The *ex libris* of King Farouk (1920–1965), representing the printing press in Egypt.

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Outdating: The Time of "Culture" in Colonial Egypt

ON BARAK

Once, in [Caliph] ʿUmar's time, when the Month of Fast came round, some people ran to the top of a hill, in order to have the luck of seeing the new moon; and one of them said, "Look, there is the new moon, O ʿUmar!" As ʿUmar did not see the moon in the sky, he said, "This moon has risen from thy imagination. Otherwise, since I am a better observer of the heavens than thou art, how do I not see the pure crescent? Wet thy hand and rub it on thine eyebrow, and then look for the new moon." When the man wetted his eyebrow, he could not see the moon. "O King," said he, "there is no moon; it has disappeared." "Yes," said ʿUmar, "the hair of thine eyebrow became a bow and shot at thee an arrow of false opinion."

—Jalāl al-Dīn al-Rūmī, "The Man Who Fancied He Saw the New Moon"[1]

Accounts of the relations between timekeeping and authority divulge a politics of fact-setting, whose black-boxed mechanisms this article aims to probe. How is the world made objective? And how is this process related to the emergence of a sphere of culture designated as "subjective"? "The Man Who Fancied He Saw the New Moon," by the Sufi poet Jalāl al-Dīn al-Rūmī, sets the stage: the Islamic calendar. This lunar calendar is based on direct observation of the night sky. Its proper name, the "Hijrī calendar," denotes the fact that the first Islamic year marks the Hijrah, the Prophet's emigration from Mecca to Medina in 622 CE. In the text, ʿUmar (579–644), the caliph who established this calendar, has the authority to command the observer to clean his eye, thereby revealing the absence of the moon, or at least leading to the man's realization that he should be wiser than to claim to spot the moon before the most observant caliph. The opposite could not have been the case: had ʿUmar himself seen a hair rather than the moon, none of his subordinates would have told *him* to clean his eyes, and the hair would have become fact, launching the month of Ramadan. Fact-setting, timekeeping included, involves hierarchies of power. When facts are contested, authority is what distinguishes a crescent in the sky from a hair in the eye of the beholder.

After a remarkable longevity from the seventh century on, in the nineteenth century ʿUmar's lunar calendar was eclipsed in key spheres of life in colonial Egypt by the Gregorian calendar, the result of a series of shifts over a period of several decades beginning in the 1870s. A new division of labor between these temporal systems resulted in the transformation of the Hijrī calendar—once the primary timekeeping scheme in a comprehensive textual universe predicated on the logic of the transmission of the *ḥadīth*, or accounts of the deeds and sayings of the Prophet Muḥammad—into a cultural artifact, a mere religious calendar recording festivals and holidays. From a framework mediating the facts of nature to the sphere of sociability, this calendar was demoted to a subjective matter of faith and ritual. Yet, rather than an already present domain, the independent existence of "culture" and "religion" cannot be presupposed; rather, "culture" itself was in the making. Calendric reform at this very period involved the emergence of such supposedly insulated domains as free-floating spheres wherein human belief, solidarity, manners, and customs could be divorced from a host of new technologies that profoundly structured these arenas, apparatuses that wrote themselves under erasure, slyly removing their footprints from the picture.

This relegation of a previously operative form of social timekeeping, organization, and expression into a purely "cultural" domain took place just as Egypt was affixed to Europe by means of newly introduced steamer, railway, and telegraph lines, as well as the Suez Canal (inaugurated in 1869), which together replaced the long sea voyage to India around the Cape of Good Hope. This new infrastructure transformed Egypt into the geographical center (literally a "Middle East") and simultaneously an economic and political periphery of the British Empire. Peripheralization-through-centralization also entailed, at multiple levels, the temporal standardization and harmonization required to make all these technologies work in synch. Examining calendric reform at this moment and in this context reveals how commensurability operated across a colonial divide, divulging harmonization and its discords.

The clash of calendars and the way that clash was eventually decided throws the tension between the technical, social, and cultural aspects of media (i.e., any frame or platform for mediating content and conveying meaning) into sharp relief. Rather than assuming a given "cultural" component in any media, a "technological" efficacy, or an inherent "social" dimension, we gain insight into how these "cultural," "technical," and "social" aspects were defined, split from one another, and hierarchized. Thus, rather than analytically shunning technical or cultural determinisms when examining media, the clash of calendars reveals these determinisms as entangled and coproducing

emergent historical categories and forces.

The intersection of media technology and calendric harmonization in a colonial setting allows us to address a question that goes beyond the history of modern Egypt—indeed, even beyond the important gesture of provincializing the Eurocentric history of media—the question of the relationship between the cultural form and temporal synchronization. Johannes Fabian formulated this relationship as one involving a "denial of coevalness." According to this thesis, in contrast to how anthropologists represented "primitive societies," cultural difference is in fact inherently coeval; that is, based on temporal simultaneity. Nineteenth- and early twentieth-century anthropology (to which we may add evolutionary biology and a host of other teleological social and natural sciences) constructed its object by denying the contemporaneity of the researcher and the indigenous.[2]

Fabian's critique of these outmoded disciplines is echoed in more recent understandings of the modern world as a synchronized, horizontal, flattened space. This is the case with postcolonial critiques that seek to provincialize Europe and break away from a diachronic notion of progress led by the West, a notion said to misrepresent the world's actual coevalness.[3] This is also the case with understandings of nationalism—seen as a product of new media such as the novel and newspaper—that are based on a new simultaneity, allowing people to imagine themselves as moving together with strangers through empty homogeneous time. And it is also the case in much of the history of science and technology—from Lewis Mumford's assertion that "the clock is not merely a means of keeping track of the hours, but of synchronizing the actions of men. The clock, not the steam-engine, is the key machine of the modern industrial age," to Peter Galison's much more nuanced account of the interplay of trains and clocks.[4] Benedict Anderson (following Walter Benjamin and Henri Bergson), Dipesh Chakrabarty, and Galison: each in his own way stresses the great effort and historicity of the synchronization of the modern world. And as Galison shows for Albert Einstein, the notion of spatiotemporal relativity was based on such laborious synchronicity. But just as Einstein was crafting his theory of relativity in Bern, artificial synchronization triggered the emergence of various indigenous notions of temporal relativity in the colonies. What follows attends to the implications of their originators' inability (political no less than intellectual) to contain them in ontological space-time. "Culture" was a solution to this spillover.

To posit this claim as a deus ex machina reversal of Fabian's thesis: Is it possible that "cultural difference" was the product of the technological creation of temporal coevalness? Large-scale temporal schemes structure and are structured by quotidian

temporalities. The astronomical time of months and years that calendars mark informed the point at which the day began and the length of the hour.[5] Time signals measured in seconds and transmitted through submarine intercontinental telegraph cables, and the train schedules they punctuated on shore, were thus connected at the navel to the Gregorian solar calendar, which contrasted them with the "Arabic day" that started at sunset or the uneven hours belonging to the universe of the lunar Islamic calendar. Promoting the Gregorian calendar over competing temporalities meant enabling and defending the hegemony and efficacy of Western mechanical standard time. The fraught and partially successful construction of technical coevalness was also the process whereby "cultural difference" was born.

This multicausal and multisited historical transformation will be examined here in an especially revealing arena, the newly established Arabic press, whose history begins in the 1870s after a few earlier stutters.[6] In practically all Arabic textual production preceding the last third of the nineteenth century, the Hijrī calendar was the undisputed organizing principle. Be it in historical texts, biographical dictionaries, or historiography, Hijrī dates ordered a text's internal structure (by offering the framework in which events and people were related to one another), informed its diachronic position in a tradition or a canon (which, especially in the case of religious literature, connected all texts to the moment of Hijrah), and defined its synchronic relations with contemporaneous works similarly organized. The degree to which everyday life followed this lunar calendar was probably quite limited. Yet, more practical calendars, such as the Coptic solar one (the main temporal scheme punctuating agricultural life in Egypt), made only unassuming incursions into written texts. Like classical Arabic—nobody's mother tongue, but the only proper medium for approaching written texts—the Hijrī calendar was the lingua franca of Arabic letters until it was dislodged by the Frankish Gregorian calendar. This new solar calendar, unlike the Coptic calendar it formally replaced in 1875, did not shy away from texts. On the contrary, it arrived with an entirely new, telegraphic textuality, the newspaper, which was connected to a global economy and a global communications network that required meeting global synchronization standards. The replacement of the Coptic time of cotton agriculture with the Gregorian time of cotton finance and news had sweeping implications for the Hijrī calendar.[7]

This double-pronged focus on textual and calendric reform allows us to probe technology's role in shaping new "chronotopes"—ways that newly introduced temporal conventions restructured communication and discourse, new modes whereby

technology textualized time.[8] If the Hijrī calendar was the key system for organizing the premodern textual universe, how did this universe respond to the combined calendric and textual transformation brought about by telegraphy?

