

Avner Wishnitzer

8 “At Approximately Eleven, Just Before Nightfall”: An Introduction to Ottoman Temporal Culture¹

8.1 Introduction

On 16 May 1851 the official Ottoman gazette, the *Takvim-i Vekayi*, informed its readers that upon a decree issued by the sultan, one of the ferries of the Imperial Shipyards (*Tersane-i Amire*) would be assigned to carry regular transportation along the Bosphorus. The ferry, it was said, would depart from the Golden Horn “at approximately eleven o’clock, just before nightfall,” (*akşam üzeri saat on bir sularında*), it would dock at various places along its route, and stop for the night in İstinye, on the northern part of the strait. The boat was to leave İstinye “at approximately four in the morning,” and pass through the same designated locations on its way back to Eminönü, its final destination. Government officials interested in the new service were requested to register with one of the offices at the Sublime Porte.²

This short notice encapsulates within it some of basic features of Ottoman temporality, features that were only poorly understood by contemporary foreign observers, and are still inadequately explained in current research. European travelers often found the Ottomans to be “indifferent of time”, an attribute that was sometimes associated with their alleged laziness and lack of “civilization”.³ Even if more implicitly,

1 This article is based on a doctoral dissertation written at Tel Aviv University under the supervision of Prof. Ehud R. Toledano. I wish to thank Prof. Toledano for his guidance and continuous support. The article was written during a year of post-doctoral research at the University of Washington. I would like to thank my mentor, Prof. Reşat Kasaba, Prof. Walter Andrews, Prof. Selim Kuru, and the participants of ‘Turkish Circle,’ whose comments greatly contributed to this work. This is a good opportunity to thank the Colton Foundation for the generous scholarship I received throughout my PhD studies, and the Fulbright Program for its support during my post-doctoral research.

2 The text is brought in full in *Bogaziçi Sirket-i Hayriye: Tarihçe, Salname* (Istanbul: Ahmed İhsanve Şürekası, 1330/1914), 2–3, no. 1.

3 See for example John Foster Fraser, *Pictures from the Balkans* (London: Cassell & Company, 1912), 120. Lawrence J. L. D. Zetland, *On the Outskirts of Empire in Asia* (London: William Blackwood and Sons, 1904), 31–32. See also Lucy M. J. Garnett, *The Turkish People: Their Social Life, Religious Beliefs and Institutions and Domestic Life* (Whitefish, MT: Kessinger Publishing, 2004 (originally published 1909)), 23. Assessing the progress of civilizations and social groups according to their level of [clock] time consciousness became a common trend in 19th century Europe, and was finally picked up by some Ottoman elites toward the end of that century. For a more comprehensive discussion, see Avner Wishnitzer, “‘Our Time’: On the Durability of the Alaturka Hour System in the Late Ottoman Empire,” *International Journal of Turkish Studies*, 16 (2010): 47–69. In his fine book, *On Barak* explores this connection between the quotidian level of time organization, and notions of progress and modernity. See

some scholarly works on Ottoman history similarly discuss Ottoman temporality, which is often reduced to its religious dimension, in contradistinction to a similarly uniform, one-dimensional modern time consciousness.⁴ Mechanical clocks, allegedly the representatives of secular, empty and homogenous time, are usually identified with the latter. According to most accounts, they remained somewhat alien to indigenous cultures before the second half of the nineteenth century, and attracted interest mainly as gadgets, or as symbols of power and status. One scholar, for example, writes that “the clock, for the Ottomans, was the technological product of a foreign culture” and speculates that, like in China, mechanical clocks were accepted as an “amusing oddity”.⁵ The Ottomans, so it seems, still had to learn how to use clocks “in the proper way,” that is, the European way.⁶

On Barak, On Time: Technology and Temporality in Modern Egypt (Berkeley: University of California Press, 2013).

⁴ See for example Jason Goodwin, *Lords of the Horizons: A History of the Ottoman Empire* (London: Vintage, 1999), 149–158. For an example of a somewhat nostalgic treatment of the very same ‘Turkish time,’ see Şule Gürbüz, “Alaturka Saat, Alaturka Zaman,” in *Zamanın Görünen Yüzü: Saatler*, eds. Şennur Şentürk and Selahattin Özpabalıyıklar (Istanbul: Yapıkredi, 2009), 57–66. See also Touraj Atabaki, “Time, Labour-Discipline and Modernization in Turkey and Iran: Some Comparative Remarks,” in *The State and the Subalterns: Modernization, Society and the State in Turkey and Iran*, ed. Touraj Atabaki (London: I.B. Tauris, 2007), 1–16. Ekmeleddin İhsanoğlu and Feza Günergun, “Osmanlı Türkiyesinde ‘Alaturka saat’ten ‘Alafranga saat’e Geçiş,” in *XUluslararası Astronomi Kongresi (2–6 Eylül 1996)* (Istanbul: İstanbul Üniversitesi Fen Fakültesi, Astronomi ve Uzay Bilimler Bölümü, 1996), 434–441; Doğan Gündüz, “Alaturka Saatten Alafranga Saate Geçiş: Osmanlı’nın Mekanik Saatle Buluşması,” *İstanbul* 51(2004): 120–126; Mehmet Bengü Uluengin, “Clock Towers in the Ottoman Empire and in the Turkish Republic,” *IJMES*, 42/1 (2010): 17–36. See also my critique of Uluengin’s article: Avner Wishnitzer, “A Comment on Mehmet Bengü Uluengin’s “Secularizing Anatolia Tick by Tick: Clock Towers in the Ottoman Empire and the Turkish Republic,” *IJMES*, 42/4 (2010): 537–545. Uğur Tanyeli has made the most significant attempt to understand the Ottoman use of clocks in its context, but even he characterized Ottoman temporality merely as “religious.” See Uğur Tanyeli, “The Emergence of Modern Time Consciousness in the Islamic World and the Problematics of Spatial Perception,” in *Anytime*, ed. Cynthia C. Davidson (Cambridge, Mass: MIT Press, 1999), 162.

