

**SPECIAL ISSUE**

# The Bureaucratic Sense of the Forthcoming in Seventeenth-Century Istanbul

Harun Küçük

University of Pennsylvania, US  
[kucuk@sas.upenn.edu](mailto:kucuk@sas.upenn.edu)

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In this article, I try to answer how the study of bureaucracy may contribute to the history of knowledge. In the broadest terms, the story goes like this: The Ottoman treasury had a difficult time collecting taxes in the seventeenth century. The administrators needed to have a sense of who to tax and how much to tax. To produce the necessary knowledge quickly, they had to rely on a small bureaucracy. And they had to do this without the help of a robust educational system. All of these issues implicated the relationship between knowledge and time.

This article provides a preliminary investigation of bureaucratic numeracy with special emphasis on seventeenth-century Ottoman almanacs, or *ruznames*. I hope to give the reader an integrated understanding of what we usually treat separately as skills, bureaucratic practices, and, ultimately, the wireframe of statehood. I use the expression "sense of the forthcoming" instead of "knowledge of the future," prognosis, or planning because first, "the forthcoming" was not simply about the natural passage of time but also about prognoses and expectations. Second, "sense" is more appropriate than knowledge because the forthcoming here also means an epistemic *fore*-closure. It suggests that knowledge may merely be "good enough," especially at times of epistemic urgency, as was the case in seventeenth-century Istanbul. Some types of bureaucratic knowledge are fore-closed in that certainty or accuracy is simply not pursued beyond a certain point.

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Time is an important and fundamental element in the analysis of any society because time conventions are key components of social discipline and civility.<sup>1</sup> We are living in a world where we can take time for granted because social discipline has become ingrained in our behavior after years and decades of habituation. Norbert Elias has even argued in his *Essay on Time* that we buy into the regular, Newtonian time-grid not because it inheres in our reason, but because we are forced into a regular time-grid from an early age.<sup>2</sup>

Time is always a part of bureaucratic knowledge. But, modern societies are not purely bureaucratic societies, and modern times are not purely bureaucratic times. Thus, for example, our calendars neither miss religious holidays, nor are they unscientific. The conglomerate that is the modern state has largely absorbed the religious and the scientific fields. Perhaps slightly less important today is work: work is less of a habitual time discipline today because fewer jobs are career jobs, and relatively few people do a job long enough to develop a rigorous time discipline based on that specific job, leaving us with the vague and vacuous "nine to five," which, unless you live in a highly disciplined European nation, rarely starts at nine and ends at five. Finance, which relies heavily on the cyclical collection and payment of debt, is also a crucial element in our

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<sup>1</sup> Temporality is a relatively new line inquiry in Ottoman history. The only focused inquiry into time, work, and leisure in the early modern period is Sariyannis, "Temporal Modernization." There are also some very notable studies on time that focus largely on the nineteenth century. See especially, Ogle, *Global Transformation of Time*; Wishnitzer, *Reading Clocks*; and Georgeon and Hitzel, *Ottomans et le temps*.

<sup>2</sup> Elias, *Essay on Time*, 32.

contemporary understanding of time. Sociologist Lisa Adkins goes so far as to suggest that we think of the future in largely economic terms because the commodification of futures projects, creates, and enforces time.<sup>3</sup> The religious field, the scientific field, the financial field, and the bureaucratic field constitute the modern state. They collectively put us through a type of civilizing process, which includes time discipline. According to Elias, only those polities that can enforce a regular time grid have a regular time grid.<sup>4</sup>

Elias is far from the only thinker to point out that there is a strong connection between societies and time. Charles Tilly, for example, has argued that political authorities shape time in three ways. First, they shape social time directly through employment, conscription, and other obligations foisted on subjects. Second, states consume their subject's time by requiring them to pay taxes and answer official inquiries. And finally, states establish temporal references by erecting public clocks and publishing calendars.<sup>5</sup> I will be touching on these in looking at tax collection practices and almanacs. Istanbul receives special emphasis partly because the Ottoman state employed close to fifteen percent of the half million inhabitants of the city and partly because bureaucrats, or at least bureaucratic instructions, were sent out from Istanbul. When Ottoman bureaucrats "civilized" an area under their administration, it meant enfolding that area into the central treasury and enforcing Istanbul's temporal regime on it.

Two elements need to be in place to enforce a regular time grid. First, you need to find one. In the seventeenth century, this was tantamount to finding a group of people who had already been habituated into a regular time grid. Yet, in this period there were no astronomers or astronomically-trained religious officials (*ulema*) in Istanbul, making bureaucrats the only people with some sense of a regular time grid.<sup>6</sup> Second, you need to enforce the time grid, first through coercion, and then through habituation, which is a long process that takes generations. In the Ottoman Empire, a regular time grid whereby subjects become habituated to think in "state time" did not begin to emerge until the late eighteenth or early nineteenth century. By comparison, it was until almost a century after the publication of Newton's *Principia* that Kant could claim that the regular Newtonian time grid was universal. Even then, perhaps Kant was exceptional rather than representative of the average European in his civility and punctuality.

Since a regular time grid does not emerge instantaneously, I am trying to understand a "time grid in-the-making." How would a somewhat regular time grid created by bureaucrats with a moderate amount of numeracy look? How would the bureaucrats who often could not directly access sources of tax revenue enforce this time grid? The examples I discuss in this article entail stripping away many of the fields that constitute the modern state—and the state was fairly naked in seventeenth-century Istanbul—and focusing on the fiscal bureaucracy. My analysis sits relatively easily within the existing literature on the reconstruction, formation, or adaptation of the Ottoman state after the social upheavals and the budgetary crises of the seventeenth century because it invariably locates these processes in the growth of the fiscal bureaucracy.<sup>7</sup> Historian Mehmet Genç has gone so far as to say that the Ottomans thought about their economy in terms of the treasury because the vast majority of the documentary record we have from the seventeenth-century Ottoman Empire is fiscal.<sup>8</sup>

The bureaucratic sense of the forthcoming points to the intertwined nature of the time grid and tax collection. I hope to give the reader an integrated understanding of what we usually treat as separate skills, bureaucratic practices, and, ultimately, the wireframe of statehood. The forthcoming was not simply about the passage of time but also about prognoses and expectations. There was no such thing as a pure calendar in seventeenth-century Istanbul, nor was it easy to separate tax collection and astrological prognoses because they were both in the calendar. Prominent astrologers and prominent tax bureaucrats were often the same people. Their understanding of the future was not an open-ended and iterative process; it was *fore-closed*.<sup>9</sup> Their sense of the forthcoming was often merely "good enough" because they were facing times of epistemic urgencies—urgencies that most people who are not in the truth business, or even those who are in the truth business but under set deadlines, routinely experience. Many types of bureaucratic knowledge are fore-closed because bureaucrats stop pursuing further certainty or accuracy after a certain point. The cases I present overlap thematically and conceptually with John Sabapathy's article on Gui Foucois in this issue.

<sup>3</sup> Adkins, "Practice as Temporalisation," 356.

<sup>4</sup> Elias, *Essay on Time*, 45.

<sup>5</sup> Tilly, "Time of States," 275.

<sup>6</sup> Küçük, *Science without Leisure*, 108–42.

<sup>7</sup> See, e.g., Abou-el-Haj, *Modern State*; Tezcan, *Second Ottoman Empire*; Darling, *Revenue-Raising*.

<sup>8</sup> Genç, *Devlet ve Ekonomi*, 60–62.

<sup>9</sup> On epistemic closure, see Luper, "Epistemic Closure."

From a comparative perspective, the Ottoman experience seems less than exceptional. For example, although James Scott's *Seeing like a State* has nothing to say about the Ottoman Empire, it readily provides many insights that are useful as a baseline for the study of Ottoman taxation practices. For Scott, early modern states, especially absolutist states, were partially "blind" because they did not know how to "read" their subjects and their lands. Surveys, registers, standardization of weights and measures, and standardization of legal discourse mitigated this blindness.<sup>10</sup> Indirect taxation was the rule rather than the exception. Thus, absolutist France, which was somewhat similar to the Ottoman Empire, preferred excise levies, tolls, license fees, and the sale of offices and titles to more direct forms of taxation, which required information on landholding or income.<sup>11</sup> States could not penetrate to the local level, which made them resort to local dignitaries who could exploit administrative incoherence.<sup>12</sup> The fuzzy and dark picture of the provinces that one could only hope to obtain from the administrative center attests to the structural and technical deficiencies that most states in the period shared. The Ottomans were no exception. However, Ottoman historians may find that Scott's study works better with sixteenth-century evidence than it does with seventeenth-century evidence. The sixteenth century is much richer in administrative documentation, and whatever blindness one could witness in the functioning of the Ottoman state was the residual and near-universal blindness that Scott diagnosed. By contrast, the absence of evidence in the seventeenth century suggests that the Ottoman state may have been more than just partially blind. Perhaps, it had also stopped looking.