Lunar Eclipses

The Hijrī calendar is a purely lunar calendar without intercalation and is thus independent of the seasons; it is determined by observation of the evening sky and is therefore unpredictable. For this reason, Muslims have always also relied on solar and quasi-solar calendars for agriculture or taxation.[9] Al-Jabartī's chronicles of the French invasion of Egypt (1798–1801) and police and court records throughout the nineteenth century contain multiple dating systems side by side.[10] Labor migration from Southern Europe and increasing interference from Western Europe were among the factors making this multiplicity of calendars increasingly common and also increasingly contested during the nineteenth century, eventually recasting difference and multiplicity as cultural opposition and dichotomy. In this context, 1870 marks both the beginning of a process of harmonization of calendric systems and the eventual decline of the Hijrī calendar.

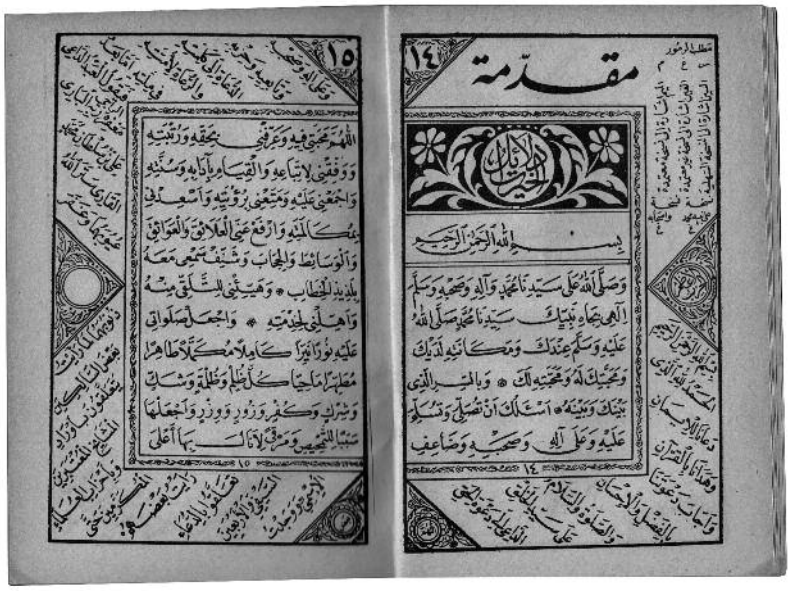
The first printed calendar in Egypt to be widely distributed for private use was published in the year 1870 by Maṭbaʿat Wādī al-Nīl (Wādī al-Nīl Printing House), one of the first semi-private Arabic printing houses in Cairo. The appearance of the calendar was tied to developments in printing technology in the last third of the nineteenth century, particularly to new possibilities for fitting more words in a line and more lines on a page, which made printed products significantly cheaper and more affordable for mass consumption.[11] Printing presses facilitated the concentration of information in legible formats that gradually replaced hand copying.[12] The first Arabic printing press to be brought into Egypt was carried by Napoleon's army of occupation in 1798. The orientalists accompanying the troops used the press to print pamphlets about the compatibility of the French Revolution and Islam. These printouts revealed, however, the incommensurability of the timekeeping systems used by occupiers and occupied: for instance, the first pamphlet was printed on either the thirteenth or the fifteenth day of the revolutionary month of Messidor, the sixth year of the republic, which al-Jabartī thought occurred "toward the end of the month of Muḥarram [AH 1213]"—about ten days off the mark.[13]

The subsequent adoption of the printing press by Egypt's rulers, from Mehmet ʿAli on, offered a prêt-à-porter technological connection between the ideals of the French Revolution and the *Nahḍah*—the literary "awakening" of the second half

of the nineteenth century, often understood as a response to European influence. Throughout the century, the governmental Būlāq Press, founded in 1820, printed hundreds of Arabic translations from European languages, including several almanacs harmonizing the Coptic year with the Hijrī one.[14] Even as far as the press's efficiency and professional standards were concerned, European printing houses were used as the yardstick for quality and speed.[15]

Yet technology is always anchored in a particular setting, from which it derives much of its meaning. In their early decades, Arabic printing technologies were closely tied to the calligraphic culture that they later replaced. Wādī al-Nīl's calendar is a good example of a product tailored for a particular readership in a market dominated by hand-copied texts, such as *Dalā'il al-Khayrāt* (Guidelines to the blessings), a popular almanac stipulating prayer times (and a best-seller of the eighteenth and nineteenth centuries).[16] Before the middle of the nineteenth century, almanacs including the Hijrī and Coptic calendars seem to have been the most popular paper products after the Qur'ān, circulating in high-quality calligraphy copies among elites and in low-quality commercial copies among commoners.[17]

Another example of the tension between the intended use of new printing technologies and their eventual local use is provided by newspapers. In 1867 Wādī al-Nīl Printing House started printing the pioneering, semiprivate, biweekly newspaper *Wādī al-Nīl* (The Nile Valley). The newspaper was subsidized by the Khedive Ismā'īl, for whom the absence of a private press was a lacuna in Egypt's modernization. The paper was modeled after the European newspapers that had proliferated in Alexandria (including *Wādī al-Nīl*'s namesake, *Le nil*), which were the paper's main sources of inspiration and news. Like contemporary European periodicals, *Wādī al-Nīl* was serialized, and its readers were encouraged to leather-bind the



sections together. Such hybridizations helped familiarize the newspaper form to a reading public accustomed to the nonsecular and less-ephemeral textual form of the book (a form wedded to Hijrī time).

Yet, European influence was again only one part of the story. Just as important was the fact that the biweekly issues of *Wādī al-Nīl* regularly reproduced portions of such landmark Arabic works as Ibn Baṭūṭah's fourteenth-century travel narrative, which was serialized by the Wādī al-Nīl Printing House in 1870 (later that year, the press sold a printed compilation of the entire book).[18] Whereas in Victorian Britain, Germany, and the United States serialization was a format for science, politics, and new, often innovative literature of varying quality, in Egypt serialization was also used for the "classics." And while that misnomer incorrectly assumes that such books had not been constantly read by modern readers, even though hand-copied versions of texts by Ibn Khaldūn and Ibn Baṭūṭah were never out of vogue, it is possible that printing and serialization themselves transformed these texts into classics.[19]

In 1870 the newspaper offered a readymade platform for advertising the press's newly printed calendars. As the first ad stated, "Wādī al-Nīl Printing House launches a meticulous and systematic rendition of calendar time as is the practice in the European countries. It is a presentation of the year AH 1287, including a juxtaposition of the correct lunar Arabic months with the Coptic, Frankish, and Roman [*rumi*] months." After indicating the novelty of this temporal device in Egypt, the ad further suggests how to use the calendar (glue it on two sides of a piece of cardboard or hang it on a wall) and who might benefit from it (bankers and employees of the Egyptian administration). As the ad makes clear, several temporal systems coexisted in Egypt. The Coptic solar year regulated agriculture and taxation, the "Frankish" Gregorian calendar was used in banking and cotton exchange, and the Hijrī calendar was used by the administration and the educated public. Finally, the "*rumi* months" referred to the Seleucid calendar or possibly the Julian calendar. Both the Julian and Seleucid calendars served Christian communities in Egypt and the Ottoman lands, while the Julian calendar also had an Ottoman administrative purpose. The new printed calendar promised to help navigate this multiplicity.