⁵ See Fatma Müge Göçek, *East Encounters West: France and the Ottoman Empire in the Eighteenth Century* (Oxford: Oxford University Press, 1987), 105–106. For similar ideas about clocks as ‘gadgets’ or status symbols, see Uğur Tanyeli, “Norms of Domestic Comfort Luxury in Ottoman Metropolises: Sixteenth to Eighteenth Centuries,” in *The Illuminated Table, The Prosperous House: Food and Shelter in Ottoman Material Culture*, eds. Suraiya Faroqhi & Christoph K. Neumann (Würzburg: Ergon Verlag, 2003), 315; Kemal Özdemir, *Ottoman Clocks and Watches* (Istanbul: Creative Yayıncılık, 1993), 144–145.

⁶ In fact, the use of clocks in 18th century Europe was much more diversified than is often supposed. For the reckoning of hours in early 19th century southern Italy, see Peter E. Laurent, *Recollections of a Journey through Various Parts of Greece Turkey and Italy made in the Years 1818 and 1819* (London: G and W. B. Whittaker, 1821), 165. For late 18th century Berlin, see Michael J. Sauter, “Clockwatches and Stargazers: Time Discipline in Early Modern Berlin,” *American Historical Review* 112/3 (2007): 685–709. For late 18th and early 19th century England, see E. P. Thompson, “Time, Work Discipline, and Industrial Capitalism,” *Past and Present*, 38(1967): 56–97. For 18th century Sweden, see Henrik Ågren,

In what follows I examine the use of clocks in the Ottoman Empire not against some model cast along late nineteenth century, western European lines, but in terms of the temporal culture of the Ottomans themselves. The term “temporal culture” is here used to denote a historically created system of time-related practices, conventions, and values that structures the temporal dimension of social interaction and fills it with meaning. The way the Ottomans used clocks, I argue, was shaped by inner logic of their temporal culture and did not upset its coherence. However, over the second half of the nineteenth century, this fabric of practice and meaning began to unravel under the pressures of internal and external changes of unprecedented scale. Ottoman temporal culture then entered a phase of rapid transformation.⁷

8.2 Reading the Clock, *Alaturka* or: When is Eleven O'clock Anyway?

Let us now return to the notice published in the *Takvim-i Vekayi* and start from the basics. In order to understand how eleven o'clock could be “just before nightfall,” there is a need to say a few words about the different ways time was reckoned in the Ottoman Empire. As shown below, several systems were used concurrently and it is therefore important to understand how they related to one another.

The oldest hour system that was still in use in the nineteenth century was the originally Babylonian system of seasonal hours (also known as “temporal hours”). According to this system, the day (*ruz*) and the night (*şeb*) were each divided into a set of twelve units which were counted from sunset to sunrise, and then from sunrise to sunset. It is readily understood that the length of these units changed as the relation between day and night varied throughout the year.⁸ The first hour of daytime, for example, was 1/12 of the entire length of daylight at a specific date and latitude, measured from sunrise. High noon, according to that scheme was always at the end of the sixth hour and sunset, at the end of the twelfth diurnal hour.

“Time and Communication: A Preindustrial Modernisation of the Awareness of Time,” *Scandinavian Economic History Review*, 49/2 (2001): 55–77.

⁷ Given the limited scope, I focus here on some of the more quotidian, practical aspects of Ottoman temporal culture. The complex connections between Ottoman temporality and power, and the meanings associated with time are discussed in my *Reading Clocks Alla Turca: Time and Society in the Late Ottoman Empire* (Chicago: University of Chicago Press, 2015).

⁸ David King, *In Synchrony with the Heavens: Studies in Astronomical Timekeeping and Instrumentation in Medieval Islamic Civilization*, vol. 1 (Leiden: Brill, 2004), 591. On temporal/seasonal hours see also Gerhard Dohrn-van Rossum, *History of the Hour: Clocks and Modern Temporal Orders* (Chicago: University of Chicago Press, 1996), 19. For their adoption and relation to prayer names in Early Islam, see King, *In Synchrony*, vol. 1, 590–596. For the Ottoman context, see Atilla Bir, “Zamanı Belirlemeye Yarayan Aletleri,” in *Osmanlı İmparatorluğunun Doruğu 16.Yüzyıl Teknolojisi*, ed. Kazım Çeçen (Istanbul: Omas ofset A.Ş., 1999), 231–235.

Since it was this scheme that served as the basis for the Islamic prayer cycle, there was a close correlation between the times of the daily prayers and the temporal hours. It is thus appropriate to discuss the prayer cycle in some detail. Prayer times in the early days of Islam were apparently modeled after the seven daily prayers of early Syrian Christianity, with the omission of the sunrise prayer, which had been explicitly prohibited by the prophet. As in Syrian Christianity, the three prayers to be performed during daylight (*duha*, *zuhr*, and *‘asr*) corresponded to the end of the third, the sixth and the ninth temporal hours of daylight. The *duha* prayer, which was performed at mid-morning, was later abandoned and the number of obligatory daily prayers was consequently set at five.⁹

The prayer cycle thus offered a rather convenient, if crude, method for the partition of the day. In fact, it was the prayer cycle, rather than the system of seasonal hours, that directly governed the temporal dimension of social life, and regulated the rhythms of various early modern Ottoman institutions. Markets, for example, were usually opened right after the morning prayer and closed either before the afternoon or the evening prayer.¹⁰ Work routine in the bureaus of the central administration was no different. In the eighteenth century, to give just one example, grand vezirs held a regular council known as *İkinci Divanı*, after the afternoon prayer (*ikindi*), which marked its beginning time. Daily routines in mosque-schools, *medreses*, libraries, *hamams*, and a host of other institutions were likewise punctuated by the prayer cycle.¹¹

⁹ During the 8th century, it became more common to define prayer times in terms of shadow increases, rather than with direct reference to temporal hours. See David King, *Astronomy in the Service of Islam* (London: Variorum, 1993), 250–251; Idem, *In synchrony*, 553–556, 633–634.