### The Seventeenth Century Crisis

The seventeenth century crisis, which struck the Ottoman Empire in every imaginable way, had both climatic and political components. According to Sam White, the Little Ice Age nearly destroyed agricultural activity in many parts of the Ottoman Empire.<sup>13</sup> The agricultural crisis had a domino effect: crop failure meant famine; famine meant farmers deserted their lands; desertion meant urban migration and reduced revenue; less revenue meant higher taxes, lower wages, urban unemployment, and poverty.<sup>14</sup> No one seems to challenge that there was a crisis, but its extent and its causes are still a subject of debate. Most recently, Geoffrey Parker has presented a compelling account of a global crisis caused by the Little Ice Age. According to Parker, the Little Ice Age caused crop failures and famine, which led to revolts and rebellions across the globe. The seventeenth century was rife with subtle and not-so-subtle regime changes all around the world. The switch from the Ming Dynasty to the Qing Dynasty in China, the switch from the Safavid Dynasty to the Qajar Dynasty in Iran, and the revolutions of 1648 and 1688 in England are familiar to most historians.<sup>15</sup> Perhaps less familiar to readers are the Celali Revolts that ravaged the Ottoman countryside from roughly 1550 to 1700. According to the Turkish historian Mustafa Akdağ (1913–1973), these revolts were the most important events in the early modern history of Anatolia.<sup>16</sup> As a consequence of its multifaceted crises, the Ottoman Empire did not have a smooth transition out of its ancien régime in the seventeenth century—feudal elements remained comparatively stronger in Europe—but had to rebuild from scratch following the almost total collapse of anything resembling an old regime.

The various crises are the reason Baki Tezcan speaks of a "Second Ottoman Empire" in the seventeenth century. In a remarkable study, Oktay Özel has observed the collapse of the old Ottoman order through the lens of severe depopulation in rural areas, overcrowding in urban centers, abandoned farms, and the absence of key state documents (such as budgets, surveys, and other similar indications of administrative oversight) over several decades in the seventeenth century.<sup>17</sup> When it comes to the central Ottoman budget, it appears as if there is almost no record of the early seventeenth century.<sup>18</sup> As Linda Darling and others have shown, the Ottomans were trying to manage and respond to this predicament, but the reader may consider

<sup>10</sup> Scott, *Seeing Like a State*, 2–3. For the Ottoman case, see Kunt, *Sultan's Servants*; and Çakır, "Geleneksel Dönem," 195.

<sup>11</sup> Scott, *Seeing like a State*, 22–23. A version of this argument has been deployed in Collins, *Fiscal Limits*. Darling has engaged with Collins' argument in *Revenue-Raising*, 300–301.

<sup>12</sup> Scott, *Seeing Like a State*, 24.

<sup>13</sup> On the Ottoman Empire and the Little Ice Age, see White, *Climate of Rebellion*.

<sup>14</sup> For an excellent and brief account, see Özel, "Reign of Violence." For a more extended account, see Özel, *Collapse of Rural Order*.

<sup>15</sup> Parker, *Global Crisis*.

<sup>16</sup> Akdağ, "Celali İsyanlarının." This dual-language article was based on Akdağ's Habilitationsschrift. He was imprisoned after the Military Memorandum of 12 March 1971. Akdağ's analysis of these revolts as part of a general crisis predated by more than a decade the comparable analyses of Europe by Eric Hobsbawm and Hugh Trevor-Roper.

<sup>17</sup> Özel, *Collapse of Rural Order*. While I have not done a survey of the scholarship on the provincial tax registers, the survey that Özel has done suggests that budget documents were sparse throughout the empire.

<sup>18</sup> Karaman and Pamuk, "Ottoman State Finances," 604.

the possibility that the adaptation and response took place at a more fundamental level than what one may expect from expressions such as reform or modernization.

The destruction of the social fabric brought about by the crisis had a secularizing effect. The priority of the treasury over religious concerns in something so fundamental as the calendar suggests as much. In contrast to the general treatment of the Ottoman Empire as a group of communities whose primary sense of belonging was religious, Ali Yaycıoğlu suggests that we should perhaps be speaking of a society where debt and credit were key elements of the social fabric.<sup>19</sup> Networks of debt and credit were already taking over both central and rural administration in the seventeenth century. This is why there are long-standing debates among economic historians, especially between Murat Çizakça and Ariel Salzman, about whether the developments in the late seventeenth century should be characterized as internal debt or as privatization.<sup>20</sup> Based on the evidence presented by Yaycıoğlu and supported by others, wealth and social status largely went hand in hand—social capital depended largely on monetary capital in the seventeenth century.<sup>21</sup> By the eighteenth century, the relationship between social capital and monetary capital was even more thoroughly related as the social order had turned into what Yaycıoğlu calls the “order of debt.”<sup>22</sup>

### Time without Social Time

Seventeenth-century Ottoman society was a late society—not late in terms of the minutes or hours that informs Max Engammare’s important work, but days, weeks, months, and even years late.<sup>23</sup> It was only with the evolution of a larger tax bureaucracy and the emergence of a more widespread debt and credit economy during the late seventeenth and eighteenth centuries that timeliness, above all in payments and collections, became the norm. The state was the most visibly delinquent actor in the seventeenth century and not rarely missed a whole year’s worth of payments to individuals. In his investigation of time, Elias noted that an individual lack of punctuality becomes a possibility if there is already a society-wide sense of punctuality in place. But what does it mean when punctuality is structurally absent in a society?

By time without social time, I mean the general absence of internalized experiences of socially-conditioned time. The state, among other things, is an order of time. And, an orderly and unified time-reckoning indicates that a state is in good health. National ceremonies, due dates, or military conscription all mark moments. Recurrent and timely payment of taxes depends on a smooth-running continuous time grid.<sup>24</sup> And a state that is well-organized is a state whose temporal markers display order. Missed ceremonies, randomly levied taxes, or sudden and unexpected acts of war give us the sense that a state is in disorder. Social time is absent when social conventions on time present themselves as pure externalities or exceptions. They are easily disregarded, and they can even take on the form of coercion.

One consequence of the destruction of the social fabric in the Ottoman Empire was the destruction of social time and, by extension, the sense of the forthcoming. This includes the shortening and sometimes complete omission of training times in professional domains, such as the academy or the military.<sup>25</sup> Extreme career instability, an amply-remarked aspect of seventeenth-century life in Istanbul, also meant that even the elites had a difficult time enjoying their elitehood for any stretch of time. In this setting, the three-year terms on land taxes I discuss below were arguably a vast improvement over the demographic models of taxation, which made the state largely incapable of anticipating its income. And, the growth of the *malikane*, or the lifelong tenure at the end of the seventeenth century, marked the emergence of an even more distant temporal horizon for those inhabiting the treasury.<sup>26</sup>

Ottomans survived through the seventeenth century because the tax bureaucrats cultivated a sense of the forthcoming. Their achievement was bringing order and regularity to the income and expenditures of the central treasury and doing so within a limited amount of time. Tax bureaucrats were a heterogenous group ranging from *hazine katipleri* (scribes of the central treasury) and *ruznameciler* (daybook-keepers) to the *defterdar* (minister of finance, literally “keeper of the notebook”) and the *başmukabeleci* (chief comptroller). Many of these offices would fall under the more general title of *divan hocası* (consultant to the

<sup>19</sup> Yaycıoğlu, *Partners of the Empire*, 97–101. Although Yaycıoğlu’s work deals with the eighteenth century, economic relations started to supplant otherwise social and political relations long before then. See also, Karaman and Pamuk, “Ottoman State Finances,” 601.

<sup>20</sup> For an excellent survey of the debates, see Kökdaş, “Land-Ownership.”

<sup>21</sup> Stamatopoulos, “Poor Men of Christ”; Canbakal, “Nobility.”

<sup>22</sup> Yaycıoğlu, “Perdenin Arkasındakiler,” 378.

<sup>23</sup> Engammare, *L’ordre du temps*.

<sup>24</sup> Elias, *Essay on Time*, 45.

<sup>25</sup> Yılmaz, “Janissaries,” 78; Atay, “Medreselerin Gerilemesi.”

<sup>26</sup> Salzman, “Ancien Régime Revisited.”

Imperial Council) by the eighteenth century. The Wardens of the Mint, the Foundry, the Dockyards, and the Gunpowder Mill were also counted as *divan hocası*. Their main strength was numeracy, which manifested itself in creating almanacs and in taxation.

The bureaucrat was a rare type of individual because he could—had to—anticipate something resembling a future in the seventeenth century. Budgets, especially the hypothetical budgets that are typical of the seventeenth century, are protentions or acts of stretching forward.<sup>27</sup> And, considering that most Ottoman historians in the seventeenth and eighteenth centuries were bureaucrats, they were also the only people with a sense of something resembling a past. Perhaps expectedly, the bureaucrats were also the only people with the notion that the empire was going through a period of decline as revenues and wages steadily shrank over the seventeenth century. The centralized fiscal bureaucracy matured as their numbers went up from about sixty to more than a hundred fifty over the course of the seventeenth century.<sup>28</sup>

Nabi (1642–1712) provides a good example of the perspective of the late seventeenth-century bureaucrat. Nabi was born to a well-to-do family in Urfa, where he worked as a clerk reading and writing official correspondence for locals. He moved to Istanbul in 1666 and became a *divan katibi*, or a clerk reading and writing official correspondence for the Imperial Council. During his years in Istanbul, he became a celebrated poet and received patronage on and off from various pashas until he became *Darphane Emni* (Warden of the Mint) in 1710 and, shortly after, *Başmukabeleci* (Chief Comptroller). He fell sick and died in 1712 (Wikipedia claims he was bitten by a honey badger).