However, calendric harmonization was unraveling even in its festive inception. The first ad was published on "Friday, 21 Muḥarram 1287, corresponding to April 19, 1875, the fourth year of the newspaper." Yet, if *Wādī al-Nīl* started printing in 1866–1867, the fourth year should have been 1870–1871, the year corresponding to AH 1287. A computerized date converter reveals that 21 Muḥarram 1287 corresponds to April 22, 1870, rather than to April 19, 1875. These mismatches appeared

Dalā'il al-Khayrāt **(Guidelines to the blessings), mid-nineteenth-century hand-copied manuscript of fifteenth-century text. An example of pre-telegraphic textuality.**

frequently on the header of the front page of the newspaper. In each case an incorrect Gregorian date was coupled with the correct Hijrī one. For example, the calendar was advertised again on a Hijrī date "corresponding to April 45."[20]

Such mismatches in calendar dates reveal synchronization as a laborious and effortful process. These breakdowns expose the fragility of an ostensibly seamless temporal grid. They stand in sharp contrast to the claim by Fabian in *Time and the Other* that cultural difference is coeval or simultaneous. Rather than a natural state of coevalness that in turn gets denied, or the plurality of a multicultural world at the end of a liberal horizon, we see a radical alterity made commensurable only with difficulty and partial success.[21]

Admittedly, AH 1287 was a confusing year for calendar conversion. Consider the Ottoman financial calendar: the *Maliyye* "fiscal year" was a scheme based on the Julian calendar that attempted to keep the counting of tax years in line with the years of the Hijrah by omitting one year for every thirty-three. In 1287 the system broke down when the omission scheduled for that year was not implemented, creating a discrepancy between the Maliyye and Hijrī years.[22] Egyptian almanacs referenced the Ottoman Maliyye year until the First World War. Up to 1875, Egypt conducted its financial affairs according to the Coptic calendar.[23] That year the country's connection to a network of intercontinental telegraph lines instigated the replacement of this calendar with the Gregorian one. Telegraphic connectivity and instantly available global commodity prices allowed Egypt to quickly take advantage of the U.S. Civil War. With the temporary dwindling of American cotton production and trade, European markets shifted to Nile Basin cotton, creating an Egyptian cotton boom during the 1860s and early 1870s. Yet the same wired, global cotton market shifted back to American cotton after the war, dragging Egypt into escalating indebtedness. The pressures of debt repayment for European creditors and state bankruptcy forced the Egyptian government to adopt the Gregorian calendar, severing the time of cash from that of cash cropping and agriculture, which continued to follow the Coptic calendar:

> Whereas the ministries' engagements with Europeans are mostly conducted according to the Frankish months while budgets and calculations follow the Coptic months, and even though in both systems the annual number of days is the same, to prevent date disagreement we decree that the government will conduct its financial affairs according to the Frankish months.[24]

In 1876, *Al-Ahrām*, a private Egyptian newspaper founded by two Syrian Christian brothers across the street from Alexandria's

***Wādī al-Nīl*, May 7, 1869.**

Cotton Exchange, adopted a dating procedure that employed a Gregorian date as the standard. In the newspaper, which was initially devoted to telegraphic news about things such as commodity prices, the Gregorian date appeared on the right side of the page, with the corresponding Hijrī date on the left. (Because Arabic is read from right to left, placing the Gregorian date on the right gave it primacy.)

In the mid-1870s, similar shifts in standards took place in other texts. Consider the autobiography of the champion of timetables, ʿAlī Mubārak, the railway manager responsible for the introduction of train schedules into Egypt. In his narration of his childhood and early government service, Mubārak deploys the Hijrī calendar. Yet when he first mentions Egypt's debt, in 1876, he suddenly adopts the Gregorian calendar, which he then uses for the remainder of the text.[25] In such shifts, debt provides the particular context for the introduction of the equation of time and money into Egypt. The Gregorian calendar (and the monetized quotidian temporalities associated with it) indexed, and was tainted by, the beginning of an epoch that began with imperial debt collection and management, ushering ever-more-invasive forms of control and interference. Because it was calendrically synchronized with the global economy, Egypt was already behind—on its payments, among other things. Once again, commensurability revealed itself to be a protocol of differentiation.


الصفحة الاول من العدد الثالث ، السنة الثالثة ، من صحيفة « وادى النيل » ، الصادر فى ٢٦ محرم سنة ١٢٨٦هـ (٧ مايو ١٨٦٩م) ، وتشغلها عبارات التعريف بالصحيفة .

What I call "the time of money" has a particular history: according to Jacques Le Goff, the rise of commercial capitalism in medieval Europe involved a transformation in the telling of the hour from the unequal hours of the monastic day to the precision of the clock, a shift from "church time" to "merchant time."[26] The Hijrī calendar, by contrast, was connected to a different system of quotidian timekeeping. Because the Hijrī month begins with a moon sighting in the evening sky, the "Arabic day" starts at sunset, as opposed to the "Frankish day," which was believed to start at high noon.[27] Thus, for Egyptians the twelve-hour day was divided into "evening" and "morning" rather than AM and PM, as was the case with train schedules, which were also introduced in 1870 and printed in *Wādī al-Nīl*.[28] Because the sun sets and rises at different times depending on the season, the length of every hour during the "Arabic day" varied seasonally with the result that watches and clocks had to be reset daily.[29] By contrast,

the "Frankish day" occurred without variation and was divided into twelve even hours.[30]

Such differences in timekeeping systems were repeatedly discussed in the new scientific journals that were published starting in the mid-1870s, such as *Al-Muqtaṭaf* (1876) and *Al-Hilāl* (1892). Often, the readers raising the issue of conflicts in different temporal systems in question-and-answer columns were employees of the Egyptian administration or the Egyptian State Railways.[31] The logics of train schedules and debt management required a stable time-to-money conversion rate and seemed to favor the Frankish day and Gregorian year.

As the Gregorian calendar was gradually yet firmly established in Egypt, dating errors in Hijrī dates in the press slowly became more common than for Gregorian dates. Disagreements over the determination of the lunar month acquired a new visibility. The journal *Al-Siḥāfah*, for example, issued this apology on January 6, 1905: "Whereas the previous edition carried the date Friday, the first day of the month of Dhu al-Qaʿdah, it was in fact 30 Shawwāl, even though some astronomers say the former date is correct." The journal requested that readers stop alerting its editors about such mishaps—a request suggesting that more than a few of these complaints had been filed.

In 1916, young ʿAbd al-Razzāq al-Sanhūrī, the future Egyptian legal reformer, wondered just before leaving to study in France why he should remember the Islamic date of his birthday. In a diary entry from August 14, he wrote about the day before yesterday, his twenty-second birthday:

> I don't know why I do not know my birthday according to the Arabic calendar. Why does it matter to me if I knew I was born in Rajab or Shawwāl or Dhu al-Hijjah as long as I know I was born on August 12, 1895 AD [Mīlādī]. . . . Why should I want my birthday to be Arabic?

However, to indicate that these were not merely rhetorical questions, he concluded the note with a resolve not to submit to the erasure of his Arabic birthday (which had never existed), or at least to try: "I want to strengthen my will power; will I succeed?"[32]

Al-Sanhūrī belonged to a generation of effendis (educated middle-class professionals) born in the 1880s and 1890s (after the mid-1870s calendar shift), whose fathers were the first to document the birth dates of their children according to the Gregorian calendar or with both the Gregorian and Hijrī calendars.[33] Al-Sanhūrī was not questioning the importance of having "a birthday" per se or of knowing the exact moment of his birth. The celebration of the birthday, a personal nativity scene, became popular in Egypt during the first decades of the twentieth century.[34] Premodern Islamic scholars sometimes also

recorded their birth year—and less frequently also the month and day—but they did so in Hijrī time and for reasons having to do with the need to situate a *ḥadīth* transmitter in time and place. Because the teachings of the Prophet were transmitted orally from person to person, the key protocol used by later analysts trying to ascertain the soundness of a tradition was to calculate whether every two interlocutors in the chain of transmitters were able to share the same time and space. For members of the effendiyya, knowing one's exact age distinguished oneself from the lower classes and provided an apt response to British assumptions about Egyptian attitudes to time. "Few uneducated Egyptians," wrote Lord Cromer, the British consul-general and the de facto architect of Egyptian colonialism, "know their own age. The usual reply of an Egyptian, if asked the age of some old man, is that he is a hundred years old."[35] In a system wherein middle-class Egyptians internalized and extended such admonitions, birth dates became class markers wedded to colonial renditions of the trope of Oriental time—mindlessness, a long-standing view of Egyptians as indolent, slothful, and incapable of rational thinking.