¹⁰ There were variations in closing times between different markets and probably between different guilds within the same market. Nevertheless, all pre-defined closing times referred either to the afternoon or to the evening prayer. See Esad Bey, “Siroz’da Esnaf Teşkilâtı ve Cemaat Hayatı,” brought in Osman Nuri Ergin, *Mecelle-i Umûr-ı Belediyye*, vol. 2 (Istanbul: İstanbul Büyükşehir Belediyesi Kültür İşleri Daire Başkanlığı, 1995), 671. See also Charles White, *Three Years in Constantinople or the Domestic Manners of the Turks in 1844*, vol. 1 (London: Henry Colburn, 1846), 3–7.

¹¹ İsmail Hakkı Uzunçarşılı, *Osmanlı Devletinin Merkez ve Bahriye Teşkilatı* (Ankara: Türk Tarih Kurumu, 1948), 136–138; Ali Akyıldız, *Tanzimat Dönemi Osmanlı Merkez Teşkilâtında Reform (1836–1856)* (Istanbul: Eren, 1993), 26. For a more elaborate discussion of early modern work routines in the central administration, see Avner Wishnitzer, “The Transformation of Ottoman Temporal Culture during the ‘Long Nineteenth Century,’” (PhD dissertation, Tel Aviv University, 2009), 99–104. See also Nil Birol, *Managing the Time of the Bureaucrat in the Late Nineteenth Century Ottoman Administration* (an unpublished MA thesis, Boğaziçi University, 2005), 26–40. On the importance of the prayer cycle for the regulation of medrese life, see Cahid Baltacı, XV-XVI. *Asırlar Osmanlı Medreseleri: Teşkilât, Tarih* (Istanbul: İfran Matbaası, 1976), 44; Ahmet Cihan, “Social Life in the Ottoman Medrese,” in *The Great Ottoman Turkish Civilisation*, vol. 2, ed. Kemal Çiçek et. al. (Ankara: Yeni Türkiye, 2000), 646. See also Ziya Kazıcı, *Osmanlı’da Eğitim – Öğretim* (Istanbul: Bilge Yayıncılık, 2004), 163–165; Mehmet İpşirli, “Medrese: Osmanlı Dönemi,” in *Türkiye Diyanet Vakfı İslam Ansiklopedisi*, vol. 28 (Ankara: Türkiye Diyanet Vakfı, 2003), 331. For similar practices in Yemen, see Brinkley Messick, *The Calligraphic State:*

These institutions radiated hegemonic temporal order, and structured everyday life in line with it. Indeed, the prayer cycle has become a kind of a public clock and the prayer names were used to denote the different times of the day. The expression *vakt-i zuhr*, for example, which literally means noontime, could signify the time of the midday prayer itself, or more generally, the interval in which it was to be performed. Military codes from the second quarter of the nineteenth century still included expressions such as *yatsı nöbeti*, which means the night-prayer shift, or simply, the night shift.¹² The name of the fourth daily prayer, *ikindi*, is still used in present-day Turkish to signify the hours of mid-afternoon.

Eighteenth century chronicles reveal that the prayer cycle was used not only as a mechanism for regulating daily routines in institutions and organizations, but also for locating events in time. Indeed, it appears that before the second half of that century, people of different social standing throughout the Ottoman domains rarely referred to the time within the day in terms of specific hours.¹³ To give just one example out of many, one of the Ottoman chroniclers writes that the fire that broke out in Azapkapı on the seventieth day of *Muharrem* 1127 (23 January 1715), began at sometime between the noon and the afternoon prayers.¹⁴

As the eighteenth century progressed, however, the use of clock hours to indicate time became more common. For example, decrees issued in the last decades of the eighteenth century, subjected work in the offices of the central administration to the clock. Increasing use of clock hours is also evident in eighteenth-century chronicles.¹⁵ Different sources show that this trend intensified in the first half of the nine-

Textual Domination and History in a Muslim Society (Berkeley: University of California Press, 1993), 83. For a comprehensive account of time organization in early-modern Ottoman teaching institutions, see Avner Wishnitzer, "Teaching Time : Schools , Schedules , and the Ottoman Pursuit of Progress," *New Perspectives on Turkey* 43, no. 43 (2010): 5–32. On libraries, see Birol, *Managing*, 37.

¹² *Hizmet-i Dahiliye ve Nizam ve Intizam-ı Askeriye* (date and place of publication unknown) Süleymaniye Kütüphanesi, Hüsrev Paşa Koleksiyonu, demir baş 807/15.

¹³ Dana Sajdi has analyzed in detail seven chronicles composed in the Levant during the 18th century by individuals she defines as 'commoners.' Her work shows that these chronicles rarely relied on hours to locate events in time. See Dana Sajdi, *Peripheral Visions: The Worlds and Worldviews of Commoner Chroniclers in the 18th Century Ottoman Levant* (PhD dissertation, Columbia University, 2002), 2–14, 37–44. This seems to have been the practice not only in the provinces, and not only among commoners. See for example the compilation of fire descriptions brought in Ergin, *Mecelle*, vol. 1, 1183–1227.

¹⁴ *Ibid.*, 1192.

