td>11</td>
<td>2</td>
<td>22</td>
<td>107</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>Sailmakers (duhte-i badban)</td>
<td>63</td>
<td>43</td>
<td>0</td>
<td>3</td>
<td>14</td>
<td>3</td>
<td>60</td>
<td>107</td>
<td>47</td>
<td></td>
</tr>
<tr>
<td>Rowboatmakers (piyadeci) and Carvers (öymacı)</td>
<td>37</td>
<td>15</td>
<td>0</td>
<td>2</td>
<td>16</td>
<td>4</td>
<td>33</td>
<td>108</td>
<td>75</td>
<td></td>
</tr>
<tr>
<td>Turkish Sawyers</td>
<td>36</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>34</td>
<td>2</td>
<td>84</td>
<td>82</td>
<td></td>
</tr>
<tr>
<td>Cabinetmakers (Tavşanan)</td>
<td>57</td>
<td>28</td>
<td>5</td>
<td>1</td>
<td>17</td>
<td>6</td>
<td>51</td>
<td>107</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>Ironsmiths of Anchorhouse &amp; “workers for newly invented iron tools (çilingiran-i nevicad)”</td>
<td>121</td>
<td>9</td>
<td>85</td>
<td>0</td>
<td>27</td>
<td>0</td>
<td>121</td>
<td>160</td>
<td>39</td>
<td></td>
</tr>
<tr>
<td>Stonecutters and barrelmakers</td>
<td>43</td>
<td>19</td>
<td>9</td>
<td>12</td>
<td>3</td>
<td>0</td>
<td>43</td>
<td>87</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>Coppersmiths</td>
<td>20</td>
<td>0</td>
<td>10</td>
<td>0</td>
<td>6</td>
<td>4</td>
<td>16</td>
<td>30</td>
<td>14</td>
<td></td>
</tr>
<tr>
<td>Sheave-makers (Dilciyan)</td>
<td>11</td>
<td>0</td>
<td>7</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>11</td>
<td>20</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Guards (Vardiyanan)</td>
<td>195</td>
<td>0</td>
<td>143</td>
<td>0</td>
<td>41</td>
<td>11</td>
<td>184</td>
<td>266</td>
<td>82</td>
<td></td>
</tr>
</tbody>
</table>

\(^{539}\) Based on BOA.HAT.1243/48301F. See Chapter 2 for details.
To be drafted from Istanbul

<table>
<thead>
<tr>
<th>Craft</th>
<th>From Istanbul</th>
<th>From the Provinces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workers of Ironworks and the like (including mechanics, pump-makers, etc.)</td>
<td>45</td>
<td>0</td>
</tr>
<tr>
<td>Boilermakers</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>Founders</td>
<td>50</td>
<td>0</td>
</tr>
<tr>
<td>Misc. (chestmakers, polemakers, moldmakers, glassmakers, sewermen, tinsmiths, augerparts)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Joiners (in shipbuilding) (Neccaran)</td>
<td>120</td>
<td>0</td>
</tr>
<tr>
<td>Ironsmiths (in shipbuilding) and the like</td>
<td>280</td>
<td>9</td>
</tr>
<tr>
<td>Plasterers and Masons</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>Daylaborers, porters, and the like</td>
<td>866</td>
<td>0</td>
</tr>
<tr>
<td>Sawyers from Chios</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>3384</strong></td>
<td><strong>377</strong></td>
</tr>
</tbody>
</table>

Exclusively, “since it would not be possible to procure them from elsewhere (haricden tedariki mümkün olamayacağı cihetle).” Ibid.

Five workers per each craft, except for making auger parts (mülhakat-i burgu), for which ten craftsmen would be drafted, in addition to an officer. Ibid.

As many of them as possible to be drafted from Istanbul, and the rest from the provinces. Ibid.
# APPENDIX B: AN OVERVIEW OF THE LABOR FORCE IN THE IMPERIAL ARSENAL (1870)\textsuperscript{543}

<table>
<thead>
<tr>
<th>Permanent (Daimi)</th>
<th>Manufacture (İmalat)</th>
<th>Construction (İnşaiye)</th>
<th>The Square (Meydan)</th>
<th>Drydocks (Havuzlar)</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workers</td>
<td>707</td>
<td>797</td>
<td>1112</td>
<td>488</td>
<td>3104</td>
</tr>
<tr>
<td>British Workers</td>
<td>85</td>
<td>43</td>
<td>0</td>
<td>0</td>
<td>128</td>
</tr>
<tr>
<td>Conscripts</td>
<td>320</td>
<td>489</td>
<td>188</td>
<td>260</td>
<td>1257</td>
</tr>
<tr>
<td>Civilian Haddad Apprentices</td>
<td>89</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>89</td>
</tr>
<tr>
<td>Military Haddad Apprentices</td>
<td>252</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>252</td>
</tr>
<tr>
<td>Permanent Total</td>
<td>1453</td>
<td>1329</td>
<td>1300</td>
<td>748</td>
<td>4830</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Temporary (Muvakkat)</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Workers</td>
<td>0</td>
<td>371</td>
<td>138</td>
<td>0</td>
<td>509</td>
</tr>
<tr>
<td>British Workers</td>
<td>0</td>
<td>37</td>
<td>0</td>
<td>0</td>
<td>37</td>
</tr>
<tr>
<td>Temporary Total</td>
<td>0</td>
<td>408</td>
<td>138</td>
<td>0</td>
<td>546</td>
</tr>
<tr>
<td>AGGREGATE</td>
<td>1453</td>
<td>1737</td>
<td>1438</td>
<td>748</td>
<td>5376</td>
</tr>
</tbody>
</table>