In Western Europe, the practice of recording births started in parish churches, which registered candidates for baptism, thereby signifying "the appearance of Christian souls in new corporeal forms."[36] In the nineteenth century, compulsory registration of births became the practice by which an infant was included in citizenship in many places in Western Europe.[37] The secular registration of births in modern nation-states had distinct Christian origins. The secularized Gregorian calendar became post-Christian in a context whose significance outshines the mere fact that this calendar bears the name of Pope Gregory XIII: its eventual adoption even by Protestants forged an interconfessional unity predicated on separating social harmony from religion. The calendar united European Christendom while simultaneously secularizing it. In Egypt this calendar had a similar secularizing effect, splitting "the social," which it now organized, from "the religious," which was relegated to the Hijrī calendar.

The calendric shifts in Egyptian newspapers and in the writings of figures such as Mubārak and al-Sanhūrī offer scattered signposts of a standard shift whose telos is familiar: the hegemony of Arabic dates as points of reference was undermined and eventually overridden. As Abdelfattah Kilito sardonically writes,

> Arabic literature is subject to a double chronology. At first, and for a long time, it was tied to the Islamic calendar, then one day, without warning, it moved to the Christian calendar! One day, after seven centuries of recumbency,

it leaped up suddenly and gracefully over six centuries, and found itself in the middle of the nineteenth century.[38]

Like Kilito, I am concerned here less with trying to date this outdating—an incomplete and messy process that happened differently in different spheres—than with tracing some of its mechanisms, implications, and contexts. According to Talal Asad, the emergence of secularism in Egypt involved relegating a new object—"religion"—to the private sphere.[39] Asad's analysis of family law reform during the last third of the nineteenth century may be complemented by stressing the colonial origins of the notion that Islam, like European Christianity, had two dimensions: it was both a benign "religion" and also a "social system" in serious need of reform.[40] This may be a key explanation for (and one of the outcomes of) a new division of labor between the Gregorian and Hijrī systems, wherein the latter's role increasingly shrank to regulating religious festivals and holidays.

Yet even in the limited sphere of "religion," the Hijrī calendar did not remain intact. Consider the practices of Ramaḍān moon sighting. In 1903, Islamic reformer Rashīd Riḍā (1865–1935), known as a key turn-of-the-century synthesizer of Islam and modern technoscience, issued two fatwas (i.e., responsa) that indicate how these protocols had changed. The first came in response to a question about varying moon sightings before Ramaḍān and the resulting differences in the start of fasting. The inquirer asked whether, to avoid such discrepancies, actual sightings could permissibly be replaced with printed calendars. Riḍā replied that temporal incongruity among communities located in relative proximity could be explained only by false sightings. But printed lunar calendars could not solve the problem because they disagreed on the beginning of the lunar months. Riḍā's solution was to adopt the time dictated by the authorities in the capital.[41]

What needed no mention in this early twentieth-century fatwa, though it vitally conditioned it, was that since the early 1870s, in tandem with the new train schedules, Cairo time had been disseminated telegraphically to the Egyptian provinces. This allowed Riḍā to assume in 1903 that a moon sighting in the capital could instantly initiate the month of Ramaḍān even in the remotest corner of Egypt. This was by and large a safe assumption. But already in 1873, a belated telegram from Cairo about the sighting of the Ramaḍān crescent had caused the Muslims of Port Said to miss the first day of the fast.[42] Beyond the suboptimal performance of the telegraph, such mishaps reveal the extent to which people relied on this device as a new timekeeping technology.

In the second fatwa, Riḍā made clear that the start of Ramaḍān

stipulated in Egyptian newspapers applied only inside Egypt and should not be followed by readers in other countries, where direct sighting of the moon should remain the yardstick. Riḍā explained that it was important for all Egyptian Muslims to begin and conclude the fast together—because collectivity and concord (*al-ijtimāʿ waʾl-ittifāq*) in performing religious rituals are essentials of Islamic dogma—but that other countries must adopt their own procedures.[43] What needed no mention was the fact that Egyptian newspapers were circulated onboard trains and steamers quickly enough to raise the question (posed to Riḍā) of whether their calendric information should be followed abroad.

In both fatwas, Riḍā answered a political concern involving disagreements about moon sightings by offering a political solution, one that accepted the centralizing logic of his day. Rather than resolving disagreement locally, Riḍā succumbed to the authority of the central government of the nation-state, thus ensuring temporal harmony.[44] If, in Benedict Anderson's *Imagined Communities*, temporal simultaneity is what provides the conditions of possibility for the nation-state, for Riḍā the nation-state guarantees religious simultaneity.[45] Simultaneity inside the community hinges on the community's temporal difference from other communities. The national homogeneity of time is always in comparison, constantly supported by temporal heterogeneity.

Riḍā did not renounce the need to physically sight the moon. Though he implicitly relied on the telegraphic transmission of a centrally determined Ramaḍān time to the provinces, the moon still had to be properly spotted in the capital. Though the project of harmonizing Islam and technoscience usually served to make Islam compatible with technologics, converting new technologies to Islam and understanding them in religious terms was just as important. For the telegraph, this task was carried out in the first two decades of the twentieth century by Shaykh Muḥammad Bakhīt al-Muṭīʿī (d. AH 1354/1935 CE), the *qāḍī* (judge) of Alexandria and later the grand mufti of Egypt.

In his 1911 *Kitāb Irshād ahl al-Millah ilā Ithbāt al-Ahillah* (The book on guiding the religious community to the verification of the crescents), al-Muṭīʿī made an analogy between telegraphic transmission of moon-sighting news and the transmission of the *ḥadīth* accounts, both denoted by the same word, *akhbār*. Placing the telegraph in the framework of *ḥadīth* transmission was crucial to allowing the technology to be used for the dissemination of Cairo time: according to Islamic law, for a sighting of the Ramaḍān crescent to count, it has to be reported by an upright (*ʿadl*) Muslim. But what about the mediation of telegraph operators who might be unjust or non-Muslim? Should the number of telegraphers involved in transmitting a

sighting report matter? Should the procedures of court testimony, requiring two witnesses, be applied to telegraphy? Such questions were addressed to al-Mutīʿī and to Riḍā before him.[46]

Al-Mutīʿī's solution was to regard telegraphers as passive "mediators" (singular: *wasītah*) rather than as "transmitters" of telegraphic news.[47] Bracketing operators made telegraphing a moon sighting comparable not to testifying in court but to narrating a *ḥadīth,* requiring only one transmitter. Further, if several telegrams were received, even through the same telegraph line, they should be regarded as *akhbār mutawātirah*—a category of *ḥadīth* analysis denoting independent reports that corroborate one another.[48] Unlike Riḍā, who did not question the need for an initial physical moon sighting in Cairo, al-Mutīʿī followed the opinion of the Shāfiʿī jurist Taqī al-Dīn al-Subkī (1284–1355 CE), according to which testimonies of crescent sighting should be rejected if they contradicted astronomical calculations.[49]

The credibility of evidence derived from observable natural phenomena was beginning to erode. In 1913 Samuel Marinus Zwemer, an American missionary in Egypt, recorded a suggestion by a certain "al-Zarqāwī," printed in the nationalist newspaper *Al-Shaʿb,* to introduce a "solar Hijrī year."[50] Using the Gregorian calendar, al-Zarqāwī determined that the Hijrah took place on September 22, 622 CE. He suggested adopting this date as the beginning of the Muslim calendar for everything but religious festivals, which would be determined by moon sighting.[51]