¹⁵ For an example of office hours' regulation from the late 18th century, see Başbakanlık Osmanlı Arşivleri (hereafter – BOA), C.DH 4027, 1201.Ra.8 (28.12.1786). References to hours in the fire descriptions brought by Ergin are significantly more frequent in the second half of the 18th century, when compared to the second half of the 17th century. See Ergin, *Mecelle-iUmûr-ıBelediyye*, vol. 1, 1183–1227. For a discussion of these figures and their significance, see Wishnitzer, *The Transformation*, 60–62. This evidence contradicts Tanyeli's claim that there was no real use for the *alaturka* system before the second half of the 19th century. See Tanyeli, "The Emergence," 162.

teenth century, with the use of clock hours spreading beyond government, or even elite circles. For example, in a set of reports, known as *havadis jurnalları*, which were compiled for the authorities in the early 1840s by a network of agents, exact hours were very often indicated.¹⁶ Interrogation protocols conducted by provincial criminal courts (*meclis-i tahkik*) around the same period likewise reflect clear awareness among those interrogated of the hour of the day or night. These people, who were usually of very modest standing, could nevertheless anchor their actions in time with some precision. While the recorded hours never included minutes, half hours were certainly noted.¹⁷

These changes were no doubt related to the growing availability of mechanical clocks during the period under discussion. The first mechanical clocks reached the Ottoman court already in the late fifteenth century, and during the sixteenth they were sold in ever growing numbers, gradually spreading beyond palace circles.¹⁸ It is quite safe to assume that by the second half of the eighteenth century, thousands of timepieces were marketed throughout the Ottoman domains every year.¹⁹ Prior to the late eighteenth century, it appears that clocks, set to 12:00 at sunset every day, were used to roughly indicate the seasonal hours described above. Discrepancy between these non-uniform hours, and the standard hours of the clock was not considered significant. This method of using clocks continued in some sectors and geographic areas

16 See for example all the reports included in BOA, İ.DH 84/4191. See also BOA, C.ZB 556; BOA, C.ZB 315; BOA, İ.DH 38/1802, 8; BOA, İ.DH 26/1232, 9. On the *havadis jurnalları*, see Cengiz Kırılı, “Coffeehouses: Public Opinion in the Nineteenth Century Ottoman Empire,” in *Public Islam and the Common Good*, eds. Armando Salvatore and Dale F. Eickelman (Leiden: Brill, 2006), 75–80.

17 See for example BOA, İ.MVL 245/8884. For further information regarding these protocols, see Omri Paz, *Crime, Criminals, and the Ottoman State: Western Anatolia between the Late 1830's and Late 1860s* (PhD dissertation, Tel Aviv University, 2011).

18 Otto Kurz, *European Clocks and Watches in the Near East* (Leiden: Brill, 1975), 20–46. Özdemir, *Ottoman Clocks and Watches*, 145. On the clock collection in the Ottoman palace, see Fanny Davis, “The Clocks and Watches of the Topkapi Palace Museum,” *Journal of Turkish Studies*, 8(1984): 41–51. On the diffusion of clocks and local manufacture during the 16th and 17th centuries, see Kurz, *European Clocks*, 55–60; Göçek, *East Encounters West*, 104–107; Özdemir, *Ottoman Clocks*, 111–125.

19 For estimations of numbers of clocks sold in the Ottoman Empire, see Kurz, *European Clocks*, 71–88. Ottoman sources too suggest the proliferation of clocks and watches in the eighteenth century, both in Istanbul, and in the provinces. See: Fatma Müge Göçek, *Rise of the Bourgeoisie, Demise of the Empire: Ottoman Westernization and Social Change* (Oxford: Oxford University Press, 1996), 103–106; Tanyeli, “Norms of Domestic Comfort,” 314–315; Tsameret Levi-Dafni, *A Social History of Diyarbakır in the Eighteenth Century* (PhD. dissertation, Tel Aviv University, in progress). See also Ekmeleddin İhsanoğlu, “Some Remarks on Ottoman Sciences and its Relation with European Science & Technology,” in *Science, Technology and Learning in the Ottoman Empire*, ed. Ekmeleddin İhsanoğlu (Hampshire: Variorum, 2004), 57.

well into the nineteenth century.²⁰ However, at least in the bigger cities, the increased use of clocks apparently led to the spread of a unique Ottoman system of equal hours that was hitherto largely limited to professional circles of astronomers and *muvakkits* (Islamic time-keepers, see below).

Indeed, Ottoman astronomers were long familiar with equal hours. Tables of prayer and fasting times compiled by Ottoman astronomers since at least the fifteen century often specified equal hours (that is, equinoctial hours), alongside the temporal hours.²¹ According to this scheme, two sets of twelve equal hours were counted from sunset, which was reckoned as 12 o'clock, until sunset the following day.²² Since the length of the day changes constantly throughout the year, there was a need to adjust all clocks and watches to show 12 every day at sunset. This wore down their mechanisms frequently and made it virtually impossible to keep clocks in agreement with one another.²³

On the other hand, the system maintained some correlation with the older system of temporal hours, and the Islamic prayer cycle. In any case, it was this system of equal hours, rather than the one of seasonal hours, that came to be known in the nineteenth century as *gurubi* or *alaturkasaat*, and it was to this system that the notice in the *Takvim-i Vekayi* referred to.²⁴ That is important since the existing scholarship is not always clear about the use of temporal and equal hours in the Ottoman Empire and the emerging picture is somewhat confused. Having cleared away the confusion, we can now establish safely that the hour eleven mentioned in that notice meant one clock-hour before sunset. Establishing the exact hour of sunset, in turn, was the role of the *muvakkit*.

20 See for example R. Walsh, *A Residence at Constantinople during a Period including the Commencement, Progress and Termination of the Greek and Turkish Revolutions*, vol. 2 (London: Frederick Westley and A. H. Davis, 1836), 482–483.