*Hayriyye*, a didactic poem that Nabi addressed to his son gives us insight into the instability of life in the Ottoman Empire during this period. In the poem, he provides a sardonic reading of all the bad ways of making a living in Istanbul. The targets of his misanthropy included the scholar, the alchemist, the astrologer, the physician, the tax farmer, the soldier, the poet, and even the pasha.<sup>29</sup> All these professions arguably had high ceilings and could provide immense wealth and power. In reality, however, they were highly risky and often scammy. Judges took bribes, viziers and rent-seekers were cruel and had short careers. Astrologers were liars. Physicians and alchemists were swindlers. Ultimately, Nabi advised his son to become a *divan hocası*. Consultants to the Imperial Council had the only stable jobs that provided a reasonable amount of leisure in the entire empire:

I have never seen in our state  
Anyone with more leisure (*rahat*) than the *haces*  
...  
They possess reason and skill and science  
They have manners and time and calm  
  
Their skills have purpose  
Covered in purity and beauty in all directions<sup>30</sup>

Nabi's advice to his son suggests that the bureaucrat was a deliberately middle-class person. He was not someone who wanted to be a pasha or a governor but got stuck shuffling paper. The stability of tax bureaucracy made the profession attractive above all others while also ensuring the stability of the Ottoman administration.

## Taxation Practices

Over the second half of the seventeenth century, bureaucrats simplified the collection and calculation of taxes.<sup>31</sup> This novelty can be gleaned not only from surveying activity in freshly conquered or re-conquered lands but also in the increasing number and prestige of *voivodes* (local tax collectors). According to Molly Greene, new surveys of freshly conquered or re-conquered territories helped with the calculation of lump-sum tax payments.<sup>32</sup> In older territories with outdated surveys, the surveys were not renewed, but the land

<sup>27</sup> Atkinson, "Time for Bourdieu," 954.

<sup>28</sup> Darling, "Ottoman Fiscal Administration," 165; Özvar, "Transformation of the Ottoman Empire," 34–35.

<sup>29</sup> Shafir, "Moral Revolutions" is an excellent study of Nabi.

<sup>30</sup> Nabi, *Hayriyye*, 291.

<sup>31</sup> Özel, *Collapse of Rural Order*, 181.

<sup>32</sup> Greene, "Islamic Experiment," 71–72.

was generally assigned to a *voivode*—many of whom resided in Istanbul—who paid a fixed up-front sum to the treasury at a specific date and collected taxes yearlong with an eye to maximizing his profits.<sup>33</sup>

Bureaucrats tried to exercise a modicum of control over both the flow of time and the flow of money. Central treasury, the main concern of the bureaucrat, also put practical limits on the acquisition and deployment of bureaucratic numeracy. There is no such thing as surveying for the sake of surveying, perhaps except in those polities with a pathologically well-articulated bureaucracy. A similar claim could be made about the calendar, which is always used for the sake of something else. But the stakeholders in the calendar, a more universalizing genre, are far more numerous. Here, I would like to outline how Ottoman taxation worked, mainly to expound what epistemic fore-closure looks like in taxation.

Around the middle of the sixteenth century, Ottoman administrators thought and wrote a lot on the taxation of land. In the early fifteenth century, Sultan Murad II (1404–1451) allegedly recognized only three licit ways of collecting money. These were income from the silver mines, poll-tax from non-Muslims, and loot from Holy War.<sup>34</sup> Kemalpaşazade (1468–1536) and Ebussuud (1490–1574), the two most famous Sheik al-Islams of the sixteenth century, reformulated and secularized the Ottoman legal system to allow for feudal taxation through rent. Thus, they retrofitted secular taxation onto Islamic taxation practices to increase state revenue. The crucial premise in their reasoning was that the state had sole ownership of all land under its rule. Ergo, money collected from land was not tax, but rent.<sup>35</sup> As a consequence, taxation became the sole practical division in Ottoman society. Lütfi Paşa, for example, believed that Ottoman society had only two classes: the taxable peasants (*reaya*) and the non-taxable ruling (*askeri*) class.<sup>36</sup>

The new and complex taxation practices that emerged in the seventeenth century differed from what historians have found in the sixteenth century. The tax on land became a lump sum payment every three-years—and, ultimately, the lump-sum taxation turned into lifelong land tenure, known as *malikane*, that enabled the state to collect very large lump-sum payments. The growing *malikane* system “offered several advantages, namely the absence of risk and the minimal size of the tax-collecting apparatus.”<sup>37</sup>

Ottoman taxes in the seventeenth century were burdensome, universal, thoroughly modern, and largely impervious to religious and ethnic identities. The number of taxable items and the types of taxable individuals increased as the empire’s rural population collapsed. The feudal levies that Kemalpaşazade and Ebussuud had formulated in the sixteenth century no longer filled the coffers in the seventeenth century. Consequently, the state began to collect taxes from each adult. *Avarız* and *nüzul*, both of which used to be one-off wartime taxes, and *cizye*, a type of tax that only non-Muslims paid, became the basis of universal taxation.<sup>38</sup> Over the seventeenth century, the one-off wartime taxes turned into regular and annual cash payments. Their amounts also increased, sometimes twenty- or thirty-fold, putting an additional burden on the remaining productive farms and households, whose numbers were far below what they had been in the early sixteenth century.<sup>39</sup> *Cizye* turned into a tiered tax, where one could pay as a “poor,” “middle class,” or “rich” person. Thus, the exceptional taxes became the normal taxes, while the old feudal levies fell by the wayside.

Since the seventeenth century was not as rich in land-tax records as the sixteenth century had been, most researchers extrapolate from the few extant sources. In his study of the 1670/1 tax registers for the newly-conquered Crete, Elias Kolovos contended that measurements regarding the land—its size and the number of planted trees—was a novelty and supported proportional rather than fixed taxation.<sup>40</sup> Of course, this system was far from accurate: the land was measured by local units, and the surveyor decided whether the arable land was of premium or average quality. Premium land was assumed to yield about 150 kg. of grain per *cerib*, which Kolovos estimated as 1.118 km<sup>2</sup>, and average land was assumed to yield half this amount. The tax surveyor assumed a profit of 30 akçe per *keyl*—roughly 30 kg.—and entered the expected production into the books by simply multiplying the estimated yield by the surface area. The units that tax surveyors used in different locales were different. In order to come up with as accurate a prediction of the yield as

<sup>33</sup> See, e.g. Özvar, “XVII. Yüzyılda Osmanlı.”

<sup>34</sup> Sariyannis, *Ottoman Political Thought*, 37.

<sup>35</sup> *Ibid.*, 102.

<sup>36</sup> *Ibid.*, 140.

<sup>37</sup> *Ibid.*, 146.

<sup>38</sup> For a general overview, see McGowan, *Economic Life in Ottoman Europe*.

<sup>39</sup> Akdağ, “Celali İsyanlarının,” 29–36.

<sup>40</sup> Kolovos, “Concerning Crete,” 216.

possible, tax surveyors worked with the information gathered from the local community—a version of what Sabapathy has called *fama*.<sup>41</sup>

Kolovos emphasized that the registers are skewed towards not actual production but towards “expected production according to the tax priorities of the Ottoman administration (which focused especially on the taxation of wine, as far as the non-Muslims were concerned).”<sup>42</sup> The expected or the forthcoming income fore-closed further investigation into actual yields. Kolovos also noted that 1670/1 registers focused only on the productivity of the soil, whereas fifteenth- and sixteenth-century registers from other parts of the empire also focused on the cultivator and his ability to cultivate the land well. And, instead of counting the peasant households, the 1670/1 registry proposed a more elaborate system that involved the size of the property. In her earlier study, Greene suggested that these new methods helped accommodate new lump-sum monetary taxes, where each villager paid to a local administrator, fiscal agent, or tax farmer in three-year terms.<sup>43</sup> The records were therefore more future-oriented because they were impervious to possible depopulation and abandonment. Stefka Parveva’s work dealing with other extant surveys suggests that land-based taxation was expanding in other parts of the empire during the 1670s.<sup>44</sup>

We do not know how taxes were physically collected because Ottoman documents tell us about the appointment of the local tax collector and about what happened once the taxes were collected, but there seems to be no information on what took place in between.<sup>45</sup> However, the appointment dates of the tax collectors give us a sense of when these taxes were collected. Before 1660, many of the tax collectors were appointed in what seems to be a random point between November and April. After 1660, most appointments were made in March.<sup>46</sup> While a tax collector could have been a man of any possible background, from the 1660s onwards, it was most often either a palace functionary or a man with a military background who bore the title *Ağa*.<sup>47</sup> This raises the possibility that there was a strong connection between taxation and coercion. And, overseeing *Ağas* were an increasing number of functionaries attached to the imperial treasury—and most of them would be *divan hocası*.