By AH 1357/1939 CE the importance of the moon was definitely waning. That year, the Supreme Sharīʿah Court in Egypt determined that the month of Dhu al-Hijjah began on Saturday, January 20. ʿĪd al-Aḍḥā (the Festival of Sacrifice) was hence celebrated in Egypt ten days later, on Monday, January 30. But Egyptian readers of *Al-Muqaṭṭam* knew that the Saudi Arabian government had decided that the first of the month was not Saturday but Sunday, January 21, and the *ʿĪd* was thus celebrated in the Arabian peninsula on Tuesday, January 31. And readers of *Al-Balāgh* discovered that the Muslims of Bombay celebrated the festival on Wednesday as a result of the establishment of the beginning of Dhu al-Hijjah on Monday, January 22.[52] According to jurist Aḥmad Shākir, a member of Riḍā and al-Mutīʿī's milieu, such discrepancies were not the exception but the rule:

> In some Muslim countries crescent sightings result in some people sighting it while others are unable to do so. As a consequence the religious festivals differ from one Muslim country to another: some countries fast while others do not, some celebrate the Festival of Sacrifice, while on that very day others observe a fast.[53]

Given that the moon sets progressively later than the sun as one goes west, more westerly Muslims were likely to observe a new moon earlier than their eastern coreligionists, as this instance indicates. But in the age of telegraphy and steam navigation, Muslims in Cairo, Mecca, and Bombay experienced the tensions of a new connectivity. The telegraph was disseminating not only the homogeneous time of the capital; through the newspaper, it also spread the word about temporal heterogeneity, thereby bolstering national togetherness at the expense of a larger religious concord. What began as a seemingly pure technological disjunction now acquired a social dimension, one that would soon override and occlude its technical infrastructure.

Demonstrating that a new standard was emerging, Shākir's solution to these discrepancies was to abandon the principle of sighting in favor of a single calendar based on scientific computation.[54] This was the explicitly logical conclusion of the telegraphic dissemination of Ramaḍān time and the successful attempts to give temporal homogeneity official Islamic sanction. To make his case that in its current form the Hijrī calendar was unruly, Shākir resorted to the standard of Gregorian dates.

Shākir's view remains a minority opinion on the commencement of Ramadan. Yet, if the resilience of physical moon sighting is taken as an indication of the autonomy of the Islamic calendar, this resilience should also be seen as reinforcing its new and limited scope as a religious calendar only. Dissenting views like Shākir's reveal that if Europe shifted in the Middle Ages from church to merchant time, in modern Egypt even the religious establishment faced significant pressures to adopt monetized time. Other domains were even less resilient.

Telegraphic Space, Time, and Text

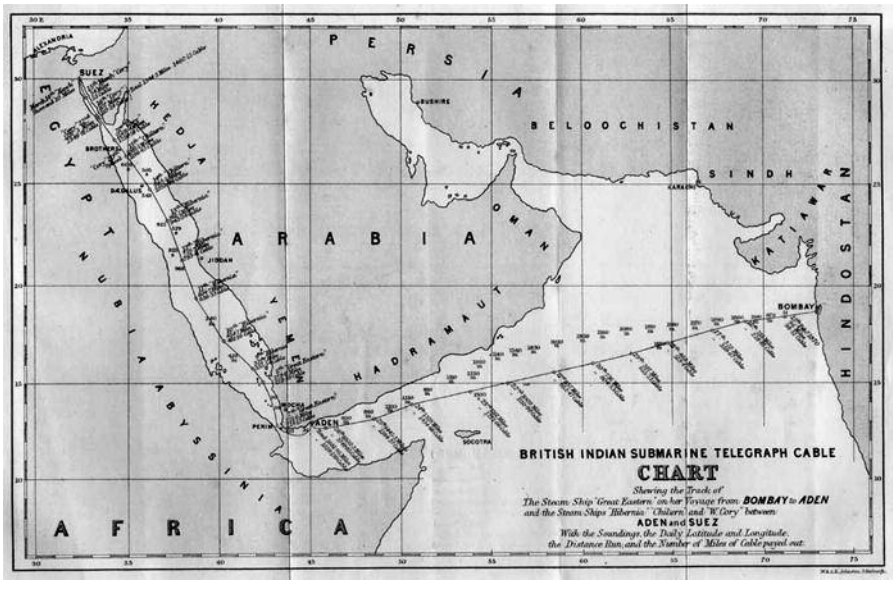
The telegraph was a key culprit in the rearrangement of calendric timekeeping in Egypt. Shifting from calendars to the newspapers that advertised and followed them, we can now examine the implications of the telegraphic reshuffling of temporal systems. How did telegraphy affect the textualization of time?

Wādī al-Nīl, the first Arabic newspaper regularly printed in Egypt, was launched in June 1867 during an official visit of Egypt's ruler, Khedive Ismāʿīl, to France and England.[55] The highlight of the royal trip was the signing of two treaties to sink submarine telegraph cables between Alexandria and the Italian shore and to connect the Malta–Alexandria–Cairo telegraph to a new London–Bombay network.[56] This second attempt at intercontinental telegraphy (after the first underwater cable succumbed to sea termites) was partly financed by news agencies operating in key nodes of this grid, including since 1865 the Reuters office in Alexandria.[57] Khedive Ismāʿīl actively participated in this process: several months after signing the afore-

mentioned treaties and establishing *Wādī al-Nīl*, he started subsidizing Reuters.[58] The genesis of the private press embedded Egypt in these new communication networks. In 1870, *Wādī al-Nīl* subscribed to Reuters's telegram service.

In the closing months of 1870, telegraphic Reuters news started appearing in *Wādī al-Nīl*'s foreign news section, bearing Gregorian dates. Domestic Egyptian news items kept their Hijrī dates. The newspaper thus revealed a temporal schism whereby foreign and local news occurred in different temporal (and spatial) domains. The Gregorian dates of foreign news were often accompanied by the corresponding Arabic date in parentheses. The telegraph thus promoted a standard shift whereby Arabic dates were for the first time bracketed, relegated to a parallel realm that required agreement. This "outdating" happened just as a correspondence was established between these two incommensurable time systems.

Before the paper subscribed to Reuters, foreign news—translated from the European-language newspapers proliferating in Alexandria—hardly ever occupied more than half a page in *Wādī al-Nīl*'s three to four pages. But the subscription to the agency's service quickly transformed the Egyptian newspaper into one mostly devoted to foreign news. Such shifts demonstrate how telegraphy reshaped the conditions of knowledge acquisition and dissemination even before the British occupation. In pretelegraphic Egypt, proximity roughly translated to familiarity: one knew more about one's immediate surroundings than about faraway places. With the advent of telegraphy, an excess of foreign news and a "thick description" of the alien quickly overclouded local knowledge. *Wādī al-Nīl* thus became one of the technologies that formed the worldview of the colonial subject, characterized by an out-of-focus world picture that was sharp around the edges and fuzzy in the center. This had to do not only with the fact that in the modern world acceler-



ated time was divorced from space, but also with specifically *how* this delinking was mediated in a colonial setting.

The imbalance of local and foreign news produced an imbalance of dates: a larger portion of the news was happening in Gregorian time, which required translation into Hijrī, and not the other way around. This protocol, wherein Gregorian dates were the source or yardstick and Hijrī dates were derivative, quickly became the rule. *Wādī al-Nīl*'s editors attempted to deal with the excess of telegraphic information by creating foreign news summaries. They approached the matter with unease:

> In the previous editions of *Wādī al-Nīl* we have so far made an effort to translate the telegraphic news accumulating until July 8 (9 Jumādā al-ūlā) and we have transmitted them in their original texts, quoting and presenting them one by one, despite their excess, so that the reader could have the choice and select the news he deems sound from which he can get a true understanding of current affairs. However, the volume of the telegraphic news amassed on July 9, 10, and 11 (10, 11, and 12 Jumādā al-ūlā) [forces us] to render them in a summary.[59]

This editorial comment captures some of the concerns regarding telegraphy's ability to collapse a multiplicity of voices into a single flattened narrative, a common trope not only among postcolonial theorists and historians of technology but for the historical actors themselves. The thesis of "flattening" had much to rely on. But, being predicated on technological determinism—which was itself a historical force (and not merely a faulty analytical framework with which to understand the history of technology)—it blinded many observers, both then and now, from recognizing the multifarious forms and inflections of technological modernity. Evidence of such multiplicity was thus understood with the new framework of "cultural difference," which can be seen as technical determinism's monozygotic twin.