21 Equinoctial hours were of course known already in antiquity, and were used in tables of prayer time before the Ottoman era. See King, *In Synchrony*, vol. 1, 201–208, 553. See also Idem., “Astronomical Timekeeping in Ottoman Turkey,” in *Islamic Mathematical Astronomy*, 2nd ed. (Aldershot: Variorum, 1993), 246–252.

22 İhsanoğlu and Günergun, “Osmanlı Türkiyesinde,” 436; Atabaki, “Time, Labour-Discipline,” 6; Bir, “Zamanı Belirlemeye yarayan Aletleri,” 231–235. Tanyeli, “The Emergence,” 162. See also Ekmel-eddin İhsanoğlu, “Modernization Efforts in Science, Technology and Industry in the Ottoman Empire (18–19th centuries),” in *Science, Technology and Learning in the Ottoman Empire* (Aldershot: Ashgate/Variorum, 2004), 56.

23 Thomas Thornton, *The Present State of Turkey*, vol. 1, 72–73; White, *Three Years*, vol. 1, 31; S. M. Zwemer, “The Clock, the Calendar and the Koran,” *The Moslem World*, 3(1913): 272. The implication of this scheme on standards of punctuality is further discussed below.

24 For a good contemporary explanation of the Ottoman system, see White, *Three Years*, vol. 1, 31. Foran elaborate discussion of the cultural and political significance of the term *alaturkasaat*, see Wishnizter, “Our Time.”

8.3 Synchronizing Clocks with the Heavens

Already during the first centuries of Islam, methods were devised in order to establish the times of the five daily prayers with some precision. The legal scholars of medieval Islam advocated simple methods of folk astronomy for determining prayer times, methods which required no mathematical knowledge or complex devices. Muslim astronomers, however, gradually developed a vast body of knowledge known in medieval Arabic as *'ilm al-miqāt*, literally, the science of determining time. Scholars who specialized in this discipline engaged in astronomic observations and mathematical calculations in an attempt to establish time - most notably prayer and fast times - with utmost precision.²⁵ It was probably during the Mamluk period (1250–1517) that larger mosques in Egypt began to employ *muwaqqits*, or scholars versed in *'ilm al-miqāt*, in order to calculate prayer and fast times and perform other related duties. That practice spread quickly throughout the Muslim world and it was in this well-established form that it was adopted by the Ottomans.²⁶

Muvakkits, as they were called in Ottoman-Turkish, were employed in larger Ottoman mosques from the early days of the empire.²⁷ The astronomical calculations of these times depended on observing celestial bodies. The *muvakkit* was thus in charge of maintaining what David King called “synchrony with the heavens.” The *muvakkits* throughout the Ottoman Empire operated under the authority of the chief astrologer (*Müneccimbaşı*) of the imperial court. Moreover, the *muvakkithanes*, or time-keeper lodges, were built by sultans and high officials, and served to advertise their power, piety and benevolence.²⁸ The traditional mode of time reckoning was thus not only in synchrony with the heavens, but also with the more easily identifiable power structure on earth. The function fulfilled by the *muvakkits* on the religious, political and practical levels contributed to the longevity of the institution. Indeed, the *muvakkits* did not disappear even when mechanical clocks became more widespread. Since the *alaturka* hour system still relied on observing celestial bodies,

²⁵ On the definitions of prayer times in early Islam, see David King, *Astronomy in the Service of Islam* (London: Variorum, 1993), 250–251; Idem, *In synchrony*, vol. 1, 201–202, 633–634, 654–659; Zwemer, “The Clock,” 272.

²⁶ King, *In Synchrony*, 643–645. On the roles of the *muvakkit* in the Ottoman Empire, see Süheyl Ünver, “Osmanlı Türkleri İlim Tarihinde Muvakkithaneler,” in *Atatürk Konferansları V, 1971–1972* (Ankara: Türk Tarih Kurumu, 1975), 217–257; Salim Aydüz, “İstanbul’da Zamanın Nabzını Tutan Mekânlar: Muvakkithaneler,” *İstanbul*, 51(2004): 92–97; Idem, “Osmanlı Devleti’nde Müneccimbaşılık,” in *Osmanlı Bilimi Araştırmaları*, vol. 1, ed. Feza Günergun (İstanbul: İstanbul Üniversitesi Edebiyat Fakültesi, 1995), 188–190.

²⁷ Özdemir, *Ottoman Clocks*, 29–33.

²⁸ On the authority of the *müneccimbaşı*, see Aydüz, “Osmanlı Devleti’nde,” 188–190. On the construction of *muvakkithanes* by sultans and state officials, see Ünver, “Osmanlı Türkleri,” 234–254.

the importance of the *muvakkits* in fact increased with the widening use of clocks, and the numbers of *muvakkithanes* rose accordingly.²⁹

During the nineteenth century, it became customary to set one's watch according to those at the *muvakkithane*. The famous Turkish writer Ahmet Hamdi Tanpınar (1901–1962) has left us a vivid description of that practice:

There were *muvakkithanes* at every step. However much in a hurry people were, they would halt in front of the *muvakkithane* windows, and pronouncing the *besmele*, take out their watches of all shapes and sizes, depending on their wealth, their age and their stature...and proceed to adjust and set it, with a prayer that the time it measured be auspicious for themselves and for their families. Then they would hold it to their ears as if listening to good news of near and distant times....It had unique qualities extending in both dimensions of life. On the one hand it guided one's present and one's duties, and on the other opened the pure and faultless roads to the eternal happiness one sought.³⁰

Tanpınar's text demonstrates the crucial role played by *muvakkits* in the interface between the natural rhythms and the socio-temporal order, between religious and social life. In fact, it was the inseparability of these realms that the *muvakkit* reflected more than anything else.