## The Ottoman Calendar

The calendar is one of the toolkits of the state that in creating a *coup d’oeil* allows it to hijack physical time. And, enforcing a certain calendar is an essential element of statehood. Here, the reader may want to consider that the acceptance of the Gregorian calendar took centuries. For long stretches of time, German and English people saw it as popery even though most astronomers believed the Gregorian calendar to be technically superior to the old Julian calendar. Some Protestant nations adopted the Gregorian calendar because of reasons of state, not popular demand.<sup>48</sup> Financial reasons, for example, encouraged Genevans to adopt the Gregorian calendar in 1700.<sup>49</sup> Still other countries did not adopt the Gregorian calendar, which remained the most accurate solar calendar in general use, until the twentieth century. The universalization of the Gregorian calendar is generally considered an important element of secularization, meaning it allowed states to fit themselves onto physical, solar time. Of course, the adoption of the Gregorian calendar was not the only secular reform of the calendar. As I discuss below, Ottomans practically invented a reasonably accurate luni-solar calendar for tax collection. And scientific reason was not the only secular reason. Also secular, perhaps even more so, was financial reason.

The first time we can speak about a uniquely Ottoman calendar is in 1676/7, the year when Sultan Mehmed IV officiated the luni-solar calendar by skipping a lunar year for fiscal reasons.<sup>50</sup> The practice had an unofficial prehistory and annual intercalation would patchily continue until it became standard official practice in the eighteenth century. The Ottoman calendar is a type of luni-solar calendar, or a *Hijri-Julian* calendar, that skips entire years rather than features smaller scale intercalations. Ottomans never had to resort to anything nearly as complicated because there seemed to be no single calendrical system for everything until the bureaucratic calendar reform of 1677. There was the pure hijri calendar with its lunar months, and its zero point was Muhammed’s migration from Mecca to Medina in 622. Other calendars existed in tandem. There

<sup>41</sup> See Sabapathy in this issue.

<sup>42</sup> *Ibid.*, 212.

<sup>43</sup> Greene, “Islamic Experiment,” 71. On the eighteenth century, see Salzman, “Ancien Regime Revisited.”

<sup>44</sup> Kolovos, “Concerning Crete,” 216.

<sup>45</sup> Demirci, “Collection,” 3.

<sup>46</sup> *Ibid.*, 7; Sahillioğlu, “1683–1740,” 161.

<sup>47</sup> Süleyman Demirci, “Collectors,” 544.

<sup>48</sup> Gingerich, “Civil Reception.”

<sup>49</sup> McNutt, “Hesitant Steps.”

<sup>50</sup> Sari Mehmed, *Zübde-i Vekayiat*, 82–83; Anon., *İsazade Tarihi*, 103; Hezarfenn Hüseyin, *Telhisü'l-Beyan*, 224.

was the Julian calendar or the *Rumi*/Roman calendar that was widely used. There was also the Coptic or the Alexandrian calendar and the old Turkic calendar featured in calendars for reasons unknown to me. The new Ottoman calendar thus officiated was difficult to convert into other calendars. As late as the middle of the twentieth century, Ottoman historians had to rely on a handbook that provided conversions for individual dates.<sup>51</sup>

In a seminal article, the economic historian Halil Sahillioğlu demonstrated that the eleven-day difference between the lunar calendar and the solar calendar was the culprit for several budgetary crises. The Ottoman treasury levied taxes on the solar calendar because much of its revenues were agrarian, but it paid its salaries on the lunar calendar because the salary schedules had been following the hijri calendar since the fifteenth century. This meant that every thirty-three years, tax revenue was a full year behind salary payments. This was, according to Sahillioğlu, not necessarily a problem if the treasury was full. And, especially in the earlier centuries, money received through tribute and warfare was often enough to maintain a healthy treasury.<sup>52</sup> Precisely because the treasury was doing so well, Ottomans did not have to rely on universal taxation and regular tax budgets. Although budgets that included taxes were kept in the earlier centuries, they had no predictive weight because irregular sources of income constituted a larger portion of the revenue.

The calendrical difference mattered only when the budget was tight. And, the budget was noticeably tight in 1652/3 when the ministers expressed worry that expenses had exceeded income, that there were too many soldiers to pay, and that the taxpayers were too poor to pay more tax. They had also noticed that in 1643 income and expenses had been in balance. What had happened in the meantime? And why was the treasury empty? These questions became the occasion for one of the key political texts of the seventeenth century, *Düsturü'l-Amel li Islahi'l-Halel* (Course of Measures to Redress the Injuries). Its author, Katip Çelebi (d.1657), was an occasional tax registrar who was independently wealthy.<sup>53</sup> He argued that the countryside was in ruins, the taxes on peasants had doubled, and bribery had become the norm. There were too many janissaries—a hundred thousand in the early seventeenth century. Grand viziers had managed to cut this number by half, but he thought there was more room for reduction still: thirty thousand was the ideal number. As for the expenses, the state had to resort to the old budget (*Kanun-ı kadim*) and to let the salaries remain at the pre-inflation amounts set in the sixteenth century.

Katip Çelebi's advice was not purely practical because he turned delinquency into a fundamental social problem. He believed that the empire had entered its old age and corruption had crept in. The four humors, that is the soldiers, the scholars, the merchants, and the peasants were no longer in balance, leading to frailty and sickness in the body politic. The expenses of the treasury were thus progressively increasing while its income was decreasing. The only way out for the treasury was an iron-fisted grand vizier who could impose *corvées* or direct demands on subjects'time.<sup>54</sup> His recommendation was fundamental social reform based on humoral theory and on fourteenth-century historian Ibn Khaldun's (d. 1406) understanding of the historical development of polities. The empire was facing a social problem of such philosophical depth that it seemed to have no simple technical solution.

So, when and how did calendar reform become the technical solution to the problem that Katip Çelebi diagnosed? In 1652/3, the empire did not have a fully articulated financial bureaucracy. Some money came from the Sultan's own patches of land strewn across the empire; some money came from mines—most of which were not profitable and thus remained non-functional for much of the seventeenth century; and some money came from governorates, such as Egypt, whose main relation to the center was the tribute they paid once a year. The dynasty had largely lost control over its land holdings during the late sixteenth century and resorted to contractors and tax farmers to collect at least a part of the potential revenue. Subsequently, they were also forced to rely on extraordinary taxes to make ends meet. But with the appointment of İshak Efendi as the first Chief Accountant at the tail end of the century as well as a much larger overhaul of the financial bureaucracy under the Grand Vizierate of Fazıl Ahmed Paşa (in office 1661–1676), we can speak of an articulated and somewhat independent financial bureaucracy.

Thus, time became money in the seventeenth century. In some non-trivial way, taxation made time because “[f]or both the well-connected individuals in the capital city and those in the provinces, getting a piece of government tax revenues became an activity more lucrative than investing in agriculture, trade, or

<sup>51</sup> Unat, *Çevirme Kılavuzu*.

<sup>52</sup> Sahillioğlu, “Sıvış Year Crises.”

<sup>53</sup> Sariyannis, “Katip Çelebi's Position.”

<sup>54</sup> Katip Çelebi, *Düsturü'l-Amel*.



manufacturing.”<sup>55</sup> The process by which time and money became intertwined in the seventeenth-century Ottoman Empire is not entirely different from the way the financial industry today makes time by projecting a future that remains essentially unknown.<sup>56</sup> The Ottoman year was, first and foremost, the fiscal year punctuated by key dates when taxes had to be paid and debts had to be settled. And, punctuality was largely a function of the timely payment of these. According to Elias, “Time-measuring or synchronization is a human activity with specific objectives, not merely a relationship but a capacity for establishing relationships.”<sup>57</sup> Following Elias’ train of thought, economic relationships may have determined the very capacity to form social relationships in the Ottoman Empire.

Time was not necessarily money in the earlier periods. Tunç Şen has convincingly argued that mosque timekeepers (*muvaakkits*) and astrologers (*müneccims*) were the masters of time in the fifteenth and the sixteenth centuries, whereas the masters of time were undoubtedly the bureaucrats in the seventeenth.<sup>58</sup> Religion had also been the key element in determining time in earlier centuries. Stephen Blake’s *Time in Early Modern Islam* argues precisely that—the hijri calendar was “the principal method of defining and organizing the day.”<sup>59</sup> However, Blake assumes that timekeepers were always professional astronomers, which in the seventeenth century they were not. The Ottoman calendar was a Roman, which is to say a Julian, calendar. The almanacs were organized by Julian months. And although the almanacs included the hijri months, they were not an organizing element. The main, and perhaps only, concession that the Ottoman calendar made to the hijri calendar was that it took the migration of Muhammed rather than the birth of Jesus as the zero year.