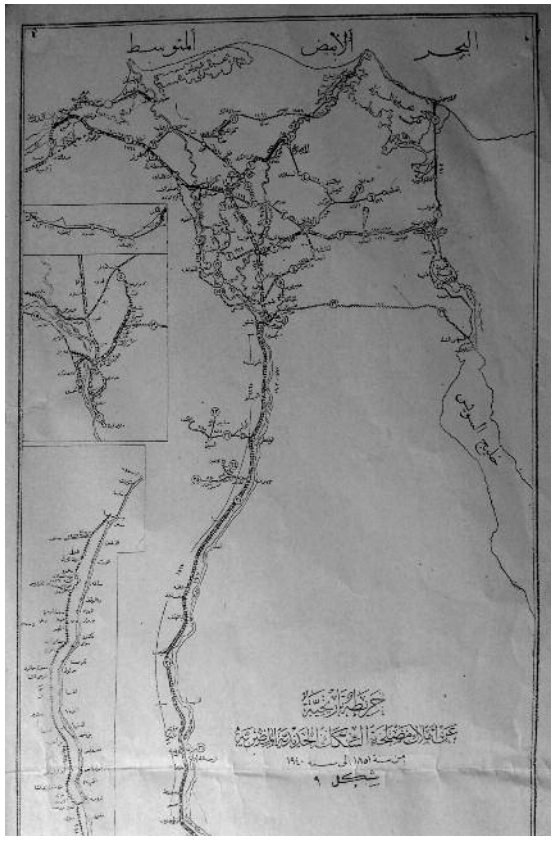
The necessity of devising new tactics for handling information excess generated other changes in important procedures of textual production. One striking development was that foreign news became shorter with the telegraph, because the newspaper omitted the news items' chain of transmitters. Pretelegraphic foreign news included an internal history detailing the circumstances of its own production, a preface modeled on the *isnād* (the chain of transmitters of a *ḥadīth*). Thus, a translated news item about violence in Mecca from May 9, 1870, opened as follows: "Translated from the journal *L'Égypte*: the following text appeared in a journal titled *Alimbrsial Dosmir* distributed on April 27 (26 Muḥarram): several newspapers discussed oral reports about what happened in Mecca."[60]

British Indian telegraph chart, 1870.

This introductory paragraph situates *Wādī al-Nīl* at the end of an elaborate sequence of sources, following *L'Égypte, Alimbrsial Dosmir*, anonymous newspapers, and unspecified oral sources. Beyond the fractured and intricate process of news transmission, this paragraph exposes the many temporal delays involved in news circulation. With the telegraph, such introductions disappeared, making room for actual news stories that now stood as independent pieces of information.

Traces of *ḥadīth*-like textual conventions and terminology in early newspapers help us appreciate how their textual extinction interfaced with calendric reform. The Hijrī calendar was connected to a particular paradigm of textuality and knowledge transmission revolving around the *ḥadīth*. The science of *ḥadīth* and the imperative to ascertain whether a reported prophetic tradition was sound or spurious were a main driving force in the development of Islamic geography, biography, and historiography. These auxiliary disciplines provided information about *ḥadīth* transmitters, their reliability, and the probability that they could occupy the same time and space to pass information from one to another. Reviewed by *ḥadīth* critics in retrospect, this textual universe was diachronically indexed by the Hijrī calendar in a perfectly reliable and legible manner.

Newspapers, by contrast, were media of synchronic information transfer. While the same word, *akhbār*, denoted journalistic as well as prophetic pieces of information, synchronic and diachronic times were for the first time competing to set the tone for textual information exchange. By effacing chains of transmission and compressing news into summarized narratives, the telegraph severed the connection between message and messenger, transmitter and text. Readers could no longer actively choose sound reports. Such a critical reading—involving constant evaluation of the genealogies of texts that lay bare the devices of their making—was replaced by a passive intake of "news" without circumstances of production, mechanically produced and reproduced, immaculately conceived like the event that launched the calendar that organized them.



Moreover, these new media infrastructures linked Egypt to the newly commensurable world in a subsidiary fashion. Consider *Al-Ahrām*: during 1876, the newspaper's distribution, carried out by the mail, followed a geographical logic whereby proximity to the head office in Alexandria meant a cheaper

subscription. *Al-Ahrām* was cheapest in the port city. Subscribing from Cairo and Syria (including Lebanon and Palestine) was more expensive than an Alexandria subscription, yet cheaper than a subscription from Europe or India.[61] Moreover, inside Egypt, the newspaper covered and was distributed almost only in places connected to the railway. Territorially speaking, the Egypt of *Al-Ahrām* was that of the railway map.

But if the railway made Egypt into a unified territory, the telegraph line that ran parallel to the railroad introduced heterogeneity into this supposedly standardized space. The direct telegraphic connection linking Cairo, Alexandria, and Europe via Malta provided urban readers with fresh daily foreign news. By contrast, reports that were sent by mail inside Egypt sometimes took several days to find their way into the newspaper, and news from neighboring countries without a railway connection with Egypt took even longer. For example, on October 7, 1876, *Al-Ahrām* printed a letter sent on September 29 by its Beirut agent:

> We do not have anything new to inform you of: all matters are peacefully following their usual course, civic serenity prevails, and everybody is happy. . . . Rumor has it that His Holiness the Roman Catholic Patriarch is expected to arrive at Beirut from Damascus in the beginning of Tishrīn al-Awwal [the Levantine month corresponding to October] and will continue by sea onboard the Austrian [steamer] toward you, arriving at Alexandria on Monday, October 9.

This typical item is revealing in several respects. First, it is a report of a nonevent, an account of an undisturbed routine. Second, it reveals two temporal systems, the lunisolar month of Tishrīn al-Awwal, at which time the patriarch is expected to arrive at Beirut, and the Gregorian October, when he is to arrive at Alexandria. Finally, the item reveals several degrees of specificity: the patriarch is expected at Beirut during the vague "beginning" of Tishrīn al-Awwal, but exactly on Monday, October 9, at Alexandria. Clearly, the schedules of Austrian steamers were more exact than those of Roman Catholic patriarchs.

Though the correspondence of the agents retained its personal nature (the patriarch was sailing "toward *you*"), telegrams adopted the monetized, compact, and impersonal language of the medium: "Security in place. Attention is paid to the crops," reads a terse Ministry of Interior report from al-Daqhalīyah; "Security in place and health is fine," reads another from Banī Suwayf.[62] Information from the Egyptian countryside came to newspapers either by mail or by telegraph. Mailed reports often stressed nonevents and were written in a

Railway map of Egypt showing the development of the railway system between 1851 and 1940. From *Egyptian State Railways Magazine*, 1941.

personal and unhurried style. Telegrams, especially governmental ones, exemplified the new logic of importance: they were terse, specific, and fresh. This configuration of news reportage positioned Egyptian urbanized newspaper readers in an uneven and uneasy relationship vis-à-vis the seemingly action-packed and "close" European centers and their slow, stagnant, uneventful, and "remote" immediate surroundings.

Countertempos

According to a familiar narrative of modernity, the telegraph introduced new forms of monetized textuality and temporality into the places it connected, decommissioning older ones such as the Hijrī calendar and the quotidian temporalities associated with it, the Arabic day and the uneven "temporal hour."[63] Telegraphy contributed to the formation of a new modern standard Arabic and had a prophylactic effect on linguistic ornamentalism and embellishment. And yet, while depleting the practical import of various traditional protocols of expression and synchronization, the telegraph charged these protocols with new energies and logics. As far as the Hijrī calendar was concerned, the telegraphic metamorphosis from a scheme indexing the facts of nature (like a clear moon in the night sky) into a matter of faith (a subjective eyelash) transformed the calendar into a free-floating, powerful cultural symbol, one whose very impracticality made it a suitable vessel for new ideological substance. For middle-class urban newspaper readers, modernized enough to know they were not modernized enough, telegraphy and its temporality fueled inferiority complexes that the Hijrī calendar and similar "cultural" forms of timekeeping in turn helped alleviate.