8.4 When Night Falls

Let us now return to the notice in the *Takvim-i Vekayi*. We already know that eleven o'clock means one hour before sunset, or one hour before the evening *ezan*. What may still be in need of clarification is that this time of the day had a special significance in Ottoman temporal culture. In contrast to artificially-lit societies, in Ottoman temporal culture the social day and night were more directly related to daylight and darkness, and the two intervals were clearly distinguished from each other on a number of levels which seem to have reinforced each other. Sunset marked the end of the daily cycle of religious worship, of the round of clock hours, and the conclusion of the calendar day.

Nightfall was therefore a time of closure, and that, not only on some symbolic or metaphoric level. Walled cities all over the empire locked their gates at sunset, and

²⁹ On the number of *muvakkithanes* in Istanbul, see Ünver, "Osmanlı Türkleri," 234–254. Ünver lists a total of 69 *muvakkithanes* in Istanbul, but only 39 can be dated with some certainty (it has to be remembered that many *muvakkithanes* were built long after the mosque they served had been completed.) Out of these 39, only 5 were built between the 15th and the end of the 17th centuries. The 18th century alone boasts 7 *muvakkithanes*, and the 19th century, 27. Even if we take into consideration that the more recent buildings are un-proportionately represented, as they are easier to date, the increase in the number of *muvakkithane* is still impressive.

³⁰ Ahmet Hamdi Tanpınar, *Saatleri Ayarlama Enstitüsü* (İstanbul: Dergâh Yayınları, 2008, (first serialized 1954)), 24. This English translation is taken from Özdemir, *Ottoman Clocks*, 145.

kept them closed and guarded until daybreak.³¹ The gates of roofed bazaars, quarters, neighborhoods, alleys, and courtyards were shut down at the same time.³² *Medreses* and bachelors' inns, traditionally considered a threat to public order, were also closed down at sunset and kept locked over night.³³ The urban fabric was thus compartmented by countless doors and gates. Clearly, this closure did not happen all at once, just as the sun does not turn off its light as if it were electricity. The period around sunset was twilight time, natural but also social, a liminal interval separating two periods which were clearly distinguished from one another in terms of the codes of normative behavior associated with each. The call for the night prayer signaled the end of this twilight time and the almost complete evacuation of the streets.³⁴

As noted, social life did not die out with sunset and, yet, its volume decreased significantly and whatever interaction continued was largely limited to the confines of private domiciles, gardens, and neighborhood coffee-houses.³⁵ The dark streets

31 See for example Eyal Ginio, *Marginal People in the Ottoman City: the Case of Salonica during the 18th Century* (in Hebrew) (PhD. Dissertation, Hebrew University of Jerusalem, 1998), 94; Miriam Hoexter, *Communal and Professional Groups in Algiers in the 18th and 19th Centuries – Their Organization, their Functioning and the Policy of the Turkish and French Governments towards Them* (in Hebrew), (PhD. Dissertation, The Hebrew University, 1979), 10; Rıza Nur, *Hayat ve Hatıratım* (Istanbul: İşaret Yayınları, 1992), vol. I, 92; Abraham Marcus, *The Middle East on the Eve of Modernity: Aleppo in the Eighteenth Century* (New York: Columbia University Press, 1989), 279; Amnon Cohen, *Economic Life in Ottoman Jerusalem* (Cambridge: Cambridge University Press, 1989), 2. 'Arif al-'Arif, *Al-Mufaṣṣal fi Tārīkh al-Quds* (Jerusalem: Maṭba'at al-Ma'ārif, 1961), 303; Jens Hanssen, *Fin de Siècle Beirut: The Making of an Ottoman Provincial Capital* (Oxford: Clarendon Press, 2005), 199.

32 For the shutting down of shops and roofed bazaars in Bulgarian cities, see Raina Gavrilova, *Bulgarian Urban Culture in the Eighteenth and Nineteenth Centuries* (Selinsgrove: Susquehanna University Press, 1999), 90; Marcus, *The Middle East*, 284; Hanssen, *Fin de Siècle Beirut*, 197–198; Ehud R. Toledano, *As If Silent and Absent: Bonds of Enslavement in the Islamic Middle East* (New Haven: Yale University Press, 2007), 172–173.

33 Bruce McGowan, “The Age of Ayans, 1699–1812,” in *An Economic and Social History of the Ottoman Empire*, vol. 2, eds. Halil İnalcık and Donald Quataert (Cambridge: Cambridge University Press, 1997), 647; Mübahat Küttükoğlu, “Life in the *Medrese*,” in Faroqui and Neumann, *The Illuminated Table*, 216–217.

34 Contemporary and later writers, both local and foreign, emphasized the complete darkness and silence that took over Ottoman cities at night, some specifically arguing that nobody went outside during the dark hours. See for example James Caulfeild, *The Travels of Lord Charlemont in Greece & Turkey, 1749*, eds. W.B. Stanford & E. J. Finopoulos (London: Trigraph for the A.G. Leventis Foundation, 1984), 210; Ignatius Mouradgea D'Ohsson, *Tableau Général De L'empire Othoman*, vol. 4 (Paris: Didot Pere et Fils, 1824), p. 241.