## Bureaucracy and the Calendar

In tandem with the new taxation practices and the growth of a financial bureaucracy was a growing commitment to numeracy among the bureaucrats. In the fifteenth and the sixteenth centuries, *kanun* meant common law—a body of local precepts that were historical in nature. In the seventeenth century, *kanun* texts were mostly budgets.<sup>60</sup> When Katip Çelebi recommended the suppression of salaries, he referred to *kavanin*. One of the more famous examples of the *kavanin* genre, Hezarfenn Hüseyin’s *Telhisü’l-Beyan fî Kavanin-i Al-i Osman* (*A Brief Discourse on Ottoman Laws*), included not only a detailed account of the structure of the state, with special emphasis on financial matters, but also an actual budget.<sup>61</sup> These texts offered a compendious breakdown of income and expenses. On the expense end, they explained the hierarchical salary structure of the state, the salary amounts, and the number of people receiving the said salary. On the income end, these texts enumerated the different accounts that went into the budget.

The measurement of time was an essential component of bureaucratic numeracy. Seyfullah Çelebi (d. 1606), a tax bureaucrat, explained why the calendar was important in his “Days of the Month according to the Arabic Lunar Calendar, the Rumi Solar Calendar, the Alexandrian Calendar, etc.: Treating the Tax Budget and the Lands of the Imperial Treasury:”

If an imperial tax farm[,] the produce of which are sold for three lunar years yields three crops, a thousand ninety-five days will have passed, while according to the lunar calendar, only one thousand sixty-two days will be written down. Each time this happens, there emerges a discrepancy of thirty-three and three quarters of day. Eight days short of thirty-two and a half lunar years [sic!], there will be thirty-two crops. This period will cover a full thirty-two solar years. This means that every one hundred years, there are three years of arrears. These arrears cause loss and trouble for the imperial treasury, and vex the subjects, because they have to pay fines on these arrears and other taxes.<sup>62</sup>

While the bureaucratic ways of measuring time was sporadic and occasionally inaccurate, the prescriptive potency of such measurements was commensurate with the power of the bureaucrats that enforced them. For example, Seyfullah Çelebi’s testimony suggests that bureaucrats were already skipping tax years for certain farms in the early seventeenth century.

<sup>55</sup> Karaman and Pamuk, “Ottoman State Finances,” 603.

<sup>56</sup> Adkins, “Practice as Temporalisation,” 356.

<sup>57</sup> Elias, *Essay on Time*, 38.

<sup>58</sup> Şen, “Reading the Stars.”

<sup>59</sup> Blake, *Early Modern Islam*.

<sup>60</sup> Ayn Ali, *Kavanin-i Al-i Osman*.

<sup>61</sup> Hezarfen Hüseyin, *Telhisü’l-Beyan*.

<sup>62</sup> MS Hacı Mahmud Efendi 6344, 88a.

A codified version of bureaucratic time is the almanac, specifically the *New Almanac*. The putative origin of the almanac is Şeyh Vefa, a *Suñi* figure and mosque timekeeper, who was also the namesake of the Vefa neighborhood of Istanbul. *Ruzname-i Şeyh Vefa* or Şeyh Vefa's *Almanac* was a relatively common document that originated in Istanbul. The *New Almanac* appeared in the early seventeenth century and its author was Ayn Ali, a high-level accountant.<sup>63</sup> Katip Çelebi believed that most of his contemporaries could read an almanac.<sup>64</sup>

The *New Almanac* is a short codex of six or seven sheets that includes a “key to the Ruzname,” which lists the years, with special emphasis (expressed in color) on skipped tax years. What you find on the first page is a table covering a few or several centuries, occasionally organized by metonic cycles. This key would grow more important in the eighteenth century and would eventually become the Ruzname itself. Darendeli Mehmed Efendi (d. 1739?) often receives credit for this transformation involving the invention of an 8-year cycle for date calculation. Expectedly, he was also a bureaucrat in the treasury. The *New Almanac* also featured calculations for the day of the week that falls on the vernal equinox or the Tax Day, also called *Nevruz-ı Sultani* or the Sultan's *Newroz*. Although the Ruzname lists hijri years on the key, the body of the text is the Rumi or Julian calendar that lists the Roman months. The entire document is littered with astrological annotations, mostly of a natural or medical sort. There is often a list of fortunate and unfortunate days of the month. The bureaucrat's mark is the red ink used for financially important dates.

The astronomical inaccuracies of the *New Almanac* exemplify a type of epistemic fore-closure. Everyone who engaged with astronomy in Istanbul during the second half of the seventeenth century shared two things in common. They all were or had been tax bureaucrats and none of them pursued astronomy for the sake of pure knowledge. Katip Çelebi, who is known to have studied some astronomy; Tezkireci İbrahim (fl.1660), known today for his very partial translation of Noel Durret's *Nouvelle theorie des planetes*; Şemseddin Ahmed (d. 1708), called İshak Hocası after his student İshak; Ebubekir Behram Dimaşki (d. 1691), known for participating in the translation of Janszoon Bleau's *Atlas maior*; Panagiotes Nikousios (d. 1673), Grand Dragoman to the Porte, and, finally, İshak, student of Şemseddin Ahmed, had all collected or registered taxes.<sup>65</sup> In fact, every single one of these figures except Katip Çelebi, who died in 1657, was present in the Ottoman siege of Uyvar/Nove Zamky in 1661–1662 as bookkeepers and astrologers. That is to say, in seventeenth-century Istanbul, tax-collection, astronomy, and astrology went hand in hand. The *New Almanac* accounts for the bulk of astronomical literature coming out of seventeenth-century Istanbul, where no one wrote texts dealing with ephemerides or theoretical astronomy.<sup>66</sup>

Using the *New Almanac* required a minimum amount of technical skill. For most users, that meant familiarizing oneself with Nasir al-Din al-Tusi's *Muhtasar fi İlm el-Tencim ve Marifet el-Takvim* or *Epitome in the Science of Astrology and the Skills [Requisite for] the Calendar*, commonly known as *Si Fasl* or *Thirty Chapters*. This short text—the copy used by Tahir Nejat Gencan and Muammer Dizer ran thirty pages—had been translated into Turkish twice, once in the fifteenth century and again in the sixteenth. The text is so simple that it is not clear whether one had to read it carefully to pick up the skills it contained.

The first chapter of *Si Fasl* introduces the letter-based sexagesimal notation, which differs from Arabic numerals. The second chapter gives the days of the week, followed by chapters on how to calculate months and years, on the heavenly bodies, on the signs of the zodiac, and on the aspects of the planets. Chapter thirteen turns to how to read a calendar:

On the far left of the calendar, one finds the days of the week. The second column gives the days of the Arabic month by name or by number. Another column gives the location of the moon, which is that part of the zodiac where the moon is located at midday. Then, a column gives the hour when the moon passes from one part of the zodiac to the other. This column indicates whether the shift takes place during day or night. Then, you get six columns for the six heavenly bodies, which indicates where the moon is in relation to the six heavenly bodies.<sup>67</sup>

As for the qualitative content of the calendar, Tusi says, “On the twelve sheets, the calendars indicate what one should do and what one should avoid on that day. They also include an annual forecast and indicate

<sup>63</sup> İhsanoğlu et al., *Osmanlı Astronomi Literatürü Tarihi*, 252–54.

<sup>64</sup> Katip Çelebi, *Lexicon bibliographicum*, 6:308.

<sup>65</sup> Küçük, *Science without Leisure*, 119.

<sup>66</sup> *Ibid.*, 46–48.

<sup>67</sup> Gencan and Dizer, *Ma'rifet el-Takvim*, 41–43.

where each planet is.” This general explanation is handy but does not completely match seventeenth-century calendars. For one, seventeenth-century calendars from Istanbul routinely lacked numerical information on the planets. What one finds instead is information on the Arabic days and hours. When planets are featured, the content is largely qualitative and pertains to practical astrology only—conjunctions, oppositions, aphelia, and perihelia. As such, the almanac represents public knowledge. The almanacs included in tabulated form matters that would interest many quotidian readers. Also of interest to both the taxpayers and the bureaucrats were the fiscal dates marked in red (**Figures 1 and 2**).

The Ruzname had neither a religious nor an astronomical mandate. It was not astronomically accurate. It predicted the days of the week roughly and could be off by a day or two. It also was not useful for religious purposes. Finally, the Ruznames also made time in an interventionist sense: the almanacs not only described, but also prescribed tax days and skipped years.