By the first decade of the twentieth century, such cultural forms began coagulating into a so-called Egyptian time that was contrasted with Western alienating time, a temporality understood to be disenchanted and empty—vacant from metaphysics and devoid of the divine. Only against such "others" could abstract mechanical time emerge as such, and in this sense "Egyptian time" and similar colonial theories of relativity were conditions of possibility for the status enjoyed by Western mechanical time as the gold standard. By the end of the decade, the 1908 Young Turk Revolution prompted in Istanbul the replacement of *alla turka* with *alla franka* time, marking the Ottoman Empire's embrace of Western time only a few years before the empire's dissolution.[64] Yet, in Egypt, still formally an Ottoman province, the year was celebrated with a neoclassical poem titled "Taḥīyat al-ʿĀm al-Hijrī" (Long live the *hijri* year). (The word *taḥīyah* comes from the root *Ḥ-Y-Y*, to revive, resurrect.)[65] The 1909 poem by Ḥāfiẓ Ibrāhīm reclaims for *hijrī* time various developments during what modern historians recog-

nize as the tumultuous year of 1908: constitutionalism in Turkey, civil unrest and struggle for political rights in Iran, anticolonialism in Afghanistan, and scientific progress in India. Situating Egypt in this continuum, the poet applauds the new spirit animating the nation and proclaims that the days of slumber are gone. The year 1908 also saw the beginning of a labor militancy and then political agitation culminating a decade later in an anticolonial revolution directed against Egypt's entire technical infrastructure—telegraphs, railways, tramways, telephones—and the mechanical time it held in place.

The indigenous "countertemporality" of Egyptian time was a modern creation, but it retroactively sunk roots in the ancient past; it was associated with slowness and imprecision but also with patience, authenticity, tradition, and counterhegemonic modes of togetherness, thus offering a powerful critique of the time of empire and its technologies of rule. The calendric manifestations of this Egyptian time were not insulated from the technologics of the devices that decommissioned them: through its contact with the telegraph, the Hijrī calendar absorbed various technical suppositions about, and features of, mechanical time. Yet the interface of lunar- and techno-logics gave rise to a host of new ways for time to be experienced and new hierarchies among these ways. This hierarchization was an unruly process, and the very gestures that demoted certain temporalities in practice invigorated their symbolic import. Thus, even as the newly emergent "cultural forms" became limited in their ability to play a structuring role in the social and political order, they could now offer new means for critiquing and resisting that order.

Notes

This article is based on material from On Barak, *On Time: Technology and Temporality in Modern Egypt* (Berkeley and Los Angeles: University of California Press, 2013).

1. Jalāl al-Dīn Rūmī, "The Man Who Fancied He Saw the New Moon," in *Tales of Mystic Meaning: Selections from the Mathnawī of Jalāl-ud-Dīn Rūmī*, trans. Reynold Alleyne Nicholson (Oxford, UK: Oneworld, 1995), 27.

2. Johannes Fabian, *Time and the Other: How Anthropology Makes Its Object* (New York: Columbia University Press, 2002).

3. Dipesh Chakrabarty, *Provincializing Europe: Postcolonial Thought and Historical Difference* (Princeton, NJ: Princeton University Press, 2000).

4. Lewis Mumford, *Technics and Civilization* (New York: Harcourt, Brace and World, 1963), 14; and Peter Galison, *Einstein's Clocks, Poincaré's Maps: Empires of Time* (New York: Norton, 2003).

5. On the connection between the daily schedule and the monthly calendar, see Eviatar Zerubavel, *Hidden Rhythms: Schedules and Calendars in Social Life* (Berkeley and Los Angeles: University of California Press, 1985).

6. For a history of the Arab press, see Ami Ayalon, *The Press in the Arab Middle East: A History* (Oxford, UK: Oxford University Press, 1995).

7. In one textual genre, astronomy, the Coptic calendar had a high status. This was the genre in which calendar and timekeeping were traditionally studied.

8. According to Mikhail Bakhtin, a chronotope is a spatiotemporal matrix that defines a narrative. See Mikhail Bakhtin, *The Dialogic Imagination: Four Essays*, ed. Michael Holquist, trans. Caryl Emerson and Michael Holquist (Austin: University of Texas Press, 1981).

9. B. van Dalen et al., "Ta'rīkh," in *The Encyclopedia of Islam*, 2nd ed. (Leiden: Brill, 1955–2005).

10. See ʿAbd al-Raḥmān al-Jabartī, *Napoleon in Egypt: Al-Jabartī's Chronicle of the First Seven Months of the French Occupation, 1798*, trans. Shmuel Moreh (Princeton, NJ: M. Wiener, 2004), 49.

11. On these changes, see *Wādī al-Nīl*, 1 Ṣafar 1287.

12. On the culture of book copying, see Nelly Hanna, *In Praise of Books: A Cultural History of Cairo's Middle Class, Sixteenth to the Eighteenth Century* (Cairo: American University in Cairo Press, 2004).

13. Al-Jabartī dates the pamphlet's printing to the thirteenth. Joseph-Marie Moiret dates it to the fifteenth. See al-Jabartī, *Napoleon in Egypt*, 27; and J.-M. Moiret, *Memoirs of Napoleon's Egyptian Expedition, 1798–1801*, ed. and trans. Rosemary Brindle (London: Greenhill Books, 2001), 42. *AH* stands for *anno Hegirae*, "in the year of [Muhammad's] Hegira."

14. From 1822 to 1842, three such calendars were printed by Būlāq. See J. Heyworth-Dunne, "Printing and Translations under Muḥammad ʿAlī of Egypt: The Foundation of Modern Arabic," *Journal of the Royal Asiatic Society of Great Britain and Ireland* 3 (July 1940): 325–349.

15. For example, in a decree launching a wave of reforms in the printing house during 1860, its performance is measured against foreign printing houses. See Amīn Sāmī, *Taqwīm al-Nīl* (Cairo: Matbaʿat Dār al-Kutub al-Miṣrīyah, 1936), 1:356–357; and E.W. Lane, *An Account of the Manners and Customs of the Modern Egyptians* (1836; Cairo: American University of Cairo Press, 2003), 226–227.

16. Hanna, *In Praise of Books*, 94–96.

17. ʿAbd al-Raḥmān al-Jabartī, *Al-Jabartī's History of Egypt*, ed. Jane

Hathaway (Princeton, NJ: Markus Wiener, 2006), 1:276, 2:298, 2:279–290. See also Hanna, *In Praise of Books*, 90.

18. See Ibn Baṭūṭah, *Kitāb Riḥlat Ibn Baṭūṭah al-Musammāh Tuḥfat al-Nuẓẓār fī Gharā'ib al-Amṣār wa-ʿAjā'ib al-Asfār* (Cairo: Maṭbaʿat Wādī al-Nīl, 1287(–1288) [1870–1871]).

19. The agenda of reintroducing the classics of Arabic literature in print form was avidly promoted by al-Ṭahṭāwī during this period. See Albert Hourani, *Arabic Thought in the Liberal Age, 1798–1939* (Cambridge, UK: Cambridge University Press, 1983), 72.

20. *Wādī al-Nīl*, 10 Muḥarram 1286.

21. Elizabeth A. Povinelli, "Radical Worlds: The Anthropology of Incommensurability and Inconceivability," *Annual Review of Anthropology 30* (October 2001): 327–328.

22. Van Dalen et al., "Ta'rīkh."

23. An example of such an almanac is printed in S.M. Zwemer, "The Clock, the Calendar, the Koran," *Moslem World 3* (1913): 270.

24. Sāmī, *Taqwīm al-Nīl*, 3:1251.

25. ʿAlī Mubārak, *Ḥayātī: Sīrat al-Marḥūm ʿAlī Mubārak Bāshā* (Cairo: Maktabat al-ādāb, 1989), 57.