35 For discussions of nocturnal sociability, see Avner Wishnitzer, “Into the Dark: Power, Light and Nocturnal Life in 18th-Century Istanbul,” *International Journal of Middle East Studies* 46, no. 3 (2014): 513–531; Cemal Kafadar, “A History of Coffee,” a paper given at the *13th Economic History Congress XIII* (Buenos Aires, 2002), 58–59; Tülün Değirmenci, “Bir Kitabı Kaç Kişi Okur? Osmanlı'da Okurlar Ve Okuma Biçimleri Üzerine Bazı Gözlemler,” *Tarih Ve Toplum, Yeni Yaklaşımlar* 13 (2011): 26; Zehra Öztürk, “Osmanlı Döneminde Kiraat Meclislerinde Okunan Halk Kitapları,” *Türkiye Araştırmaları Liter-*

remained the domain of robbers and ghosts, of gamblers, drinkers and sinners of all kinds. Anybody wandering out in the dark streets without a lantern would immediately be considered a suspect and risk being arrested, and having his reputation tarnished, of course. For women, sunset represented a clear temporal boundary, rather than a frontier zone. Any woman crossing that boundary jeopardized her own honor (*ırz*), and that of her family.³⁶ These practices and conventions were embedded in contemporary mechanisms of urban control, an issue I shall not develop here.³⁷

Instead, let us return to our notice in the *Takvim-i Vekayi*. The steamer mentioned in it was scheduled to depart so as to allow the officials to arrive at their homes before sunset or shortly after nightfall, as would befit respectable members of the community. In other words, the departure hour of the ferry was not incidental. Throughout the nineteenth century the workday in governmental bureaus ended around one hour before sunset, and the departure times of the ferries were fixed accordingly.³⁸

8.5 How Approximate is “Approximately?”

Now that we understand when the steamer was scheduled to leave, and why it was scheduled to leave at that time we may deal with the most complex issue, that is, what does “approximately” mean in “approximately eleven o’clock?” It is important to note that use of such vague time definitions was not peculiar to the *Takvim-i Vekayi* notice here discussed. For example, a note sent to some of the cabinet members in late July 1857, informed them that a certain meeting was to take place on Friday, “around eight o’clock” (*saat sekiz radelerinde*).³⁹ The working hours of government officials were similarly fixed in a rather lax manner. Many of the decrees issued in order to define the length of the workday in the early nineteenth century ordered the clerks to report in their bureaus at 2:30–3:00 or 3:30–4:00 (*alaturka*), for example.⁴⁰

tür Dergisi 5, no. 9 (2007): 404. Some of the gatherings described in these works, but not all of them, clearly took place during Ramadan. See also Özge Öztekin, *Divanlardan Yansıyan Görüntüler: XVIII. Yüzyıl Divan Şiirinde Toplumsal Hayatın İzleri* (Ankara: Ürün Yayınları, 2006), 380–381, and Ralph Hattox, *Coffee and Coffehouses: the Origins of a Social Beverage in the Medieval Near East* (Seattle: University of Washington Press, 1985), 128.

36 Raphaela Lewis, *Everyday Life in Ottoman Turkey* (London: B. T. Batsford, 1971), 115.

37 For an elaborate discussion of the organization of nighttime in Ottoman temporal culture, see Wishnitzer, *The Transformation*, 65–85.

38 See for example BOA, A.MKT.NZD 169/47, 22.S.1272 (8.11.1855); BOA, DH.MUİ 103–2/23, 28.S.1328 (28.8.1910); BOA, MV. 143/23, 22 Mayıs 1326 (5.6.1910); BOA, DH.İD 130/8, 2 Şubat 1330 (15.2.1915). For a table summarizing some thirty decrees concerning office hours in governmental bureaus, see Wishnitzer, *The Transformation*, 111.

39 BOA, A.MKT.NZD 230/38, 1273/25.7.1857.

40 See for example BOA, C.DH 3421, 1230/1815.

While in theory the Ottoman hour system could be just as precise as the mean time system, in actuality, the need to set all clocks and watches on a daily basis necessarily created inconsistencies. It is not hard to imagine how gaps between different timepieces opened up quickly, if, for any reason, they were not set on time for a few days.⁴¹ As one contemporary observer noted, “there is a daily alteration of a few minutes and this makes it extremely difficult to keep your watch right and not to be too late or too early for everything. No two clocks or watches in the whole town are, I believe, exactly alike”.⁴² Refraining from fixing an exact hour was thus closely related to the unpunctuality of Ottoman time reckoning systems. Now, however, I wish to further argue that Ottoman temporal culture allowed wider margins even when hours were pre-fixed in an exact manner. In other words, the matter was related not only to the time reckoning system, but also to a host of conventions associated with time and its social organization.

It has been suggested that prior to the spread of modern clock time and schedules, punctuality and belatedness could not be clearly determined. It was only the standard set by the clock and the schedule that could define a delay as a delay.⁴³ This statement seems to draw on a rather clear-cut binary between a modern, clock-based time consciousness and earlier modes of time notation. However, Ottoman temporal culture problematizes such binaries. To start with, the very notion of punctuality is not necessarily dependent on clocks. As noted above, the calculation of prayer and fast times was the most important task of the *muvaḳḳit*, and lateness could be easily measured against these times.⁴⁴ Mechanical clocks too were set according to the exact time of sunset, as determined by the calculations of the *muvaḳḳits*. The punctuality of a clock, in turn, would be assessed not by its ability to keep steady movement for the longest possible duration, but rather, by the extent to which it was tuned to

⁴¹ The discrepancies between timepieces were noted by many European observers. For examples, see Edwin Pears, *Forty Years in Constantinople: the Recollections of Sir Edwin Pears, 1873- 1915* (New York: D. Appleton & Co., 1916), 312–313; Theophile Gautier, *Constantinople*, trans. R. H. Gould (American edition, specially revised) (New York: Henry Holt & Co., 1875), 272; Fraser, *Pictures from the Balkans*, 119–120.