Bureaucratic calendars occasionally missed Ramadan. If one follows Prophet Muhammed’s precedent to the letter, Ramadan begins with the first sighting of the crescent moon after the sunset of the twenty-ninth day of Shaban. Some countries, even today, use an empirical method—someone looking for the moon—to set the date of the first day of Ramadan. Saudi Arabia prides itself in having sophisticated computer systems that produce reliable hijri calendars, thus leaving no need for visual confirmation. In 1727, grand vizier Damad İbrahim Paşa hosted a party on a Monday night because the calendars—largely bureaucratic items by this point—said that Ramadan would begin Tuesday night. While the party was going on, Şeyhzade Efendi, who was the Chief Judge of Istanbul, saw the crescent moon and ordered the lighting of the candles. He did not notify Damad İbrahim Paşa beforehand, leaving it to the grand vizier and his guests to learn that the month of Ramadan was upon them by seeing the lit candles like everyone else. Having a party on the first day of Ramadan caused a mild scandal. Istanbul’s heavily-taxed residents did not like that the grand vizier was partying during Ramadan, especially because the incident came right after he had fixed the prices of tulips at the height of the speculative tulip market—a single bulb could fetch as much as four or five hundred gold pieces.<sup>68</sup> When incidents involving the calendar erupted, especially controversies over the first and last days of Ramadan, we encounter the bureaucrat, who used the *New Almanac*, pitted against Istanbul Efendisi, the Kadı of Istanbul, who was observing the moon.<sup>69</sup>

	Mah-I Azer, that is March, the first month of Spring according to the Greeks						
Times/Seasons	Days of the Roman Month	Days of the Week	Position of the Sun	Number of Days:31	Arabic Hour	Arabic Day	Table of Years
The beginning of the Rumi year. This is the season to tend to cherries and figs.	1	3	21		Day 6:30	17	1
It is good to start work on the twentieth.	2	2	22		Day 12	6	2
First crops arrive in Rum.	3	1	23		Day 2	24	3
Last cold week. Unfortunate.	4	7	24		Day 8	14	4
The ants are visibly hungry. The stork's belly is freezing.	5	6	25		Day 11	3	5
	6	5	26	Aphelion of Mercury	Night 11:30	22	6
Moon in Abhiyya (25th station) / Adverse winds	7	4	27	Venus strongest	Night 3:30	11	7
Cucumbers are planted.	8	3	28		Night 4	30	8
Silkworms emerge.	9	2	29		Night 5:30	18	9
End of the second [fifty day period] of Winter	10	1	30		Day 6	8	10
Nevruz-I Sultani [tax day]	11	7	1		Night 9	26	11
Movement of sanguine humors	12	6	2		Night 9	16	12
Snakes leave their holes.	13	5	3		Night 1:30	4	13
Critters start to move.	14	4	4		Night 9:30	23	14
Start purgatives	15	3	5		Day 12	12	15
	16	2	6		Day 4	131	16
Good to plant and tend to saplings	17	1	7		Night 12	20	17
Storm	18	7	8		Night 6	9	18
	19	6	9		Night 2	28	19
Moon in Muqaddem (26th station). Unfortunate	20	5	10				
Nightingales start to sing. Spring night 11:30 - 12:30	21	4	11				
	22	3	12				
	23	2	13				
	24	1	14				
	25	5	15				
	26	6	16				
	27	5	17				
	28	4	18				
	29	3	19				
	30	2	20				
	31	1	21				

**Figure 1:** Partial Translation of Anonymous Ruzname, Milli Yazmalar FB380, 13b.

<sup>68</sup> Şemdanizade, *Mür'it-Tevarih*, 371.

<sup>69</sup> Navoni, “Rouz-namé.”

**ماه از ربعی مازت اول بهار بر موجب قول یونانیان**

**المواظبه**

سال	روز	عدد ایام	ساعت	دقیقه	ثانیه
سال ۱۷	۶	۲۲	۱	۲۲	۱۰
سال ۱۸	۶	۲۳	۲	۲۳	۱۰
سال ۱۹	۶	۲۴	۳	۲۴	۱۰
سال ۲۰	۶	۲۵	۴	۲۵	۱۰
سال ۲۱	۶	۲۶	۵	۲۶	۱۰
سال ۲۲	۶	۲۷	۶	۲۷	۱۰
سال ۲۳	۶	۲۸	۷	۲۸	۱۰
سال ۲۴	۶	۲۹	۸	۲۹	۱۰
سال ۲۵	۶	۳۰	۹	۳۰	۱۰
سال ۲۶	۶	۳۱	۱۰	۳۱	۱۰
سال ۲۷	۶	۳۲	۱۱	۳۲	۱۰
سال ۲۸	۶	۳۳	۱۲	۳۳	۱۰
سال ۲۹	۶	۳۴	۱۳	۳۴	۱۰
سال ۳۰	۶	۳۵	۱۴	۳۵	۱۰
سال ۳۱	۶	۳۶	۱۵	۳۶	۱۰
سال ۳۲	۶	۳۷	۱۶	۳۷	۱۰
سال ۳۳	۶	۳۸	۱۷	۳۸	۱۰
سال ۳۴	۶	۳۹	۱۸	۳۹	۱۰
سال ۳۵	۶	۴۰	۱۹	۴۰	۱۰
سال ۳۶	۶	۴۱	۲۰	۴۱	۱۰
سال ۳۷	۶	۴۲	۲۱	۴۲	۱۰
سال ۳۸	۶	۴۳	۲۲	۴۳	۱۰
سال ۳۹	۶	۴۴	۲۳	۴۴	۱۰
سال ۴۰	۶	۴۵	۲۴	۴۵	۱۰
سال ۴۱	۶	۴۶	۲۵	۴۶	۱۰
سال ۴۲	۶	۴۷	۲۶	۴۷	۱۰
سال ۴۳	۶	۴۸	۲۷	۴۸	۱۰
سال ۴۴	۶	۴۹	۲۸	۴۹	۱۰
سال ۴۵	۶	۵۰	۲۹	۵۰	۱۰
سال ۴۶	۶	۵۱	۳۰	۵۱	۱۰
سال ۴۷	۶	۵۲	۳۱	۵۲	۱۰
سال ۴۸	۶	۵۳	۳۲	۵۳	۱۰
سال ۴۹	۶	۵۴	۳۳	۵۴	۱۰
سال ۵۰	۶	۵۵	۳۴	۵۵	۱۰

**اخلاص حکما**

ابتداء سال و میان در کراس و آنچه  
 آنگاه سنک زمانند که حسنه و آنچه  
 ایشده مباشرت ایتک ایورد

طور زمار روده کلور  
 آخر برد العوز خمس  
 مورعین تنه  
**طلوع اخبیه** اختلاف الیاع  
 خیار ایلور  
 ظهور دود القراس کون ایوج کون  
 آخر خمیس  
**نور و سلطان**  
 حرکات اخلاط دمویه  
 ایلان ایندن طشره جیقر  
 ابتداء حرکة الحشرات  
 ابتداء شرب مسهل و فصد  
 فدان دینک و اشلق خویدر  
 فورتنه  
**طلوع مقدم خمس**  
 بیل او نمکه باشلر ساعت بهار لیل  
 بیل او نمکه باشلر ساعت بهار لیل  
 اسر کون کون  
 کوردا حترانیک لاند  
 سیرده و بیازدن و غلیظ  
 و مهمل طعامی ساد  
 ایلان زبقات  
 تنه کدر

عطار دین زین  
 زهر نیک شوق  
 نورق الاستی  
 مشربینک  
 شمس محل طهارت  
 ساعت بهار لیل  
 آمدن پرستوا  
 اول سفر دنیا  
 آمدن چیلو  
 زباد اولک  
 اول النجم  
 سالد  
 ایک غر  
 برموده قیچیک

تاشنیک اونی کونی  
 تشریح آتلیک کیمی  
 کونیدر  
 بیلدی  
 روش  
 دریا  
 حرکت  
 کلور  
 قریبه  
 سانس  
 حشرات  
 بره  
 کبره  
 کوز  
 فصل  
 انک  
 اوغنی  
 مندی  
 حکم  
 کلیک  
 وقت  
 خرد  
 طلوع  
 ایلسه  
 مدت  
 طلوع  
 و  
 اوج

Figure 2: Anonymous Ruzname, Milli Yazmalar FB380, 13b. Image courtesy of Türkiye Yazma Eserler Kurumu.

The *New Almanac* was a middle-brow text written by middle-brow people who could only flourish in the orderly society they hoped to help create. Folkish prognostic texts existed as a separate genre, *melhame*, and were rich in astrological prognoses.<sup>70</sup> The *New Almanac*, by contrast, was a sterile and taut document that provided little amusement or emotional anticipation. The absence of juicy prognoses also sets the Ottoman almanac apart from many of its counterparts in Europe.<sup>71</sup> The *New Almanac* also lacked precise astronomical

<sup>70</sup> Boyraz, *Fal Kitabı*.  
<sup>71</sup> Capp, *English Almanacs*, 31.

data. Thus, it was also quite unlike William Lilly's or Andrea Argoli's almanacs, which included plenty of numerical information on planetary locations.<sup>72</sup>

## Conclusion

Does the seventeenth-century Ottoman bureaucrat have a place in the history of knowledge? In this article, I have tried to portray the bureaucrat's modest efforts to bring some order to seventeenth-century Ottoman budgets. Mine is a preliminary sketch at best, but it nevertheless gives the reader a sense of what bureaucratic numeracy was and what numerate bureaucrats could accomplish with limited resources. Seventeenth-century Ottoman society was not a scientific society because it had no professional scientists or philosophers. In this sense, speaking of theoretical knowledge or applied science is not meaningful. When historians could not find among their actors a desire for certain knowledge, or *episteme*, they often relied on anthropological insights. In particular, they have deployed the terms *metis* and *bricolage*. Both terms indicate resourcefulness, making-do, and figuring things out on the fly. However, it seems that *metis* and *bricolage* are far too common and require absolutely no deliberate desire for knowledge, and thus say little about bureaucratic numeracy. Clearly, the almanacs and tax surveys were not objects of *episteme*, but nor were they products of tinkerers or amateurs. One may easily find more formal and more informal ways of knowing and doing, ways of knowing and doing that would more properly deserve to be called *episteme* or *metis*. Perhaps the history of knowledge can fill the large gap between exceptionally rare scientific knowledge and extremely ubiquitous *metis* or *bricolage*. Perhaps, the Ottoman bureaucrat falls within this large gap.