26. Jacques Le Goff, "Merchant Time and Church's Time in the Middle Ages," in *Time, Work, and Culture in the Middle Ages,* trans. Arthur Goldhammer (Chicago: University of Chicago Press, 1980), 29–42. For a critique of this thesis, see Gerhard Dohrn-van Rossum, *History of the Hour: Clocks and Modern Temporal Orders*, trans. Thomas Dunlap (Chicago: University of Chicago Press, 1996), 138–171.

27. See "Al-Sāʿāt al-ʿArabīyah wa'l-Ajnabīyah," *Al-Muqtaṭaf* 52 (1918): 128; and "Al-Sāʿāh al-ʿArabīyah wa'l-Ifranjīyah," *Al-Muqtaṭaf* 32 (1907): 132.

28. See, for example, *Wādī al-Nīl*, 16 September 1870.

29. Karl Baedeker, *Egypt: Handbook for Travelers* (Leipzig: K. Baedeker, 1902), lxvii.

30. See the explanation in *Al-Hilāl*, 1 November 1902.

31. See, for example, *Al-Hilāl*, 1 November 1902; and *Al-Hilāl*, 15 November 1901.

32. Nādīyah al-Sanhūrī and Tawfīq al-Shāwī, eds., *Al-Sanhūrī min Khilāl Awrāqihi al-Shakhṣīyah* (Cairo: Dar al-Shurūq, 2005), 54. The word *Mīlādī* denotes the birth of Christ.

33. Other examples are Ḥasan al-Bannā's father (a watch repairer)—see Jamāl al-Bannā, *Khitābāt Ḥasan al-Bannā al-Shābb ilā Abīhi: Maʿ Tarjamah Mus'habah wa-Muwaththaqah li-Ḥayāt wa-ʿAmal al-Wālid al-Shaykh Ahmad al-Bannā* (Cairo: Dār al-Fikr al-Islāmī, 1990); Muṣṭafā Kāmil's father (an engineer who built railway stations)—see ʿAlī Fahmī Kāmil, *Mustafa Kāmil Bāshā fī Thalāthah wa-Arbaʿīn Rabīʿ: Sīratuhu wa-Aʿmāluhu min Khuṭab wa-Aḥādīth wa-Rasā'il Siyāsīyah wa-ʿUmrānīyah* (Cairo: Matbaʿat al-Liwā', 1908); and Tawfīq al-Ḥakīm's father—see *Tawfīq al-Ḥakīm, The Prison of Life*, trans. Pierre Cachia (Cairo: American University in Cairo Press, 1992), 140. See also Wilson Chacko Jacob, *Working Out Egypt: Effendi Masculinity and Subject Formation in Colonial Modernity*, 1870–1940 (Durham, NC: Duke University Press, 2011), 55, 142.

34. Galāl Amīn, *Whatever Happened to the Egyptians? Changes in Egyptian Society from 1950 to the Present* (Cairo: American University in Cairo Press 2000).

35. Evelyn Baring, Earl of Cromer, *Modern Egypt* (New York: Macmillan, 1908), 152.

36. Benedict Anderson, *The Spectre of Comparisons: Nationalism, Southeast Asia and the World* (London: Verso, 1998), 69.

37. Anderson, *The Spectre of Comparisons*, 69.

38. Abdelfattah Kilito, *Thou Shalt Not Speak My Language*, trans. Waïl S. Hassan (Syracuse, NY: Syracuse University Press, 2008), 8–9.

39. Talal Asad, *Formations of the Secular: Christianity, Islam, Modernity* (Stanford, CA: Stanford University Press, 2003), 205–257.

40. Stanley Lane-Poole, *Studies in a Mosque* (London: Eden, Remington, 1883), 101; and Cromer, *Modern Egypt*, 134.

41. *Al-Manār* 6 (1903): 705, in Muḥammad Rashīd Riḍā, *Fatāwā al-Imām Muḥammad Rashīd Riḍā*, ed. Ṣalāḥ al-Dīn al-Munajjid and Yūsuf Khūrī (Beirut: Dār al-kitāb al-jadīd, 1970), 1:45.

42. See Zayn al-ʿ bidīn Shams al-Dīn Najm, *Būr Saʿīd: Tārīkhuha wa-Taṭawwuruha Mundhu Nash'atihā 1859 Ḥatā ʿAm 1882* (Cairo: al-Hay'a al-ʿAmma al-Miṣriyya li'l-Kitāb, 1987), 94.

43. *Al-Manār* 6 (1903): 862; and Riḍā, *Fatāwā*, 1:67.

44. Ahmad Dallal makes a similar argument about how the nation-state framed Riḍā's legal thought. See Ahmad Dallal, "Appropriating the Past: Twentieth-Century Reconstruction of Pre-modern Islamic Thought," *Islamic Law and Society 7*, no. 1 (2000): 357.

45. Benedict Anderson, *Imagined Communities: Reflections on the Origin and Spread of Nationalism* (London: Verso, 1983).

46. See *Al-Manār* 7 (1904): 575–576.

47. Shaykh Muḥammad Bakhīt al-Muṭīʿī, *Kitāb Irshād Ahl al-Millah ilā Ithbāt al-Ahillah* (Beirut: Dār Ibn Ḥazm, 2000), 144–169.

48. Al-Muṭīʿī, *Kitāb Irshād Ahl al-Millah ilā Ithbāt al-Ahillah*, 144–169.

49. Al-Muṭīʿī appended al-Subkī's manuscript on the verification of Hijrī months in printed form to his own guide. See Taqī al-Dīn Al-Subkī, *Kitāb al-ʿIlm al-Manshūr fī Ithbāt al-Shuhūr* (Cairo: Maṭbaʿat Kurdistān al-ʿIlmīyah, 1329 [1911]).

50. Probably Aḥmad Mūsā al-Zarqāwī, author of *Al-Adillah al-Islāmiyyah ʿAlā Taḥarruk al-Kurah al-Arḍīyah* (Cairo: Matba at al-Hilāl, 1913).

51. S.W. Zwemer, "The Clock, the Calendar, and the Koran," *Moslem World 3* (1913): 262–274.

52. Aḥmad Muḥammad Shākir, *Awā'il al-Shuhūr al-ʿArabīyah: Hal Yajūz Sharʿan 'Ithbātuha bi'l-Ḥisāb al-Falakī?* (Giza: Maktabat Ibn Taymīyah, 1986), 3–4.

53. Ebrahim Moosa, "Shaykh Ahmad Shakir and the Adoption of a Scientifically-Based Lunar Calendar," *Islamic Law and Society* 5, no. 1 (1998): 69.

54. Moosa, "Shaykh Ahmad Shakir," 69.

55. *Al-Waqā'iʿ al-Miṣrīyah*, 23 Rabīʿ al-Awwal [25 July 1867]. See also Sāmī, *Taqwīm*, 2:713.

56. Sāmī, *Taqwīm*, 2:713.

57. Graham Storey, *Reuters: The Story of a Century of News-Gathering* (New York: Crown, 1951), 95.

58. He allocated to it 20,000 francs a year. See Sāmī, *Taqwīm*, 2:782.

59. Sāmī, *Taqwīm*, 1:240.

60. *Wādī al-Nīl*, 18 Jumādā al-ūlā 1287.

61. Subscription fares appeared on the header of every newspaper.

62. *Tashrīʿāt wa-Manshūrāt*, 19 May 1889, 414.

63. See, for example, Stephen Kern, *The Culture of Time and Space, 1880–1918* (Cambridge, MA: Harvard University Press, 1983).

64. Avner Wishnitzer, *Reading Clocks*, Alla Turca: *Ottoman Temporal Culture and Its Transformation during the Long Nineteenth Century* (Chicago: Chicago University Press, forthcoming).

65. Ḥāfiẓ Ibrāhīm, *Dīwān Ḥāfiẓ Ibrāhīm*, ed. Aḥmad Amīn et al. (Cairo: al-Hay'ah al-Miṣrīyah al-ʿAmmah li'l-Kitāb, 1980), 2:37–42.