\textsuperscript{543} Based on BOA.ŞD.2/29. See Chapter 5 for details.
APPENDIX C: ETHNIC-RELIGIOUS DISTRIBUTION OF CIVILIAN WORKERS IN THE IMPERIAL ARSENAL (1871) 544

<table>
<thead>
<tr>
<th>Permanent (Daimi)</th>
<th>Manufacture</th>
<th>Construction</th>
<th>Square</th>
<th>Drydocks</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muslim</td>
<td>505</td>
<td>552</td>
<td>640</td>
<td>358</td>
<td>2055</td>
</tr>
<tr>
<td>Armenian</td>
<td>159</td>
<td>90</td>
<td>327</td>
<td>100</td>
<td>676</td>
</tr>
<tr>
<td>Orthodox</td>
<td>26</td>
<td>4</td>
<td>24</td>
<td>5</td>
<td>59</td>
</tr>
<tr>
<td>Jewish</td>
<td>2</td>
<td>3</td>
<td>17</td>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td>Non-Muslim (Undifferentiated)</td>
<td>62</td>
<td>6</td>
<td>11</td>
<td>7</td>
<td>86</td>
</tr>
<tr>
<td>Unidentified</td>
<td>7</td>
<td>1</td>
<td>17</td>
<td>7</td>
<td>32</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Temporary (Muvakkat)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muslim</td>
</tr>
<tr>
<td>Armenian</td>
</tr>
<tr>
<td>Orthodox</td>
</tr>
<tr>
<td>Jewish</td>
</tr>
<tr>
<td>Non-Muslim (Undifferentiated)</td>
</tr>
<tr>
<td>Unidentified</td>
</tr>
</tbody>
</table>

544 Based on DMA.Env.742. Excludes British workers, includes civilian apprentices. See Chapter 5 for details.
APPENDIX D: MAPS AND PHOTOGRAPHS

The Imperial Arsenal in the 1870s

545 C. Stolpe, “Plan de Constantinople ,avec ses faubourgs, le port et une partie du Bosphore / levé et dessiné par C. Stolpe, vérifié... jusqu'en 1880,” (1880). Source: gallica.bnf.fr/ BnF
The Imperial Arsenal and its Environs, Early Twentieth Century\textsuperscript{546}

\textsuperscript{546} “Plan de Constantinople,” (1918). Source: gallica.bnf.fr/ BnF
Workers in the Boiler Shop, Late Nineteenth Century

Library of Congress, Prints & Photographs Division, Abdulhamid II Collection, LC-USZ62-81725.
A Shipbuilding Slip and its Environs (a view of the Construction sites), Late Nineteenth Century.\textsuperscript{548}

\textsuperscript{548} Library of Congress, Prints & Photographs Division, Abdulhamid II Collection, LC-USZ62-81731.
The Divanhane and the Storehouses (from where the “square” begins), Late Nineteenth Century

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549 Library of Congress, Prints & Photographs Division, Abdulhamid II Collection, LC-USZ62-81730.
A View of a Drydock, Late Nineteenth Century\textsuperscript{550}

\textsuperscript{550} Library of Congress, Prints & Photographs Division, Abdulhamid II Collection, LC-USZ62-81739.
The Boys’ Battalion for Industry, Late Nineteenth Century

551 Library of Congress, Prints & Photographs Division, Abdulhamid II Collection, LC-USZ62-81707.
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A.MKT.MHM., Sadaret Mektubi, Mühimme
A.MKT.MVL., Sadaret Mektubi, Meclis-i Vala
A.MKT.NZD., Sadaret Mektubi, Nezaret ve Devair
A.MKT.UM., Sadaret Mektubi, Umum Vilayet
A.(DVNS.KNA.d., Kanunname-i Askeri Defterleri
BEO.AYN.d. Babıali Evrak Odası Ayniyat Defterleri
C.BH., Çevdet Bahriye
D.BŞM.TRE.d., Babı-i Defteri Baṣmuhasebe Tersane Emini Defterleri
HAT., Hatt-i Humayun
HR.MKT., Hariciye Nezareti Mektubi Kalemi
HR.TO., Hariciye Tercüme Odası
HR.SFR.3., Hariciye Nezareti Londra Sefareti
İ.DH., İrade Dahiliye
İ.DÜİT., İrade Dosya Usülü İradesler Tasnifi
İ.MMS., İrade Meclis-i Mahsus
İ.MSM., İrade Mesail-i Mühimme
İ.MVL., İrade Meclis-i Vala
İ.ŞD., İrade Şura-i Devlet
MVL., Meclis-i Vala
ŞD., Şura-i Devlet
MAD., Maliyeden Müdevver
Y.A.RES., Yıldız Sadaret Resmi Maruzat
Y.MTV., Yıldız Mütevvi Maruzat

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BN., Bahriye Nezareti
Env., Envanterler (Inventories) No: 112, 128, 150, 224, 341, 355, 358, 587, 625, 635, 650,676, 742, 1824, 1897, 1900
İslahat
İlahat
MKT., Mektubi
ŞUB., Şura-i Bahri
Tersane
3. TNA, The National Archives, London

FO, Foreign Office

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