Bureaucratic activity is also a practice that may or may not involve knowledge. I myself have called the almanac a genre of practical naturalism, where the defining feature of natural knowledge is the lack of concern for higher registers of abstraction and certainty. As something that serves human needs, bureaucracy shares its moral valence with other types of practical naturalism, including healing practices, engineering, and the like. These practices become good practice or *eupraxia* to many of us insofar as the practitioners aspire to certainty or abstraction. And, what we often call pragmatism, which is privileging practice over theory, may also mean the relative absence of *eupraxia*. Extreme pragmatism, one that makes any pragmatic philosophy look quaint, arises out of situations where one simply has to engage in *praxia* without a binding concern for *eupraxia*. In the worst-case scenario, which many of us consider to be bureaucratic corruption, *eupraxia* is entirely absent. In situations such as the one I describe in this article, it is possible to see some aspiration toward *eupraxia*. The bureaucrats produced budgets, spreadsheets, calculations, and calendars with a reasonable amount of concern for mathematics. They did not have to.

And, "good-enough" knowledge, or sometimes even less, is how most people satisfy their desire for knowledge. Practice has a certain priority over theory because the free exercise of theoretical reason requires leisure, which in turn requires surplus gained from productive work. The scientist and the bureaucrat differ from one another because the former has the leisure to pursue knowledge for its own sake while the latter, even in the most ideal circumstances, does not. Knowledge is always for the sake something else unless one is a truth-seeker by vocation. Rarely have societies redistributed their surplus such that some people can pursue knowledge to its fullest extent and seek epistemic closure instead of epistemic fore-closure.

Seventeenth-century Ottoman bureaucrats naturally had some sense of excellence, but the feedback loop—knowing whether they were on the right track or not—had little to do with their tasks. Indeed, only religious practice seemed to expose the shortcomings of the calendar. Missing the beginning of Ramadan, however, was missing the beginning of Ramadan. It was not enough of a cause for the bureaucrats to go back to the drawing board. Nor were the bureaucrats terribly concerned about the actual productivity of the surveyed land when the budget was in balance. By fixing the taxes on hypothetical calculations, they foreclosed further investigation because they did not seem to feel the need.

## Competing Interests

The author has no competing interests to declare.

## Bibliography

### *Archival Sources and Manuscripts*

Seyfullah, Çelebi el-Defteri. Risale-i Eyyam-ı Eşhur-ı Arabiyye-i Kameriye ve Mahan-ı Rumiye-i Şemsiye ve İskenderiye.... MS Hacı Mahmud Efendi 6344, 85b–88b.

<sup>72</sup> See, e.g. Lilly, *Ephemeris*.

### Other Sources and Literature

- Abou-el-Haj, Rifa'at Ali. *Formation of the Modern State: The Ottoman Empire, Sixteenth to Eighteenth Centuries*. Albany: State University of New York Press, 1992.
- Adkins, Lisa. "Practice as Temporalisation: Bourdieu and Economic Crisis." In *The Legacy of Pierre Bourdieu: Critical Essays*, edited by Simon Susen and Bryan S. Turner, 347–65. London: Anthem Press, 2011. DOI: <https://doi.org/10.7135/UPO9780857289278.016>
- Akdağ, Mustafa. "Celali İsyanlarının Başlaması/Der Beginn der Celaliden-Aufstaende." *Ankara Dil ve Tarih-Coğrafya Fakültesi Dergisi* 4, no. 1 (1946): 23–50. DOI: [https://doi.org/10.1501/Tarar\\_0000000269](https://doi.org/10.1501/Tarar_0000000269)
- Anonymous. *İsazade Tarihi*. Edited by Ziya Yılmaz. İstanbul: Fetih Cemiyeti, 1996.
- Atay, Hüseyin. "Medreselerin Gerilemesi." *Ankara Üniversitesi İlahiyat Fakültesi Dergisi* 24, no. 1 (1981): 15–56. DOI: [https://doi.org/10.1501/Ilhfak\\_0000000617](https://doi.org/10.1501/Ilhfak_0000000617)
- Atkinson, Will. "Time for Bourdieu: Insights and Oversights." *Time & Society* 28, no. 3 (2018): 951–70. DOI: <https://doi.org/10.1177/0961463X17752280>
- Ayn Ali, Efendi. *Kavanin-i Al-i Osman der Hülasa-i Mezamin-i Defter-i Divan*. İstanbul: Enderun, 1979.
- Blake, Stephen P. *Time in Early Modern Islam: Calendar, Ceremony, and Chronology in the Safavid, Mughal and Ottoman Empires*. Cambridge, UK: Cambridge University Press, 2013. DOI: <https://doi.org/10.1017/CBO9781139343305>
- Boyras, Şeref. *Fal Kitabı, Melhemeler ve Halk Kültürü*. İstanbul: Kitabevi, 2006.
- Çakır, Baki. "Geleneksel Dönem (Tanzimat Öncesi) Osmanlı Bütçe Gelirleri." In *Osmanlı Maliyesi: Kurumlar ve Bütçeler I*, edited by Mehmet Genç and Erol Özvar, 167–96. İstanbul: Osmanlı Bankası, 2006.
- Canbakal, Hülya. "On the 'Nobility' of Provincial Notables." In *Provincial Elites in the Ottoman Empire (Halcyon Days in Crete 5)*, edited by Antonis Anastasopoulos, 39–50. Rethymno: Crete University Press, 2005.
- Capp, Bernard. *English Almanacs, 1500–1800: Astrology and the Popular Press*. Ithaca: Cornell University Press, 1979.
- Collins, James B. *Fiscal Limits of Absolutism: Direct Taxation in Seventeenth-Century France*. Berkeley: University of California Press, 1988.
- Darling, Linda. "Ottoman Fiscal Administration: Decline or Adaptation?" *Journal of European Economic History* 26, no. 1 (1997): 157–77.
- Darling, Linda. *Revenue-Raising and Legitimacy: Tax Collection and Finance Administration in the Ottoman Empire 1560–1660*. Leiden: Brill, 1996.
- Demirci, Süleyman. "Collection of Avarız and Nüzul Levies in the Ottoman Empire: A Case Study of the Province of Karaman, 1620–1700." *Belleten* LXIX, no. 256 (2005): 1–15.
- Demirci, Süleyman. "Collectors of Avarız and Nüzul Levies in the Ottoman Empire: A Case Study of the Province of Karaman, 1621–1700." *Belleten* LXIX, no. 254 (2005): 539–65.
- Elias, Norbert. *An Essay on Time*. Edited by Steven Loyal and Stephen Mennell. Dublin: University College Dublin Press, 2007.
- Engammare, Max. *L'ordre du temps. L'invention de la ponctualité au XVIIe siècle*. Geneva: Droz, 2004.
- Genç, Mehmet. *Osmanlı İmparatorluğu'nda Devlet ve Ekonomi*. İstanbul: Ötüken, 2000.
- Gencan, T.N., and Dizer, M. Trans. and eds. *Muhtasar fi' İlm el-Tencim ve-Ma'rifet el-Takvim*. İstanbul: Kandilli Rasathanesi, 1984.
- Georgeon, François, and Hitzel, Frédéric, eds. *Les Ottomans et le temps*. Leiden: Brill, 2012. DOI: <https://doi.org/10.1163/9789004217799>
- Gingerich, Owen. "The Civil Reception of the Gregorian Calendar." In *Gregorian Reform of the Calendar: Proceedings of the Vatican Conference to Commemorate Its 400<sup>th</sup> Anniversary, 1582–1982*. Edited by G.V. Coyne, M.A. Hoskin, and O. Pedersen, 265–80. Vatican: Pontifica Academia Scientiarum, 1983.
- Greene, Molly. "An Islamic Experiment? Ottoman Land Policy on Crete." *Mediterranean Historical Review* 11, no. 1 (1996): 60–78. DOI: <https://doi.org/10.1080/09518969608569705>
- Hezarfen Hüseyin. *Telhisü'l-Beyan fi Kavanin-i Al-i Osman*. Edited by Sevim Ilgürel. Ankara: TTK, 1998.
- İhsanoğlu, Ekmeleddin, et al. *Osmanlı Astronomi Literatürü Tarihi*. 2 vols. İstanbul: IRCICA, 1997.
- Karaman, Kivanç, and Şevket Pamuk. "Ottoman State Finances in European Perspective, 1500–1914." *Journal of Economic History* 70, no. 3 (2010): 593–629. DOI: <https://doi.org/10.1017/S0022050710000550>
- Katip Çelebi. *Bozuklukların Düzeltmesinde Tutulacak Yollar (Düstürü'l-Amel fi Islahi'l-Halel)*. Edited by Ali Can. Ankara: Kültür ve Turizm Bakanlığı, 1982.
- Katip Çelebi. *Lexicon bibliographicum et encyclopaedicum*. 6 vols. Edited by Gustav Flügel. Leipzig and London: Oriental Translation Fund, 1835–1858.