⁴² Brassey, *Sunshine and Storm in the East or Crusies to Cyprus and Constantinople* (London: Longmans, Green and Co., 1880), 72. See also Fraser, *Pictures from the Balkans*, 119–120. Ottoman writers too commented on the difficulties of the *gurubî* system. See Hassan Hamid, “Şemsi Tarih, Zevâlî Saat,” *Mülkiye*, 2 (1 Mart 1325/1909), 25–29; Ahmet Samım, “Vaktimizi Bilelim,” *Sada-ı Millet*, 111 (21 March, 1910): 1–5. Attempts to reconcile the old practice of temporal hours with the standard hours of mechanical clocks were characteristic of the early stages of dissemination of clocks in Europe too. See Rossum, *History of the Hour*, 113–117.

⁴³ Barak, *On Time*, 53–54.

⁴⁴ Prayers were to be performed within specified intervals, rather than on given times. The dividing lines between these intervals nevertheless had to be precisely determined and were the object of much scholarly discussion. Precision was required in the designation of diurnal prayers, less so in nocturnal ones. See C. Pellat, “Layl and Nahâr.” *EP*, vol. 5, 709.

the sun's daily cycle.⁴⁵ In this, the Ottomans were not very different from their contemporaries in Germany or in the American South.⁴⁶ In short, while the mechanical clock was certainly a simpler arbitrator of punctuality and lateness, it did not create these notions.

Second, the use of clocks and schedules did not necessarily bring about punctuality and a delay was still measured against a set of social conventions, rather than against the hands of the clock. The margins of a pre-fixed time, whether designated in astronomical terms (as in prayer times), or in terms of clock hours, were determined by the context. Indeed, being on time, just like being late, are very relative terms in any society and may differ significantly according to social contexts and the status of the individuals involved.

Whereas prayer and fast times were sanctified and their margins were kept narrow by religious dictums, designated times in other fields of social life were usually kept with much wider margins. This was true whether the designated time referred to the prayer cycle (“the ferry will depart following the afternoon prayer”), or to clock hours (“the ferry will depart at approximately eleven o'clock”). With only one government-owned ferry going up and down the Bosphorus, such a definition was probably good enough. Put more broadly, as long as social life in Ottoman cities remained localized, and division of labor relatively simple, these standards of punctuality did not present any problem.⁴⁷ But in the second half of the nineteenth century, things began to change rather dramatically.

8.6 The Transformation of Ottoman Temporal Culture

As already suggested, any temporal culture is a historically created entity, that is to say, it is embedded in specific economic, social, political and cultural structures and may very well take a new form as those structures change over time. That was exactly the nature of the process that unfolded over the long nineteenth century. Starting already at the late eighteenth century, various organs of the reforming Ottoman state began experimenting with new techniques of time organization. In an attempt to attain better surveillance capabilities, and higher levels of regularity, efficiency, and predictability, these organs gradually developed elaborate “temporal constructs” in which clocks

⁴⁵ It seems that still in the early 20th century there remained a measure of ambiguity with regard to what defines the punctuality of a clock. See “Al-sā‘āt al-Maḍbūṭa,” *Muqtataf*, 32(1907), 78.

⁴⁶ Sauter, “Clockwatchers and Stargazers,” 694. Michael O'Malley, “Time, Work and Task Orientation: A Critique of American Historiography,” *Time and Society* 1/3 (1992): 352–354.

⁴⁷ On the localized nature of social life in early modern Ottoman cities, see Marcus, *The Middle East*, 285–290; Cem Behar, *A Neighborhood in Ottoman Istanbul: Fruit Vendors and Civil Servants in the Kasaplıyas Mahalle* (Albany: State University of New York Press, 2003), 3–6.

played an increasingly important role.⁴⁸ The term “temporal constructs,” is here used to denote comprehensive ensembles of time-related practices and procedures that govern the work routines in complex organizations. In the nineteenth century Ottoman Empire, the emergence of such constructs was most clearly evident in the administrative system, in the post-1826 army, and later on, in the education system. Similar constructs were also devised for systems of transportation and communication, and in various foreign commercial firms operating in the Ottoman domains.

The reforms, which began on the organizational level, gradually diffused beyond clearly delineated state-spaces such as bureaus, military compounds, and schools, and eventually led to a more comprehensive change in time-related behaviors, conventions, and values. But this was by no means a smooth process. The temporal arrangements devised in order to meet the new needs often disturbed the inner coherence of early modern temporal culture and created a sense of friction that was aggravated by the gradual spread of European mean time in the second half of the nineteenth century.⁴⁹

8.7 Conclusion

By the end of the eighteenth century timepieces were no longer merely ornamental objects. They were increasingly consulted for temporal orientation but were still very far from becoming the supreme regulators of social life. That role was still reserved for the heavenly bodies, the revolution of which determined prayer times and paced mechanical clocks. Thus, while clocks were without doubt more commonly used, the time they measured was not severed from the natural world, nor was it emptied from the multiplicity of political, religious, and cultural meaning it carried. The Ottoman “clock-time” of the late eighteenth century was indeed very different from the uniform and empty physical entity which is usually meant by the term.

Reading the clock *alaturka*, within the wider context of contemporary temporal culture sharpens our awareness of the myriad of alternative modernizations that would have seemed possible to the contemporaries before the European model of modernity secured its dominance, before the *alafanga* reading of the clock became the only possible one. Indeed, the days of time definitions like “at approximately eleven o’clock,” were numbered. To the rising professional elites of the early-twentieth century, the world of temporal conventions in which the *alaturka* system was grounded, in itself a product of modernization, would soon be seen as the remains of traditional order.

⁴⁸ For this process see Wishnitzer, *Reading Clocks, Alla Turca*.

⁴⁹ On the transition to mean time, see Avner Wishnitzer, “Our Time.” See also: İhsanoğlu and Günergun, “Osmanlı Türkiyesinde,” 434–441; Gündüz, “Alaturka Saatten,” 120–126.