- Kökdaş, İrfan. "Land-Ownership, Tax Farming and the Social Structure of Local Credit Markets in the Ottoman Balkans, 1685–1855." *Financial History Review* 24, no. 1 (2017): 1–29. DOI: <https://doi.org/10.1017/S0968565017000099>
- Kolovos, Elias. "Beyond 'Classical' Ottoman *Defterology*: A Preliminary Assessment of the Tahrir Registers of 1670/71 Concerning Crete and the Aegean Islands." In *The Ottoman Empire, The Balkans, The Greek Lands: Toward a Social and Economic History – Studies in Honor of John C. Alexander*, edited by Elias Kolovos, Phokion Kotzageorgis, Sophia Laiou, and Marinos Sariyannis, 201–35. Istanbul: Isis Press, 2007. DOI: <https://doi.org/10.31826/978146322544-017>
- Kunt, Metin. *The Sultan's Servants: The Transformation of Ottoman Provincial Government, 1550–1650*. New York: Columbia University Press, 1983.
- Küçük, Harun. *Science without Leisure: Practical Naturalism in Istanbul, 1660–1732*. Pittsburgh: University of Pittsburgh Press, 2019. DOI: <https://doi.org/10.2307/j.ctvt1sg0p>
- Lilly, William. *Merlini Anglici Ephemeris: Or, Astrological Judgments for the Year 1676*. London: Macock, 1676.
- Luper, Steven. "Epistemic Closure." In *The Stanford Encyclopedia of Philosophy* (Winter 2018 Edition). Edited by Edward N. Zalta. <https://plato.stanford.edu/archives/win2018/entries/closure-epistemic>.
- McGowan, Bruce. *Economic Life in Ottoman Europe: Taxation, Trade and the Struggle for Land*. Cambridge, UK: Cambridge University Press, 1981.
- McNutt, Jennifer Powell. "Hesitant Steps: Acceptance for the Gregorian Calendar in Eighteenth-Century Geneva." *Church History* 75, no. 3 (2006): 544–64. DOI: <https://doi.org/10.1017/S0009640700098620>
- Nabi, Hayriyye. Edited by Mahmut Kaplan. Ankara: Atatürk Kültür Merkezi, 2015.
- Navoni, Giovanni-Battista. "Rouz-namé ou Calendrier perpétuel des Turcs." *Fundgruben des Orients* 4 (1814): 38–67.
- Ogle, Vanessa. *The Global Transformation of Time, 1870–1950*. Cambridge, MA: Harvard University Press, 2015. DOI: <https://doi.org/10.4159/9780674915992>
- Özel, Oktay. *The Collapse of Rural Order in Ottoman Anatolia, Amasya 1576–1643*. Leiden: Brill, 2016. DOI: <https://doi.org/10.1163/9789004311244>
- Özel, Oktay. "The Reign of Violence: The Celalis c.1550–1700." In *The Ottoman World*, edited by Christine Woodhead, 184–202. Abingdon, Oxon, UK: Routledge, 2012.
- Özvar, Erol. "Transformation of the Ottoman Empire into a Military-Fiscal State: Reconsidering the Financing of War from a Global Perspective." In *The Battle for Central Europe: The Siege of Szigetvár and the Death of Süleyman the Magnificent and Nicholas Zrínyi (1566)*, edited by Pál Fodor, 21–63. Leiden: Brill, 2019. DOI: [https://doi.org/10.1163/9789004396234\\_004](https://doi.org/10.1163/9789004396234_004)
- Özvar, Erol. "XVII. Yüzyılda Osmanlı Taşra Maliyesinde Değişme: Diyarbakır'da Hazine Defterdarlığından Voyvodalığa Geçiş." *IXth International Congress of Economic and Social History of Turkey* (2005): 93–117.
- Parker, Geoffrey. *Global Crisis: War, Climate Change and Catastrophe in the Seventeenth Century*. New Haven, CT: Yale University Press, 2014.
- Paşa, Defterdar Sarı Mehmed. *Zübde-i Vekayıat: Tahlil ve Metin (1066–1116/1656–1704)*. Edited by Abdülkadir Özcan. Ankara: Türk Tarih Kurumu, 1995.
- Sabapathy, John. "Making Public Knowledge—Making Knowledge Public: The Territorial, Reparative, Heretical, and Canonization Inquiries of Gui Foucois (ca. 1200–1268)." *Journal for the History of Knowledge* 1, no. 1 (2020): 1–21. DOI: <https://doi.org/10.5334/jhk.23>
- Sahillioğlu, Halil. "1683–1740 'da Osmanlı İmparatorluğunun Hazine Gelir ve Gideri." In *Osmanlı Maliyesi: Kurumlar ve Bütçeler I*, edited by Mehmet Genç and Erol Özvar, 149–66. İstanbul: Osmanlı Bankası Arşiv ve Araştırma Merkezi, 2006.
- Sahillioğlu, Halil. "Sivış Year Crises in the Ottoman Empire." In *Studies in the Economic History of the Middle East: From the Rise of Islam to the Present Day*, edited by M.A. Cook, 230–54. London: SOAS, 1970.
- Salzmann, Ariel. "An Ancien Régime Revisited: 'Privatization' and Political Economy in the Eighteenth-Century Ottoman Empire." *Politics and Society* 21, no. 4 (1993): 393–423. DOI: <https://doi.org/10.1177/0032329293021004003>
- Sariyannis, Marinos. *A History of Ottoman Political Thought up to the Early Nineteenth Century*. Leiden: Brill, 2019. DOI: <https://doi.org/10.1163/9789004385245>
- Sariyannis, Marinos. "Katip Çelebi's Position in Early Modern Ottoman Thought." In *International Katip Çelebi Research Symposium Proceedings*, 23–34. İzmir: İzmir Katip Çelebi Üniversitesi Yayınları, 2017.

- Sariyannis, Marinos. "Temporal Modernization in the Ottoman Pre-Tanzimat Context." *Études Balkaniques* 53 (2017): 230–62.
- Scott, James C. *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. New Haven, CT: Yale University Press, 1998.
- Şemdanizade, Fındıklılı Süleyman. *Şem'dani-zade Fındıklılı Süleyman Efendi Tarihi: Mür'it-Tevarih*. Edited by Münir Aktepe. Istanbul: Edebiyat Fakültesi Matbaası, 1976–1981.
- Shafir, Nir. "Moral Revolutions: The Politics of Piety in the Ottoman Empire Reimagined." *Comparative Studies in Society and History* 61, no. 3 (2019): 595–623. DOI: <https://doi.org/10.1017/S0010417519000185>
- Stamatopoulos, Dimitris. "The Poor Men of Christ and their Leaders. Wealth and Poverty within the Christian Orthodox Clergy of the Ottoman Empire (18th–19th c.)." In *Wealth in the Ottoman and Post-Ottoman Balkans: A Socio-Economic History*, edited by Evguenia Davidova, 85–101. London: I.B. Tauris, 2016. DOI: <https://doi.org/10.5040/9781350989726.ch-005>
- Tezcan, Baki. *The Second Ottoman Empire: Political and Social Transformation in the Early Modern World*. Cambridge, UK: Cambridge University Press, 2010.
- Tilly, Charles. "The Time of States." *Social Research* 61, no. 2 (1994): 269–95.
- Tunç Şen, Ahmet. "Reading the Stars at the Ottoman Court: Bayezid II (r.886/1481–918/1512) and His Celestial Interests." *Arabica* 64 (2017): 557–608. DOI: <https://doi.org/10.1163/15700585-12341461>
- Unat, Faik Reşit. *Hicri Tarihleri Miladi Takvime Çevirme Kılavuzu*. Ankara: TTK, 1988.
- White, Sam. *The Climate of Rebellion in the Early Modern Ottoman Empire*. Cambridge, UK: Cambridge University Press, 2011. DOI: <https://doi.org/10.1017/CBO9780511844058>
- Wishnitzer, Avner. *Reading Clocks, Alla Turca. Time and Society in the Late Ottoman Empire*. Chicago: University of Chicago Press, 2015. DOI: <https://doi.org/10.7208/chicago/9780226257860.001.0001>
- Yaycıoğlu, Ali. *Partners of the Empire: The Crisis of the Ottoman Order in the Age of Revolutions*. Stanford: Stanford University Press, 2016. DOI: <https://doi.org/10.1515/9780804798389>
- Yaycıoğlu, Ali. "Perdenin Arkasındakiler: Osmanlı İmparatorluğunda Sarraflar ve Finans Ağları Üzerine Bir Deneme." *Journal of Turkish Studies (Festschrift in Honor of Özer Ergenç II)* 52 (2019): 375–96.
- Yılmaz, Gülay. "The Economic and Social Roles of Janissaries in a 17th Century Ottoman City: The Case of Istanbul." PhD diss., McGill University, Montreal, 2011.

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